

Research Article

The Impact of COVID-19 on the Quality of Auditing from the Point of View of Jordanian Certified Public Accountants

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Abstract

The aim of this study is to investigate the impact of the COVID-19 pandemic on audit quality from the perspective of Jordanian Certified Public Accountants. It also aims to identify any differences in the views of Jordanian Certified Public Accountants regarding this impact based on respondents' demographic characteristics such as gender, academic qualification, scientific specialization, job title, years of experience in audit, and professional certifications. A quantitative approach was used in this study, where 150 questionnaires were distributed to 150 Jordanian certified public accountants, and 144 questionnaires were retrieved (27 of them were incomplete), resulting in 117 questionnaires being used for statistical analysis. The results of the study indicated that the COVID-19 pandemic had a significant impact on audit quality through the dimensions of audit fees, going concern assessment, audit procedures, auditor's experience, audit period, and audit firm size. The results also showed that there were differences in the views of Jordanian Certified Public Accountants regarding the impact of the COVID-19 pandemic on audit quality based on academic qualification, job title, and years of experience in auditing, while no differences were attributed to gender, scientific specialization, and professional certifications of the respondents. Based on the study's findings, the researcher provides several recommendations, including: Audit firms should prioritize the development of skills and experiences of their employees through alternative training programs and remote work arrangements. Audit firms should also review their audit processes and procedures to adapt to the new business environment created by the COVID-19 pandemic. Regulatory bodies should consider reviewing their oversight standards to address the exceptional challenges posed by the COVID-19 pandemic especially with regard to auditing and quality auditing.

Keywords

COVID-19 Pandemic, Audit Quality, Jordanian Certified Public Accountants

1. Introduction

At the end of 2019, the COVID-19 pandemic emerged, and in early 2020, the world witnessed rapid developments related to the outbreak, prompting the World Health Organization (WHO) to take action to curb its spread and repercussions. As most countries and governments around the world have taken

measures to reduce the virus's spread by introducing total or partial lockdowns in all sectors of countries, the global economy has been severely affected by the pandemic. In April 2020, the World Trade Organization (WTO) described this impact as potentially more severe than that of the global fi-

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nancial crisis of 2007-2008.

While these measures are crucial at the health sector level, they have also significantly impacted companies and the work environment. According to Al Shbail, *et. al.*, this made a negative impact on a large part of the world's economic and social sectors [4]. KPMG found that many governments have imposed restrictions on enterprise economic activity, leading to economic disruptions that have affected investors' confidence in the company's financial performance, resulting in uncertainty and the need for reliable information and transparency [19].

For this reason, to restore confidence, reliable information must be presented through financial reports that provide fair and reliable information, without any doubt. The auditor must provide this information through the audit process.

In the context of the COVID-19 pandemic, it is crucial to identify and address the challenges faced by audit committees and auditors to ensure the provision of reliable and transparent financial information. To gain a clear understanding of the pandemic's impact on the quality of auditing, it is imperative to define both audit and audit quality.

The outbreak of the COVID-19 pandemic has presented unprecedented challenges to auditors and the audit process, primarily due to the various procedures related to controlling the spread of the virus, such as closures, physical distancing, and other similar measures. Recognizing this challenge, the Financial Reporting Council (FRC) has issued guidelines and instructions for auditors to ensure that they can perform their duties effectively while adhering to social distancing protocols [11].

Based on the importance of the quality of auditing, this study was introduced to identify the impact of COVID-19 pandemic on the quality of auditing from the point of view of Jordanian Certified Public Accountants.

2. Methodology of Study

2.1. Importance and Objectives of Study

The study acquires its importance from several points, which can be summarized as follows:

1. The COVID-19 pandemic has a significant impact on various industries, including Accounting and Auditing. However, a limited number of studies have investigated the relationship between COVID-19 and audit quality, particularly in sub-topics such as audit fees, going-concern assessment, audit procedures, audit experience, audit tenure, and audit firm size.
2. The study's importance is essential as it provides insight into potential issues that may affect audit quality during crises, such as the COVID-19 pandemic.
3. The study is one of the few studies that examine if there is statistically significant differences in the impact of COVID-19 on the quality of auditing according to personal factors of Jordanian Certified Public Accountants,

such as gender, academic qualification, scientific specialization, job title, number of years of experience in auditing accounts, and professional certificates.

