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**Electronic Brainstorming for the Joint Audit Team and Its Impact on  
Enhancing the Efficiency of the Auditing**

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**Abstract**

The study aimed to determine the impact of electronic brainstorming for the Joint Audit Team on enhancing the efficiency of the auditing. The study employed the analytical-descriptive approach to arrive at logical results that support the study's hypotheses. This was achieved through conducting a field study to gather the opinions of auditors practicing the auditing profession in the southern governorates of Palestine. The study's hypotheses were tested using a range of appropriate and diverse statistical methods. The most significant findings of the study included a substantial and effective influence of electronic brainstorming for joint auditing on various aspects, including increased ability to detect fraud, successful completion of auditing procedures, comprehension of the nature of the audited entity's operations, and the fostering of creative thinking among auditors. These findings contribute to elevating the efficiency of the auditing process. In light of the study's outcomes, a set of recommendations were proposed. The most important of these include the necessity for audit entities to design and implement specialized programs for applying electronic brainstorming throughout all stages of joint auditing work. Additionally, it is essential for relevant and responsible bodies to focus on establishing suitable methods to activate and approve the use of electronic brainstorming for the audit team, with the aim of task distribution and coordinating efforts during joint auditing engagements.

**Keywords:** Electronic brainstorming, Efficiency of the auditing process.

**1. Introduction**

The concept of electronic brainstorming signifies a method used to stimulate individuals' thinking towards novel ideas regarding specific topics. It serves as a means to swiftly garner a substantial number of such ideas from individuals within a brief period. Thus, it constitutes a collective thinking approach aimed at generating diverse creative ideas, particularly in cases where solving a problem individually proves challenging. Collaborative thinking among individuals enhances their innovative capabilities and skills. In this context, individuals have access to more data and information collectively than each person possesses individually. Even if one team member possesses extensive expertise and skill, the information held by another individual in the group can contribute to unveiling new avenues for more suitable ideas.

Electronic brainstorming for the joint audit team is considered a method to explore creative ideas, formulate plans, and establish adequate auditing procedures through open discussions

among team members. Electronic brainstorming encourages creative and unrestricted thinking among participating auditors in the joint audit environment, leading to the generation of optimal ideas for creating a robust, thorough, and systematic audit plan. This plan becomes the team's reference during the audit performance. Furthermore, electronic meetings and gatherings facilitate auditors' contemplation of all possibilities. This process enables members of the joint audit team to select the best available solutions for audit issues by considering all possible options, identifying the pros and cons of each choice, and subsequently opting for the most suitable one.

Consequently, auditing firms engaged in joint audits must direct their attention towards implementing electronic brainstorming as a means to enhance the professional capabilities of their audit teams. This approach assists in executing audit tasks efficiently in accordance with the specific requirements of each firm. It also aids in cost optimization related to task execution while concurrently improving performance. These actions exert a positive influence on the auditing process, thereby enhancing its quality and, consequently, elevating its overall standards.

### *1.1 Problem Statement*

The problem of the study arose due to the auditors' susceptibility to mental dispersion in dealing with certain challenges. These challenges include the fear of inadequately gathering corroborative evidence, the inability to detect fraud and errors, and the failure to execute auditing procedures according to a sound and clear plan. Consequently, electronic brainstorming within the Joint Audit Team might exhibit greater efficiency than traditional individual thinking. As a result, numerous recent attempts have been made to employ electronic brainstorming in collecting and distributing novel ideas and suggestions from participating auditors through diverse methods. Moreover, the use of idea generation techniques in sessions and interactions of electronic mental interaction for joint audit purposes proves highly beneficial for auditors. This approach could aid the team in enhancing their ability to uncover fraud, conducting auditing procedures, comprehending the nature of audited firm operations, and advancing the thinking style of the joint audit team. Thus, the problem of the study can be formulated in addressing the following main question:

*Does the electronic brainstorming of the Joint Audit Team have an impact on improving the efficiency of the auditing?*

From this main question, the following subsidiary questions emerge:

- 1) Does electronic brainstorming of the Joint Audit Team have an impact on enhancing the ability to detect fraud?
- 2) Does electronic brainstorming of the Joint Audit Team have an impact on the completion of auditing procedures?
- 3) Does electronic brainstorming of the Joint Audit Team have an impact on comprehending the nature of the auditing firm's operations?
- 4) Does electronic brainstorming of the Joint Audit Team have an impact on developing their creative thinking?

### *1.2 Significance of the Study*

The significance is based on the subject of electronic brainstorming for the Joint Audit Team and its impact on enhancing the efficiency of the audit task. It has become imperative to direct attention towards electronic brainstorming within the Joint Audit Team to facilitate the exchange of ideas pertinent to the execution of audit tasks in an optimal manner. This, in turn, will enable researchers and specialists to benefit from it in the realm of accounting and auditing, in light of its results and recommendations.

### *1.3 Objectives of the Study*

- 1) Indicating of the impact of electronic brainstorming by the Joint Audit Team on enhancing the ability to detect fraud.
- 2) Identifying the impact of electronic brainstorming by the Joint Audit Team on the completion of auditing procedures.
- 3) Revealing the benefits of electronic brainstorming by the Joint Audit Team and its impact on enhancing understanding of the nature of the firm's operations during auditing.
- 4) Recognizing the electronic brainstorming by the Joint Audit Team and its impact on developing their creative thinking.