4. The study's findings can serve as a reference point for future research on the effects of crises on audit quality and provide valuable guidance for auditing professionals worldwide to improve audit quality in exceptional circumstances.
5. This study is considered one of the few studies (and may be the first) that has been studied the relation between the COVID-19 pandemic and the quality of auditing from the perspective of Jordanians Certified Public Accountants.

From the above, appears the importance of the study, which seek to identify the impact of COVID-19 pandemic on the quality of auditing from the point of view of Jordanian Certified Public Accountants.

The objectives of the study could be formulated as follows:

1. Identify the impact of COVID-19 pandemic on audit quality (measured by six factors: audit fees, assessment of Going Concern, audit procedures and processes, auditors' experience, audit tenure, and audit firm size) from the point of view of Jordanian Certified Public Accountants.
2. Investigate whether there are any significant differences in the impact of the pandemic on audit quality based on various personal factors of the respondents (including gender, academic qualification, scientific specialization, job title, years of experience in audit, and professional certifications).

2.2. The Problem of the Study

The problem of this study is to identify the impact of COVID-19 pandemic on audit quality from the point view of Jordanian Certified Public Accountants.

The researchers can formulate the problem of study through the following two sub - questions:

1. Is there any impact of COVID-19 pandemic on audit quality (measured by six factors: audit fees, assessment of Going Concern, audit procedures and processes, auditors' experience, audit tenure, and audit firm size) from the point of view of Jordanian Certified Public Accountants?
2. Is there any significant differences in the impact of the pandemic on audit quality based on various personal factors of the respondents (including gender, academic qualification, scientific specialization, job title, years of experience in audit, and professional certifications)?

2.3. Theoretical Framework

COVID-19 pandemic has presented exceptional challenges and uncertainty for business, potentially leading to profit

manipulation. This situation places significant pressure on auditors to provide accurate and high-quality information to stakeholders. For example, auditors may face difficulties in conducting physical audits or verifying financial information due to restrictions on travel and access to data.

According to Mike Suffield, the Director of Professional Insights at the Association of Chartered Certified Accountants (ACCA) "COVID-19 pandemic has had a profound impact on the audit profession" [1, 21]. Auditors face increased challenges due to the pressure to conclude audits amidst the pandemic, resulting in difficulties in obtaining reliable audit evidence. Moreover, the pandemic has created challenges for auditors when making sensitive judgments on companies, such as determining if a company is a going concern.

The researchers in this study measured audit quality by six factors, which are:

Audit Fees: The concept of audit fees, as highlighted by Kamilis a critical aspect of auditing that involves the monetary compensation provided to auditors for conducting a comprehensive examination of an entity's financial statements [17]. The determination of audit fees is primarily contingent upon the contractual agreement reached between the auditor and the audited organization, which considers several factors, including the duration of the audit process and the number of personnel required to carry out the audit. COVID-19 pandemic has had a significant impact on audit fees, which may result in lower quality audits, as noted by Reyes *et al.*, [25].

Going-Concern Assessments: As auditing is widely regarded as a crucial trust mechanism in society, auditors play a vital role in assessing a company's status as a going concern [8]. Each year, auditors are required to produce an audit report for their clients, and as part of this process, they must determine whether the company can continue operating as a going concern for at least the next 12 months (ISA 570, Revised). The standard (ISA 570, Revised) also states that if the auditor has reason to doubt the company's ability to survive, they must issue a going concern warning.