### *1.4 Hypotheses of the Study*

Main Hypothesis: There is a statistically significant impact of electronic brainstorming within the Joint Audit Team on enhancing the efficiency of the audit process.

The main hypothesis gives rise to the following sub-hypotheses:

- 1) There is a statistically significant impact of electronic brainstorming within the Joint Audit Team on increasing the ability to detect fraud.
- 2) There is a statistically significant impact of electronic brainstorming within the Joint Audit Team on expediting auditing procedures.
- 3) There is a statistically significant impact of electronic brainstorming within the Joint Audit Team on comprehending the nature of the auditing firm's operations.
- 4) There is a statistically significant impact of electronic brainstorming within the Joint Audit Team on developing their creative thinking.

### *1.5 Limitations of the study*

Spatial Limits: This study was in the southern provinces of Palestine.

Temporal Limits: The study was conducted in the year 2023.

Objective limits: It focused solely on electronic brainstorming within the Joint Audit Team and its impact on enhancing the efficiency of the auditing.

Human Boundaries: Practicing auditors in the southern provinces of Palestine.

### *1.6 Previous Studies*

*Study (Saleh, 2021):* The study aimed to recognize the extent of the impact of independence and neutrality of external auditors on financial audits when following the approach of joint auditing

during collaborative audit engagements. It defined the concept of joint auditing, its significance, and objectives, as well as elucidated the general concept of independence and the specific independence of the audit accountant. The study concluded the presence of a positive relationship between the utilization of the joint auditing approach and the independence of auditors. It recommended the importance of employing joint auditing on an international level due to its favorable influence on enhancing the quality of auditing standards.

*Study (Toroush & Ramadan, 2021):* The study addressed the extent of benefiting from the implementation of the Joint Audit Program in enhancing the audit performance level, while safeguarding the interests of all parties and bolstering quality. The results concluded the potential for applying joint auditing in Libya on a non-mandatory basis. This contributes to enhancing the auditor's neutrality and independence due to the absence of financial pressures between the auditor and the audit service requester. The fees are shared between the partnering audit firms based on agreed-upon criteria. Moreover, joint auditing positively influences the enhancement of audit quality. The study recommended the necessity to reshape the legislative framework related to auditing in Libya to align with modern international developments.

*Study (Al-Kaabi, Al-A'ani, 2020):* The study interested to know the impact of electronic brainstorming on detecting risks of fraud and deception, in addition to recognizing its role in enhancing the quality of services within audit firms in Iraq. The study's results revealed that adopting electronic brainstorming assists in elevating the efficiency of the audit process and enhances performance quality. This is achieved through the audit team conducting improved assessments of fraud and deception risks during sessions, which in turn refines planning quality and augments the ability to identify fraudulent and deceptive activities. Consequently, this bolsters the confidence of report users in the auditing process. The study recommended that the Iraqi Accountants Association emphasize the significance of implementing electronic brainstorming and ensure its practice throughout all stages of auditing, thus contributing to the enhancement of applied audit procedures.

*Study (Al-Zarari, 2019):* The study aimed to analyze the relationship between the significance of brainstorming sessions and the reinforcement of the internal audit function in terms of efficiency. It also investigated the effectiveness of brainstorming procedures that internal auditors can rely on while conducting examination and monitoring activities within companies. These procedures aim to enhance the reliability of financial data provided to management and users. The study revealed a significant correlation between electronic brainstorming sessions and the efficiency and effectiveness of the internal audit function. Electronic brainstorming enhances auditors' professional skepticism during the audit process. The study recommended the necessity of conducting research related to electronic brainstorming and its connection to audit efforts.

*Study (Ghaneem, 2018):* The study delved into analyzing the extent of contribution and impact of utilizing electronic brainstorming by the audit team on the efficiency and effectiveness of joint audit procedures in the Saudi Arabian environment. Its results revealed a significant positive relationship between the electronic application of brainstorming by the joint audit team and the enhancement of performance efficiency during the planning phase of joint audit operations. This, in turn, exerts a favorable influence on the efficiency of implementing joint audit processes. The study recommended the imperative for Saudi Arabian auditing firms to devise plans concerning

the utilization of various electronic brainstorming techniques throughout all stages of joint audit, in collaboration and coordination with the Saudi Auditors Association.

*Study (Velte, 2018):* The study sought to determine the extent of optional joint audit practice and its impact on audit quality and auditors' efforts. The results concluded that opting for joint audit can enhance the efficiency of the auditing process, without leading to an increase in auditors' efforts. The study recommended adhering to joint audit practices, following the example of some advanced countries, due to its positive effect on the quality of the auditing process.

*Study (Nashwan, 2017):* The study focused on the implementation of joint auditing, exploring its impact on enhancing the reliability of financial reports, as well as identifying challenges faced by auditors in the Gaza Strip when conducting joint audits. The study's findings indicated a positive inclination among all respondents toward implementing joint auditing to improve the quality of its outcomes. Additionally, potential difficulties in its application were identified. The study recommended the necessity of encouraging all segments of the financial community to emphasize the shift towards auditing, given its role in enhancing the accuracy of financial report information. Furthermore, the study suggested finding suitable methods to overcome challenges related to implementing joint auditing.