Audit Procedures and Processes: The auditing process is a multifaceted activity that involves examination, investigation, and report. The ultimate outcome of this process is the production of a report, which is the direct result of a rigorous and methodical process of gathering and assessing evidence. In accordance with International Auditing Standard 500 "Audit Evidence," auditors are responsible for designing and implementing procedures that are necessary to obtain adequate and suitable audit evidence. This means that auditors must exercise due diligence in obtaining evidence that is sufficient in quantity and appropriate in quality to support the findings and conclusions contained in the audit report. Therefore, auditors may need to resort to alternative methods to gather evidence, such as virtual inspections, electronic confirmations, and interviews, to ensure the completion of the audit process despite the constraints imposed by the pandemic [14].

Audit Experience: Liahmad and Yuni; Siddiqi, *et al.*, defines

experienced auditors as individuals who possess a deeper understanding of the intricacies of financial statements and are able to provide reasonable explanations for any errors that may arise. In addition to their proficiency in identifying errors, they are also able to classify these errors based on the audit objectives and the structure of the underlying accounting system [20, 28]. According to Barretto, *et al.*, audit firms typically organize practical courses to develop the skills of their audit staff. However, in response to government-imposed social distancing measures due to the COVID-19 pandemic, audit firms have had to cancel their training programs. This is a cause for concern, as it may lead to a negative impact on the quality of the audit process [7].

Audit Tenure: According to Alsmairat, *et al.*, "Auditor tenure is described as the length of the auditor-client relationship" [5]. The COVID-19 pandemic has had a significant impact on business operations, causing widespread disruptions and necessitating a shift towards remote work. The pandemic has the potential to affect audit tenure in various ways. For example, the closure of businesses and disruptions of operations due to the pandemic may lead to delays in audit procedures, thereby extending the audit tenure. This may have implications for audit quality since long audit tenures may compromise auditor independence and objectivity, reducing audit quality.

Audit Firm Size: According to Hazaea, *et al.*, audit firm size can be distinguished based on several factors, such as the number of CPA bodies, partners, professional staff, and clients served by the firm [13]. This definition highlights the multi-dimensional nature of audit firm size and emphasizes the importance of considering various factors when evaluating an audit firm's size. The relationship between audit firm size and audit quality has been a topic of discussion among scholars. Kamil found a positive correlation between audit firm size and audit quality. They also noted that the size of the audit firm is positively related to the audit fee [17]. However, Crismonika, *et al.*, arrived at a contrasting conclusion, indicating that audit firm size is negatively correlated with audit quality [9].

2.4. Previous Literature and What Distinguishes the Current Study from It

When the researchers back to the previous studies, they found a deficiency in the literature that have linked between COVID-19 pandemic and audit quality measured by all factors used by the current study, but the researchers will present the most relevant studies to the subject of this study, which are:

The study by OECD shown that COVID-19 pandemic has caused a severe economic downturn and could potentially lead to long-lasting social ramifications [23]. Goodell was investigated the impact of COVID-19 pandemic on financing and the cost of capital, and shown that the outbreak of COVID-19 pandemic, along with other similar global crises, has had an unprecedented and damaging impact on the world economy [12]. It is reasonable to anticipate that the financing

and cost of capital for firms will be affected in the long term.

Albitar, *et al.*, examined the impact of COVID-19 pandemic on audit quality [2]. However, the study only discussed the theoretical effects of the pandemic on audit quality and did not provide empirical evidence to support the researchers claims. Al-Khasawneh has suggested that lower audit fees may result in compromised audit quality [3]. Reyes *et al.*, emphasizes that it is important to consider the potential consequences of such fee reductions for audit quality and investor protection [25].

According to Albitar, *et al.*, COVID-19 pandemic has had a significant impact on businesses worldwide, with many struggling to maintain their operations amidst closures and reduced sales. As a result, auditors have faced challenges in evaluating whether companies can continue operating as a going concern, which has led to a high frequency of audit reports with uncertainties [2].

KPMG suggests that auditors should rely more heavily on analysis procedures to obtain a comprehensive understanding of a company's financial status, which would result in a reduction of costly and time-consuming detailed tests [19]. Rose *et al.*, found that auditor experience has a significant effect on audit quality [26].