*Study (DeZoort, Harrison, 2016):* The study highlighted on examining the impact of the auditor's work impacted by electronic brainstorming sessions during the audit performance. It concluded the significant importance of electronic brainstorming sessions as a valuable method for exchanging ideas and opinions within the audit team. This is because such sessions assist them in generating innovative ideas and enhancing their capability to propose appropriate solutions. This positive effect subsequently contributes to the improvement of auditing. Additionally, the study identified a substantial inclination towards mitigating potential negative effects in joint auditing. One of the study's key recommendations highlights the necessity of conducting electronic brainstorming sessions for the joint audit team.

*Study (Chen, et al., 2015):* The study conducted a comparison between interactive groups and electronic brainstorming groups by allowing interactive groups to electronically communicate ideas and opinions. The study found that less experienced auditors in interactive groups exhibited less advancement in electronic communication compared to auditors participating in electronic brainstorming groups. Additionally, the study demonstrated that electronically conducted brainstorming sessions aid auditors in comprehending audit procedures. The study recommended encouraging auditors to adopt the electronic brainstorming approach in their sessions due to its numerous benefits, notably promoting sound audit procedures and fostering auditors' creative thinking.

*Study (Rashid and El-Saqa, 2015):* The study delved into brainstorming and its impact on fostering innovative thinking among auditors, with the aim of enhancing their ability to detect fraud and deception during auditing. Additionally, it aimed to comprehend the role of brainstorming in generating high-quality ideas and opinions about fraud, surpassing what auditors might achieve individually. The study's findings indicated that brainstorming serves as a mechanism for uncovering fraud by assembling evidence to improve auditors' capability in identifying fraud or deceit. This is achieved by employing methodologies rooted in information related to the risk of material misstatement due to fraudulent activities. Consequently, the study

advocated for defining fraud risks through brainstorming sessions. Furthermore, the study recommended that the Iraqi Board of Supreme Audit (BSA) organize training workshops and specialized sessions to introduce the benefits of brainstorming. These initiatives, along with the study's own insights, can contribute to the enhancement of auditing performance.

### 1.6.1 General Commentary on Previous Studies

Distinguishing Aspects of this Study from Previous Studies, in terms of:

- Theme: Previous studies focused on the topic of electronic brainstorming for the Joint Audit Team and its impact on enhancing audit efficiency, with an emphasis on exploring the reality of joint auditing in accounting and auditing entities and its effect on elevating their efficiency and quality. Only one study investigated the relationship between electronic brainstorming for the audit team and enhancing the efficiency and effectiveness of joint audit procedures.
- Timeframe: The majority of these studies are recent, conducted from 2015 to 2021.
- Location: Application environments varied in previous studies, including Iraq, Libya, Egypt, Saudi Arabia, Jordan, Ireland, and the United States.
- Methodology: A descriptive-analytical approach was predominantly employed in prior studies.
- Tools: Questionnaire surveys were used in the majority of previous studies.
- Samples: The samples in previous studies differed; some were applied to companies, while others were applied to auditing firms and auditors.

Advantages of the Current Study:

- It was structured as an accumulative and knowledge-building effort, building upon preceding studies on the topic, and contributing to the researchers' endeavors.
- The study focused on electronic brainstorming within the Joint Audit Team and its impact on enhancing audit process efficiency. Therefore, it holds a higher level of specialization compared to other studies. This is because it examined the relationship between two variables: electronic brainstorming within the Joint Audit Team and the enhancement of auditing efficiency through the development of the team's professional performance. This was achieved by augmenting their ability to detect fraud, executing auditing procedures, comprehending the nature of the auditing firm's operations, and refining their creative thinking approaches.

## 2. Conceptual Framework

### 2.1 Concept of Electronic Brainstorming in Auditing

Electronic brainstorming is defined as a "significant tool for exchanging ideas and knowledge among the audit team to identify audit risks. It facilitates generating quality thinking through the interaction of auditors via electronic communication platforms, promoting collective engagement and cognitive stimulation among team members. It mitigates information production barriers, allowing team members to contribute their ideas simultaneously" (Mohd-Nassir, et al., 2016, p. 63).

It is further characterized as: "Enhancing the creative capabilities of the audit team in exchanging and generating innovative ideas. The internet is utilized, enabling team members to input their ideas continuously without interruption" (Chen, et al., 2015, p. 180).

It is also described as: "The preferred approach for application in the auditing process to overcome criticisms of traditional brainstorming. It reduces apprehension and fear among participating audit teams, promoting uninterrupted communication and participation. It effectively addresses any anticipated obstacles, enhancing the outcomes of shared ideas and understanding the effective mechanisms of electronically conducted discussion sessions within joint audit engagements" (Ghanem, 2018).

It can be asserted that electronic brainstorming contributes to formulating innovative and creative solutions characterized by high quality. This leads to the optimal execution of audit tasks during joint audit engagements. Additionally, the electronic brainstorming technique enables continuous communication and interaction among all audit team members, working to minimize criticisms directed at traditional brainstorming approaches.