Two studies have explored the impact of auditor experience on audit quality, yielding somewhat contradictory results. Ningrum and Budiarta, found that experienced auditors tend to provide higher quality audits compared to their inexperienced counterparts [22]. Conversely, Kertarajasa, *et al.*, found that auditor experience did not have a significant impact on audit quality [18].

Prasanti, *et al.*, found that work experience has a positive impact on audit quality. The study revealed that auditors with greater experience tend to perform their duties with fewer errors, resulting in a higher quality audit [24].

Hazaes, *et al.*, proposed that the quality of audit services is contingent upon the availability of four key features in an audit firm's human capital. These features include auditors' education, continuing professional education, experience, and professionalism [13]. Indrayati, *et al.*, found that audit tenure has a significant negative effect on audit quality [15].

In a study conducted by Al-Thuneibat, *et al.*, it was observed that the development of a close acquaintance between the auditor and the client over a prolonged period of engagement could result in the formation of a friendly relationship [6].

Kamil reported that his study found no significant impact of the audit firm's tenure on audit quality. But when he examined the impact of audit firm size on audit quality, the study findings revealed a significant influence [17].

And perhaps what distinguishes the current study from the previous studies, is the focus on the impact of COVID-19 pandemic on audit quality measured by main six factors. Also, what it distinguishes the current study from previous studies that it was made on the population of Jordanians Certified Public Accountants as never before such a study conducted (within limits of researchers knowledge) to this population.

2.5. Model of Study and Its Variables

The researchers designed the study model, as follows:

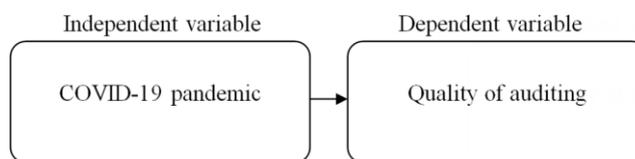


Figure 1. Model of study.

2.6. Hypotheses of the Study

In order to achieve the objectives of the study, the researchers formulated the study hypotheses as follows:

The first main hypothesis (H01): There is no significant impact of COVID-19 pandemic on audit quality from the perspective of Jordanian Certified Public Accountants.

In order to examine the impact of COVID-19 on audit quality, the researchers derived the following sub-hypotheses:

H01-1: There is no significant impact of COVID-19 pandemic on audit fees.

H01-2: There is no significant impact of COVID-19 pandemic on the assessment of going concern.

H01-3: There is no significant impact of COVID-19 pandemic on audit procedures and processes.

H01-4: There is no significant impact of COVID-19 pandemic on auditors' experience.

H01-5: There is no significant impact of COVID-19 pandemic on audit tenure.

H01-6: There is no significant impact of COVID-19 pandemic on audit firm size.

The second main hypothesis (H02): There are no statistically significant differences in the impact of COVID-19 pandemic on audit quality according to the personal factors of Jordanian Certified Public Accountants (gender, academic qualification, scientific specialization, job title, years of experience in audit, and professional certifications).

In order to examine the statistically significant differences in the impact of COVID-19 pandemic on audit quality according to the personal factors of Jordanian Certified Public Accountants, the researchers derived the following sub-hypotheses:

H02-1: There are no statistically significant differences in the impact of COVID-19 pandemic on audit quality according to the gender of Jordanian Certified Public Accountants.

H02-2: There are no statistically significant differences in the impact of COVID-19 pandemic on audit quality according to the academic qualification of Jordanian Certified Public Accountants.

H02-3: There are no statistically significant differences in the impact of COVID-19 pandemic on audit quality according to the scientific specialization of Jordanian Certified Public Accountants.

H02-4: There are no statistically significant differences in

the impact of COVID-19 pandemic on audit quality according to the job title of Jordanian Certified Public Accountants.

H02-5: There are no statistically significant differences in the impact of COVID-19 pandemic on audit quality according to the years of experience in audit of Jordanian Certified Public Accountants.

H02-6: There are no statistically significant differences in the impact of COVID-19 pandemic on audit quality according to the professional certifications of Jordanian Certified Public Accountants.