### *2.2 Definition of Joint Audit*

Joint audit is defined as the collaboration of two independent auditing firms to perform an auditing process in complete coordination based on an agreement. They jointly issue a single report, signed by both firms, in which they indicate the nature and scope of the work performed. Both firms are accountable for material errors that have not been detected and reported (Mohamed, 2021).

It is also defined as the practice where two or more audit firms audit the financial statements of a single client, characterized by the issuance of a joint audit report and the execution of a unified audit program. The division of auditing tasks is carried out according to mutual planning (Matouli, 2013).

Furthermore, it is described as the collaboration of independent auditors, each with distinct contracts, who work together and must arrive at a unified opinion (Abdulhamid, 2014).

Additionally, it is also defined as the division of audit tasks between auditing firms, where each firm performs a portion or all of the auditing steps in a manner, they deem suitable to achieve the objective of the joint audit. Each firm reviews the work of the other (Ghaneem, 2018).

Based on the aforementioned, joint audit is one of the methods of conducting an audit, involving two separate and independent audit firms collaborating to perform a joint audit process encompassing all its stages and steps, contributing positively to enhancing its quality level.

### *2.3 Objectives of Electronic Brainstorming in the Joint Audit Process are as follows:*

- Enhancing communication within the team, leading to the transfer of experiences and the detection of fraud cases and concealment methods to the rest of the audit team. It facilitates conducting audits in light of growing professional skepticism, thereby boosting the effectiveness of applied procedures.
- Electronic brainstorming sessions foster the exchange of creative information and ideas during the audit process. They also enable team members to share opinions concerning professional skepticism related to the content of financial information, management's concealment of manipulation, and financial fraud (Armanius, 2012, p. 96).

- Shedding light on methods of concealing fraud and uncovering errors resulting from manipulation and deceit.
- An increase in the number of shared ideas through electronic brainstorming sessions. The joint audit team can generate innovative ideas through simulation and collaborative thinking.
- Nurturing creative ideas among auditors during electronic brainstorming sessions, subsequently enhancing the efficiency and effectiveness of the audit process (Rasheed, Al-Shaqa, 2015).
- Placing the minds of the joint audit team in a state of significant interaction and effective discussion on all matters to produce valuable audit ideas. The team is provided with an appropriate atmosphere to exchange creative ideas.
- Positive engagement of the participating audit team, constructing various patterns and forms of ideas that expand their creative perspectives, open their minds, and propose solutions while performing tasks (Rasheed, Kouthar, 2018).

The researcher adds that brainstorming represents an appropriate method for conducting audits in general and joint audits in particular. It aims to simplify audit procedures by facilitating communication and interaction, exchanging ideas and information among all participating auditors, as well as dividing the audit program's implementation between them. This contributes to enhancing the neutrality and independence of auditors, thereby ensuring efficient and effective audit performance.

*2.4 Steps for Implementing Electronic Brainstorming Sessions in Joint Audit, carried out as follows:*

- **Identification and Discussion of the Auditing Mission:** The team leader provides auditors with limited information about the nature of the mission. Subsequently, the Joint Audit Team engages in electronic brainstorming to comprehensively discuss all relevant aspects.
- **Preparation of the Auditing Program:** This involves presenting questions pertaining to the plan and identifying various dimensions and facets of the plan. This is achieved by posing questions related to the audit plan through interactive electronic brainstorming sessions among auditors participating in the audit process.
- **Cultivating a Creative Atmosphere for Electronic Brainstorming:** During the sessions, auditors need to mentally prepare themselves to think creatively and respond to the team leader's inquiries in an innovative manner.
- **Generating Innovative Ideas through Electronic Brainstorming Sessions:** The audit team leader invites auditors to a brainstorming session to propose creative ideas aimed at enhancing the efficiency of the auditing process.
- **Evaluation Session for Ideas Arising from Electronic Brainstorming Sessions:** This session aims to assess the creative ideas generated and determine which ideas are viable. Ideas are classified, examined, and the innovative auditing concept to be executed is identified.

*2.5 Electronic Brainstorming and Stages of Joint Audit Procedures, conducted through the following two stages (Mahmoud, 2016):*

First Stage: Contracting Phase for Joint Audit Execution:



Auditing committees oversee the execution of the contracting phase. In this phase, engagement letters are sent to each of the joint audit entities involved in the process. Agreement is reached on the fees, and acceptance letters are received from each of the auditing firms. It is noted that there is no communication between the auditing firms at this stage. The decision of the audit committees to proceed with either joint or individual audits is based on several criteria, including the requirements of auditing task performance laws.

Second Stage: Allocation Phase for Joint Audit Tasks:

According to this stage, auditing committees allocate tasks for the joint audit among the participating auditing firms, based on specific criteria such as the size of the audit firm, client industry specialization, years of experience for the auditing firm. The auditing committees distribute the auditing fees between them based on the tasks assigned to each firm.

### *2.6 The Relationship between Electronic Brainstorming and the Efficiency of the Joint Audit Team*

Electronic brainstorming is a method that aids in increasing the quantity of opinions, ideas, and information exchange, enabling the selection of the best and most suitable among them. In the context of adopting electronic methods, electronic brainstorming has been pursued as a means of remote communication and interaction, allowing team members to generate new creative ideas through continuous electronic communication using various techniques in this field, seamlessly and consistently.

Interest in applying techniques related to electronic brainstorming has grown in order to find high-quality solutions that contribute to improving audit efficiency, especially when performed by the joint audit team. The researcher believes that the use of electronic brainstorming techniques and continuous sessions have provided distinctive additions to the audit process in various domains, fostering advancement and elevation.

Additionally, electronic brainstorming has been leveraged in the planning stage of joint audits, assisting the audit team in feeling as a unified and harmonious entity. This aids in exchanging skills, knowledge, and experiences rapidly among them, leading to the generation of ideas, opinions, and mechanisms that contribute to problem-solving during the audit process. This observation has been confirmed by studies such as (Chen et al. 2015) and Mohd-Nassir et al. (2016), emphasizing the positive role of electronic brainstorming in enhancing the performance level of the audit team during joint audit planning.

Furthermore, electronic brainstorming has contributed to audit execution by reducing the likelihood of errors by auditors and enhancing the attainment of effective audit evidence. This consequently elevates the efficiency of joint audit procedures, enabling auditors to refine their professional judgments. This has been noted in the study by (Ghaneem, 2018), highlighting the impact of electronic brainstorming during joint audits in enhancing the team's performance when carrying out audit tasks.

Undoubtedly, enhancing the efficiency and quality of joint audit procedures through electronic brainstorming positively influences data credibility and improves audit outputs by aligning opinions among participating audit team members. It also standardizes differences among them to arrive at a unified professional judgment. The study of (Mahmoud, 2016) concluded that the

efficiency of the audit team's performance increases in the phase of preparing the auditing report, which serves as its final output, with the use of electronic brainstorming in joint auditing.

In light of the aforementioned, the diverse contributions of electronic brainstorming in elevating the overall performance efficiency of auditing work, particularly joint audits, become evident. This helps narrow the expectations gap by achieving the satisfaction of financial community stakeholders with auditing results. The researcher also believes that the professional performance of the joint audit team could be influenced by using such technology from aspects and dimensions considered significant to team members, such as increasing their ability to detect fraud, accurately conducting auditing procedures, understanding the nature of the auditing firm, and developing their creative thinking.

### **3. Field Study**

#### **Methodology**

This aspect focused on testing the hypotheses upon which the study was based. This was achieved by surveying the opinions of practicing accountants engaged in the auditing profession in the southern governorates of Palestine. The field study can be presented as follows:

##### *3.1 Study Method*

The study employed a questionnaire as its study tool, which was designed along four dimensions. Each dimension addressed one hypothesis of the study, thus encompassing essential and requisite information for conducting the study. Additionally, the questionnaire included the extracted variables.

##### *3.2 Study Population*

The field study was conducted on all practicing accountants engaged in the profession in the southern provinces of Palestine, totaling (97) auditors according to the records of the Union of Accountants and Auditors in Gaza. After rigorous follow-up, (87) valid questionnaires were retrieved for analysis, representing a proportion of (89.7%) of the total distributed questionnaires. This significantly contributes to obtaining authentic and genuine results, thus facilitating their generalization.

##### *3.3 Validity of the study tool (Arbitrators)*

The questionnaire was presented to a group of specialized arbitrators. Their opinions and feedback were taken into account, and necessary modifications or deletions to the paragraphs were made, followed by their distribution.

##### *3.4 The Criterion Adopted in the Study*

To achieve the study's objectives and analyze the collected data, the Statistical Package for the Social Sciences (SPSS) was employed. The study's criterion was established to determine the standard values of means according to the Likert Scale. The results of the agreement level are as follows:

Very Low: From 1 to 1.80

Low: Greater than 1.80 to 2.60

Moderate: Greater than 2.60 to 3.40

High: Greater than 3.40 to 4.20

Very High: Greater than 4.20 to 5.00

3.5 Statistical Tools

The study relied on a set of statistical tools, the most significant of which are (percentages and frequencies, arithmetic average, linear regression analysis, one-sample t-test, eta-squared coefficient  $\eta^2$ ).

4. Analysis and Discussion of Study Results, and Testing its Hypotheses

*First hypothesis results:* There is a statistically significant impact of electronic brainstorming within the Joint Audit Team on increasing the ability to detect fraud. The following Table (1) illustrates the results of the dimension measuring the impact of electronic brainstorming on increasing the ability to detect fraud.