2.7. The Study Population and Sample

The study population consisted of all Jordanian Certified Public Accountants registered in Jordan which are (554) Certified Public Accountants at the beginning of year 2023 (According to Statistics of Jordanian Association of Certified Public Accountants (JACPA) in 5/March/2023) [16].

It has been selected sample deliberate of auditors working in the branches and offices of major international audit firms (Big Four), And a random sample of auditors working in auditing offices in the Capital city (Amman) and study sample size (150) auditors, representing 27% of the study population.

(150) questionnaires were distributed by hand, (134) questionnaires were returned, and (7) questionnaires were ex-

cluded due to incomplete answers. Accordingly, the number of questionnaires approved for analysis reached (117) questionnaire, which represents (78%) of the questionnaires distributed.

2.8. Data Collection Methods

After referring to previous literature, the researchers designed a questionnaire to collect data, which was distributed and retrieved by hand to the study sample.

The parts of the questionnaire and the questions that measure the variables are as shown in the following table (Table 1):

The second part was formulated in a way that was easy to measure using a five-degrees Likert scale (very much agree, much agree, average agree, little agree, very little agree) and were given grades (5, 4, 3, 2, 1) respectively.

To test the reliability of the questionnaire it presented to a group of universities professors in the accounting and management quality in Jordanian universities. In addition to the use of credibility analysis (reliability) Reliability analysis to calculate Alpha Cronbach Coefficient and the value was equivalent to 83.6% almost, and where it is more than acceptable ratio (70%) (Sekaran and Bougie) [27].

Table 1. Parts of the Questionnaire and the questions that measure the variables.

Partsof Questionnaire	Variable	Questions that measure the variable
Part (I)	Gender	1
	Academic Qualification	2
	Scientific Specialization	3
	Job Title	4
	Years of Experience in Audit	5
	Professional Certifications	6
Part (II)	Section (1): Impact of COVID-19 pandemic on audit fees	7 – 11
	Section (2): Impact of COVID-19 pandemic on the assessment of going concern	12 - 16
	Section (3): Impact of COVID-19 pandemic on audit procedures and processes	17 – 21
	Section (4): Impact of COVID-19 pandemic on auditors' experience	22 – 26
	Section (5): Impact of COVID-19 pandemic on audit tenure	27 – 31
	Section (6): Impact of COVID-19 pandemic on audit firm size	32 - 36
	Impact of COVID-19 pandemic on the quality of audit	7 - 36

3. Descriptive Statistics and Hypotheses Testing

This part of research presents the results of descriptive statistics and data analysis and the result of one sample t-test that used to test the research hypotheses.

3.1. Descriptive Statistics and the Test of the First Sub-hypothesis

H01-1: There is no significant impact of the COVID-19 pandemic on audit fees.

Table 2 presents the descriptive statistics (mean, standard deviation, rank, and the level of importance) for the paragraphs used to measure the impact of COVID-19 pandemic on audit fees, which are as follows:

Table 2. Descriptive statistics for each paragraph used to measure audit fees.

No.	Paragraphs	Mean	SD	Rank	Level ^(*)
7	COVID-19 pandemic has impacted companies' liquidity, resulting in a decrease in audit fees compared to pre-pandemic levels.	4.21	0.89	1	High
8	The absence of enforcement of regulatory laws and standards for audit fees during COVID-19 pandemic contributed to a direct relationship between auditors and the companies under audit, resulting in greater negotiability and a decrease in audit fees during the pandemic period.	4.01	0.88	2	High
9	COVID-19 pandemic has impacted companies' purchasing power, leading to a decrease in audit fees during the pandemic period.	3.99	0.74	3	High
11	Some audit firms were compelled to reduce their audit fees during COVID-19 pandemic to attract a greater number of clients.	3.79	0.93	4	High
10	The reduction in the number of auditors by some audit firms during COVID-19 pandemic has led to a decrease in audit fees during the pandemic period.	3.67	1.08	5	High
Total		3.93	0.74	---	High

(*): The level of importance determined as follows:

$$\text{Interval} = \frac{\text{maximumdegree} - \text{minumdegree}}{\text{numberofdegrees}} = \frac{5-1}{3} = 1.33, \text{ then:}$$

The Low level is 2.33 and less

The Median level is from 2.34 to 3.66

The High level is 3.67 and above.