Table 1. Illustrates the Dimension for Measuring the Impact of Electronic Brainstorming on Increasing the Ability to Detect Fraud

Paragraph	Arithmetic Average	Standard deviation	Relative weight	T - Test	Probabl e Value	$\eta^2$	Impact size	Ranking	Degree of approval
1. Skill and experience exchange among the Joint Audit Team contributes to facilitating the process of financial auditing and accounting elements	4.21	0.990	84.1	11.37	0.000	0.60	big	3	Very high
2. Electronic brainstorming assists in harnessing the diverse experiences of auditors to mitigate the occurrence of errors during auditing	4.07	1.274	81.4	7.83	0.000	0.42	big	5	High
3. Electronic brainstorming leads to an increased capability of the Joint Audit Team to detect fraud and manipulation in financial reports	4.05	0.663	80.9	14.71	0.000	0.72	big	6	High
4. Electronic brainstorming works to elevate the accuracy level of joint auditing due to the multitude of procedures for detecting data reliability	4.70	0.552	94.0	28.73	0.000	0.91	big	1	Very high
5. Electronic Brainstorming Contributes to Modifying the Audit Program as Needed to Uncover Accounting Practices	4.18	1.006	83.7	10.98	0.000	0.58	big	4	High
6. Electronic Brainstorming for the Joint Audit Team works to enhance the team's performance in detecting financial statement fraud	4.30	0.878	86.0	13.81	0.000	0.69	big	2	Very high
<b>All paragraphs</b>	<b>4.25</b>	<b>0.458</b>	<b>85.0</b>	<b>25.47</b>	<b>0.000</b>	<b>0.88</b>	<b>big</b>	<b>-</b>	<b>Very high</b>

The previous Table No. (1) demonstrates the following in accounting terms:

- 1) The researchers highly agreed on the axis of "Measuring the Impact of Electronic Brainstorming on Increasing the Ability to Detect Fraud", with a calculated average of (4.25), representing a percentage of (85%).
- 2) Paragraph (4) "Electronic brainstorming enhances the accuracy level of joint audit by diversifying procedures to verify data reliability" received the highest level of agreement, at a percentage of (94%).
- 3) Paragraph (3) "Electronic brainstorming leads to an increased capacity for the audit team to

detect fraud and manipulation in financial reports" obtained the lowest level of agreement, at a percentage of (80.9%).

- 4) The Eta-squared coefficient ( $\eta^2$ ) for all the paragraphs in the aforementioned axis in Table No. (1) exceeded (0.14), and the overall value for the axis was (0.88). This indicates a substantial effect size. The researcher attributes this to the broader scope that brainstorming sessions provide for idea exchange and the enhancement of audit procedures. Consequently, the team's ability to identify errors and fraud is improved. As a result, the first sub-hypothesis is accepted.

*Second hypothesis results:* There is a statistically significant impact of electronic brainstorming within the Joint Audit Team on expediting auditing procedures. The following Table No. (2) illustrates the results of the dimension measuring the impact of electronic brainstorming on the on expediting auditing procedures.

Table 2. Illustrates the Dimension for Measuring the Impact of Electronic Brainstorming on Expediting Auditing Procedures

Paragraph	Arithmetic Average	Standard deviation	Relative weight	T Test	Probable Value	$\eta^2$	Impact size	Ranking	Degree of approval
1. Electronic brainstorming during joint auditing contributes to generating innovative ideas in the planning phase	4.18	0.561	83.7	19.69	0.000	0.82	big	3	High
2. The electronic mental interaction contributes to the development of skills for the joint audit team to perform the task as required	4.13	0.833	82.5	12.62	0.000	0.65	big	4	High
3. Electronic brainstorming for the Joint Audit Team works to enhance communication and interaction methods among team members for exchanging ideas confidentially and in the shortest possible time	4.20	0.790	83.9	14.11	0.000	0.70	big	2	High
4. Implementing Electronic Brainstorming for the Joint Audit Team aids in enhancing the team's capability to detect errors and fraud during the auditing	3.95	0.926	79.1	9.60	0.000	0.52	big	5	High
5. Electronic Brainstorming by Members of the Joint Audit Team Contributes to enhancing the accuracy and efficiency of the necessary audit evidence for execution of the work	3.51	0.791	70.1	5.97	0.000	0.29	big	7	High
6. Adopting the electronic brainstorming approach for the audit team helps to ensure the integrity of financial data by detecting significant misrepresentations during the execution of the auditing plan	3.85	0.815	77.0	9.74	0.000	0.52	big	6	High
7. Electronic brainstorming provides the Joint Audit Team with accuracy, consensus of opinions among its members, and reduces professional skepticism upon the completion of the audit. This leads to forming an appropriate and	4.24	0.876	84.8	13.22	0.000	0.67		1	Very high

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unified professional opinion									
<b>All paragraphs</b>	<b>4.01</b>	<b>0.404</b>	<b>80.2</b>	<b>23.26</b>	<b>0.000</b>	<b>0.8 6</b>	<b>big</b>	<b>-</b>	<b>High</b>

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The previous Table No. (2) reveals the following:

- 1) The researchers unanimously agreed to a high degree on the dimension "Measuring the Impact of Electronic Brainstorming on Expediting Auditing Procedures", with an arithmetic mean of (4.01), equivalent to a percentage of (80.2%).
- 2) Paragraph (7) "Electronic brainstorming provides the Joint Audit Team with accuracy, consensus of opinions among them, reduces professional doubt upon completing the audit, and yields a suitable and unified professional judgment" received the highest agreement rate at (84.8%).
- 3) Paragraph (5) "The use of electronic brainstorming by members of the Joint Audit Team contributes to enhancing the accuracy and efficiency of the necessary audit evidence for task execution" obtained the lowest agreement rate at (70.1%).
- 4) The Eta-squared coefficient ( $\eta^2$ ) for all paragraphs in the aforementioned dimension in Table number (2) exceeded (0.14). The total value for the dimension was (0.86), indicating a substantial effect size. The researcher explains this by stating that brainstorming assists the team in allocating and dividing audit tasks, thus facilitating the performance of each stage. Consequently, the second sub-hypothesis is accepted.