Table 2 shows that the range of mean for the paragraphs measured the impact of COVID-19 pandemic on audit fees is between (3.67– 4.21). The highest mean was observed for the paragraph "COVID-19 pandemic has impacted companies' liquidity, resulting in a decrease in audit fees compared to pre-pandemic levels", while the lowest mean was observed for the paragraph "The reduction in the number of auditors by some audit firms during COVID-19 pandemic has led to a decrease in audit fees during the pandemic period".

In general, the mean of all paragraphs which measure the impact of COVID-19 pandemic on audit fees from the point of

view of Jordanian Certified Public Accountants has reached (3.93), indicating a high degree of importance.

To test this hypothesis, one sample t-test used with reference value represents the average score of Likert scale which is (3). The results presented in Table 3.

Based on the results of table 4, the tabulated T value is less than the calculated T value (13.66), and significance level (α) less than (0.05), which means rejecting the null hypothesis and acceptance of alternative hypothesis that there is significant impact of COVID-19 pandemic on audit fees.

Table 3. The result of test the first sub-hypothesis using one sample t-test.

The Factor	Mean	SD	T calculated	Ttabulated	Degree of freedom	Levelof significance	The resultof testingthehypothesis
Impact of COVID-19 pandemic on audit fees	3.93	0.74	13.66	1.98	116	0.000	Reject

3.2. Descriptive Statistics and the Test of the Second Sub-hypothesis

H01-2: There is no significant impact of the COVID-19 pandemic on the assessment of going concern.

Table 5 presents the descriptive statistics (mean, standard deviation, rank, and the level of importance) for the paragraphs used to measure the impact of COVID-19 pandemic on the assessment of going concern, which are as follows:

Table 4. Descriptive statistics for each paragraph used to measure the assessment of going concern.

No.	Paragraphs	Mean	SD	Rank	Level
12	COVID-19 pandemic has affected the auditor's ability to judge the continuity of the audit company due to the absence of general indicators about the future of companies in general.	3.98	0.88	1	High
13	The lack of sufficient information about the future status of the client due to the exceptional circumstances imposed by COVID-19 pandemic has made it extremely difficult for the auditor to assess the client's (the audited company's) continuity.	3.85	0.91	2	High
14	The financial and economic pressures imposed by COVID-19 pandemic have led some companies to take measures that have made it difficult for the auditor to assess the continuity of the audited company.	3.81	0.88	3	High
16	The necessary assessments to judge the continuity of the audited company have become more challenging for the auditor during COVID-19 pandemic.	3.79	0.91	4	High
15	It is no longer possible for the auditor to compare the historical information of the audited company with its future plans in the context of COVID-19 pandemic, which has led to difficulties for the auditor in assessing the continuity of the audited company.	3.77	0.97	5	High
Total		3.84	0.82	---	High

Table 4 shows that the range of mean for the paragraphs measured the impact of COVID-19 pandemic on the assessment of going concern is between (3.81– 3.98). The highest mean was observed for the paragraph "COVID-19 pandemic has affected the auditor's ability to judge the continuity of the audit company due to the absence of general indicators about the future of companies in general", while the lowest mean was observed for the paragraph "It is no longer possible for the auditor to compare the historical information of the audited company with its future plans in the context of COVID-19 pandemic, which has led to difficulties for the auditor in assessing the continuity of the audited company".

In general, the mean of all paragraphs which measure the

impact of COVID-19 pandemic on the assessment of going concern from the point of view of Jordanian Certified Public Accountants has reached (3.84), indicating a high degree of importance.

To test this hypothesis, one sample t-test used. The results presented in Table 5.

Based on the results of table 5, the tabulated T value is less than the calculated T value (11.18), and significance level (α) less than (0.05), which means rejecting the null hypothesis and acceptance of alternative hypothesis that there is significant impact of COVID-19 pandemic on the assessment of going concern.

Table 5. The result of test the second sub-hypothesis using one sample t-test.

The Factor	Mean	SD	T calculated	T tabulated	Degree of freedom	Level of significance	The result of testing the hypothesis
Impact of COVID-19 pandemic on the assessment of going concern	3.84	0.82	11.18	1.98	116	0.001	Reject

3.3. Descriptive Statistics and the Test of the Third Sub-hypothesis

H01-3: There is no significant impact of the COVID-19 pandemic on audit procedures and processes.

Table 6 presents the descriptive statistics (mean, standard

deviation, rank, and the level of importance) for the paragraphs used to measure the impact of COVID-19 pandemic on audit procedures and processes, which are as follows:

Table 6. Descriptive statistics for each paragraph used to measure audit procedures and processes.

No.	Paragraphs	Mean	SD	Rank	Level
20	COVID-19 pandemic affected the inability of the auditor to access the required data, which affected the planned methodology of his work and imposed on him the need to review the methodology and nature of audit procedures under what corresponds to the circumstances of COVID-19 pandemic.	4.07	0.774	1	High
19	COVID-19 pandemic has affected the implementation of audit procedures and their adequacy negatively through the delay of the departments of companies to respond to the inquiries of the auditor and the limited access of the auditor to the employees of the companies subject to audit.	3.96	0.865	2	High
21	The circumstances of COVID-19 pandemic of banning, distancing, and reliance on social media have affected the auditor's confidence in the data obtained and its adoption in the audit procedures.	3.8	0.985	3	High
18	The exceptional circumstances of COVID-19 pandemic and the distancing and prohibition imposed by it have negatively affected the adequacy of the collection and verification of audit evidence.	3.76	1.014	4	High
17	The impact of the imposition of social distancing and a comprehensive ban on audit procedures and their adequacy negatively during the period of COVID-19 pandemic	3.68	1.128	5	High
Total		3.85	0.81	---	High

Table 6 shows that the range of mean for the paragraphs measured the impact of COVID-19 pandemic on audit procedures and processes is between (3.68– 4.07). The highest mean was observed for the paragraph "COVID-19 pandemic affected the inability of the auditor to access the required data, which affected the planned methodology of his work and imposed on him the need to review the methodology and nature of audit procedures under what corresponds to the circumstances of COVID-19 pandemic", while the lowest mean was observed for the paragraph "The impact of the imposition of social distancing and a comprehensive ban on audit procedures and their adequacy negatively during the period of COVID-19 pandemic".

In general, the mean of all paragraphs which measure the impact of COVID-19 pandemic on audit procedures and processes from the point of view of Jordanian Certified Public Accountants has reached (3.85), indicating a high degree of importance.

To test this hypothesis, one sample t-test used. The results presented in Table 7.

Based on the results of table 7 the tabulated T value is less than the calculated T value (11.22), and significance level (α) less than (0.05), which means rejecting the null hypothesis and acceptance of alternative hypothesis that there is significant impact of COVID-19 pandemic on audit procedures and processes.

Table 7. The result of test the third sub-hypothesis using one sample t-test.

The Factor	Mean	SD	T calculated	T tabulated	Degree of freedom	Level of significance	The result of testing the hypothesis
Impact of COVID-19 pandemic on audit procedures and processes	3.85	0.81	11.22	1.98	116	0.003	Reject

3.4. Descriptive Statistics and the Test of the Fourth Sub-hypothesis

H01-4: There is no significant impact of the COVID-19 pandemic on audit experience.

Table 8 presents the descriptive statistics (mean, standard deviation, rank, and the level of importance) for the paragraphs used to measure the impact of COVID-19 pandemic on audit experience, which are as follows:

Table 8. Descriptive statistics for each paragraph used to measure audit experience.