*Third hypothesis results:* There is a statistically significant impact of electronic brainstorming within the Joint Audit Team on comprehending the nature of the auditing firm's operations. The following Table No. (3) illustrates the results of the dimension measuring the impact of electronic brainstorming on comprehending the nature of the auditing firm's operations.

Table 3. Illustrates the Dimension for Measuring the Impact of Electronic Brainstorming on Comprehending the Nature of the Auditing Firm's Operations

Paragraph	Arithmetic Average	Standard deviation	Relative weight	T Test	Probable Value	$\eta^2$	Impact size	Ranking	Degree of approval
1. Electronic brainstorming provides the joint audit team with a comprehensive understanding of all economic factors related to the auditing firm's operations, thereby enhancing their financial estimations	3.87	1.043	77.5	7.81	0.000	0.41	big	4	High
2. Electronic brainstorming assists the Joint Audit Team, through opinions, in assessing the magnitude of business risks and understanding the nature of the sector to which the firm belongs	3.97	1.028	79.3	8.76	0.000	0.47	big	3	High
3. Sessions of electronic brainstorming for the participating audit team lead to the development of an effective auditing program that is closely aligned with all the surrounding conditions of the firm	4.13	0.728	82.5	14.43	0.000	0.71	big	1	High
4. Applying electronic brainstorming sessions for the participating audit team assists in formulating meaningful discussions with managers and internal auditing staff within the firm, thereby enhancing the execution of task procedures	3.45	1.292	69.0	3.24	0.000	0.11	big	7	High
5. Electronic brainstorming empowers the participating audit team to enhance their comprehension of legislations and regulations that significantly impact the firm, thereby improving the quality of their performance	3.98	1.011	79.5	9.01	0.000	0.49	big	2	High
6. The electronic cognitive interaction of the joint audit team functions to assess evidential matter and accounting estimates, thereby enhancing the efficiency of auditing operations	3.78	1.289	75.6	5.66	0.000	0.27	big	5	High
7. Electronic Brainstorming for the Joint Audit Team enables them to conduct a suitable and comprehensive study of accounting policies, aiding them in refining their professional judgments	3.78	1.125	75.6	6.48	0.000	0.33		5	High
<b>All paragraphs</b>	<b>3.85</b>	<b>0.534</b>	<b>77.0</b>	<b>14.86</b>	<b>0.000</b>	<b>0.72</b>	<b>big</b>	<b>--</b>	<b>High</b>

It is evident from the preceding Table No. (3) as follows:

- 1) The researchers agreed significantly on the axis of "Measuring the Impact of Electronic Brainstorming on Comprehending the Nature of the Auditing firm's Operations." The calculated mean was (3.85), accounting for (77%).
- 2) Paragraph (3) "Electronic brainstorming sessions for the participating audit team lead to the development of an effective auditing program that is aligned with all circumstances

surrounding the firm", received the highest agreement rate at (82.5%).

- 3) Paragraph (4) "The application of electronic brainstorming sessions for the participating audit team assists in formulating meaningful discussions with managers and internal audit staff within the firm, thereby enhancing task performance procedures", obtained the lowest agreement rate at (69%).
- 4) The Eta-squared coefficient ( $\eta^2$ ) for all paragraphs in the aforementioned axis, as per Table (3), was greater than (0.14), with a total axis value of (0.72). This indicates a substantial impact. The researcher believes that brainstorming meetings and sessions contribute to the formation of a comprehensive and integrated database and information about the comprehensive performance of the audited entity. Therefore, the third hypothesis is accepted.

*Forth hypothesis results:* There is a statistically significant impact of electronic brainstorming within the Joint Audit Team on developing their creative thinking. The following Table No. (4) illustrates the results of the dimension measuring the impact of electronic brainstorming on developing creative thinking.

Table No. (4): Illustrates the Dimension for Measuring the Impact of Electronic Brainstorming on Developing Creative Thinking

Paragraph	Arithmetic Average	Standard deviation	Relative weight	T Test	Probable Value	$\eta^2$	Impact size	Ranking	Degree of approval
1. Electronic brainstorming enables the Joint Audit Team to exchange ideas simultaneously, a factor that reflects positively on enhancing the efficiency of auditing procedures	3.68	0.958	73.6	6.60	0.000	0.34	big	7	High
2. Electronic brainstorming enables the Joint Audit Team to find suitable solutions for the challenges they might encounter during the auditing process, thereby reducing audit risks	3.78	0.813	75.6	8.97	0.000	0.48	big	6	High
3. Brainstorming is considered a more straightforward and more capable method of generating ideas by the Joint Audit Team, a factor that reflects on the efficiency and effectiveness of the auditing	3.93	0.950	78.6	9.14	0.000	0.49	big	4	High
4. Utilizing electronic brainstorming by the Joint Audit Team facilitates a greater focus on tasks, enabling the team to perform its duties more effectively	3.87	0.950	77.5	8.58	0.000	0.46	big	5	High
5. Electronic brainstorming can enhance the capabilities of the Joint Audit Team in assessing the relative significance of an item, thereby assisting them in employing professional skepticism throughout all audit stages	3.94	1.135	78.9	7.75	0.000	0.41	big	3	High
6. Utilizing Electronic Brainstorming for the Joint Audit Team leads to the development of their accounting, legal, and auditing knowledge, enhancing the auditing	4.40	0.799	88.0	16.37	0.000	0.76	big	1	Very high
7. Electronic brainstorming for the	4.00	0.731	80.0	12.75	0.000	0.65		2	High

joint audit team assists in enhancing their academic and practical capabilities in performing audit tasks, thereby improving their quality

<b>All paragraphs</b>	<b>3.94</b>	<b>0.421</b>	<b>78.9</b>	<b>20.92</b>	<b>0.000</b>	<b>0.84</b>	<b>big</b>	<b>--</b>	<b>High</b>
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The previous Table No. (4) reveals the following:

- 1) Respondents highly agreed on the "Measurement of the Impact of Electronic Brainstorming on Developing Creative Thinking" dimension, with an average of (3.94) and a percentage of (78.9%).
- 2) Paragraph (6) "The use of electronic brainstorming for the joint audit team leads to the development of their accounting, legal, and auditing knowledge, thereby enhancing the auditing", received the highest level of agreement at a rate of (%88).
- 3) Paragraph (1) "Electronic brainstorming allows the joint audit team to exchange ideas simultaneously, which reflects on improving the efficiency of auditing procedures," obtained the lowest level of agreement at a rate of (%73.6).
- 4) Eta-squared coefficient ( $\eta^2$ ) for all paragraphs in the aforementioned dimension, according to table number (4), were greater than (0.14), with a total dimension value of (0.84). This indicates a substantial impact size, suggesting that it is due to the benefits achieved through diverse and idea-exchanging electronic brainstorming sessions. This process contributes to the creation of innovative ideas among team members during their collaborative performance. Hence, the fourth hypothesis is accepted.

**5. Results and Recommendations**

*5.1 Results:*

The study yielded significant insights into the utilization of electronic brainstorming within the Joint Audit Team and its impact on the auditing process. The key findings are as follows:

Firstly, the majority of respondents' opinions strongly indicated that electronic brainstorming within the Joint Audit Team contributes significantly to enhancing the efficiency of the auditing process. This suggests that the integration of technology in the brainstorming phase positively influences audit operations.

Secondly, the study revealed a substantial and effective impact of electronic brainstorming on increasing the Joint Audit Team's ability to detect fraud and manipulation. The technological tools used in brainstorming sessions evidently enhance the team's capacity to identify irregularities in audited entities.

Furthermore, the accomplishment of audit procedures was found to be positively influenced to a very high extent when electronic brainstorming was utilized by the Joint Audit Team. This demonstrates that technology-enabled collaborative brainstorming enhances the effectiveness and timeliness of audit tasks.

Moreover, electronic brainstorming within the Joint Audit Team was observed to have a substantial effect on deepening the team's understanding of the nature of the audited entity. This deeper comprehension can lead to more precise and targeted audit procedures.



Lastly, the application of electronic brainstorming within the Joint Audit Team was found to contribute significantly to the development of creative and innovative thinking among team members. This suggests that technology fosters a culture of innovation within the auditing profession.

### *5.2 Recommendations*

Based on the study results, several recommendations can be made:

First and foremost, it is essential for audit entities to design and implement specialized programs for applying electronic brainstorming at all stages of joint audit operations. This proactive approach can harness the full potential of technology to enhance audit efficiency.

Furthermore, attention from relevant and responsible bodies is necessary to establish suitable methods for activating and endorsing the use of electronic brainstorming within the audit team. This should include the distribution of tasks and coordination of efforts during joint audit engagements, ensuring a smooth integration of technology.

Additionally, it is recommended to encourage all auditing professionals to enhance their capabilities in restoring trust in the auditing profession and to keep pace with the advancement of information technology in the Palestinian environment. Continuous professional development in technology-related audit skills is crucial.

Lastly, audit firms should adopt the approach of joint auditing and practice it through modern electronic means, thereby enhancing their professional performance efficiency. This adoption can play a pivotal role in narrowing the expectation gap and improving the quality of audit services.

### *5.3 Future Proposed Studies*

In light of the findings, several avenues for future research are suggested:

- The Prospective Use of Electronic Brainstorming for Joint Audit in Managing Audit Risks: Investigating how electronic brainstorming can be employed to identify and mitigate audit risks in joint audit settings.
- The Role of Electronic Brainstorming Technology in Rationalizing Professional Judgments of Joint Auditors: Exploring how technology impacts the decision-making and judgment processes of auditors in collaborative settings.
- The Impact Assessment of Electronic Brainstorming for Joint Audit on Enhancing the Quality of Financial Reports: Analyzing how the integration of electronic brainstorming affects the overall quality and reliability of financial reports produced by audited entities.

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