No.	Paragraphs	Mean	SD	Rank	Level
23	The infection of some employees in auditing firms with COVID-19 and their subsequent need to undergo quarantine has made it difficult to regularly rotate team members, resulting in a shortage of auditors and a decrease in efficiency.	4.06	0.745	1	High
24	COVID-19 pandemic has had an impact on the ability of newly qualified accountants to practice their profession, as well as their personal ability to learn and gain experience during this period.	3.86	0.88	2	High
22	The social distancing and lockdown measures imposed during COVID-19 pandemic led to auditing firms cancelling their in-house training programs for employees, which had a negative impact on the experience of some auditors.	3.79	0.97	3	High
25	The circumstances of COVID-19 pandemic have made it difficult for auditing firms to participate in the quality control programs organized by professional bodies, which has had a negative impact on the experience of auditors and the quality of auditing.	3.77	0.96	4	High
26	The circumstances of COVID-19 pandemic, such as lockdowns, social distancing measures, and a reliance on virtual communication, have made direct communication between members of the audit team difficult. This has had a negative impact on the exchange of experience and knowledge between audit team members.	3.64	0.99	5	Moderate
Total		3.82	0.76	---	High

Table 8 shows that the range of mean for the paragraphs measured the impact of COVID-19 pandemic on audit experience is between (3.64– 4.06). The highest mean was observed for the paragraph "The infection of some employees in auditing firms with COVID-19 and their subsequent need to undergo quarantine has made it difficult to regularly rotate team members, resulting in a shortage of auditors and a decrease in efficiency", while the lowest mean was observed for the paragraph "The circumstances of COVID-19 pandemic, such as lockdowns, social distancing measures, and a reliance on virtual communication, have made direct communication between members of the audit team difficult. This has had a negative impact on the exchange of experience and

knowledge between audit team members".

In general, the mean of all paragraphs which measure the impact of COVID-19 pandemic on audit experience from the point of view of Jordanian Certified Public Accountants has reached (3.82), indicating a high degree of importance.

To test this hypothesis, one sample t-test used. The results presented in Table 9.

Based on the results of table 9, the tabulated T value is less than the calculated T value (11.98), and significance level (α) less than (0.05), which means rejecting the null hypothesis and acceptance of alternative hypothesis that there is significant impact of COVID-19 pandemic on audit experience.

Table 9. The result of test the fourth sub-hypothesis using one sample t-test.

The Factor	Mean	SD	T calculated	T tabulated	Degree of freedom	Level of significance	The result of testing the hypothesis
Impact of COVID-19 pandemic on audit experience	3.82	0.76	11.98	1.98	116	0.000	Reject

3.5. Descriptive Statistics and the Test of the Fifth Sub-hypothesis

H01-5: There is no significant impact of the COVID-19 pandemic on audit tenure.

Table 10 presents the descriptive statistics (mean, standard deviation, rank, and the level of importance) for the paragraphs used to measure the impact of COVID-19 pandemic on audit tenure, which are as follows:

Table 10. Descriptive statistics for each paragraph used to measure audit tenure.

No.	Paragraphs	Mean	SD	Rank	Level
30	The circumstances of COVID-19 pandemic have made it difficult to complete auditing tasks according to the pre-planned schedule set by the auditor. The auditor has been forced to make quick and unexpected changes to the work program, which has had a negative impact on the auditing tasks, procedures, and the quality of the audit.	3.81	0.96	1	High
31	The circumstances of COVID-19 pandemic, such as lockdowns, social distancing measures, and reliance on social media platforms, have made direct communication between audit team members difficult. This has had a negative impact on the duration of the audit tenure.	3.78	0.97	2	Moderate
29	Despite the long period of auditing during COVID-19 pandemic, the ramifications of the pandemic, such as social distancing and lockdown measures, have affected the efficiency and smoothness of the auditing process.	3.66	1.12	3	Moderate
27	The length of the auditing period poses a threat to the independence of the auditor, and the ramifications of COVID-19 have forced the auditor to take a longer period of time in the auditing process, which may negatively affect the independence of the auditor and the quality of the auditing.	3.59	1.09	4	Moderate
28	COVID-19 pandemic has affected the length of the auditing period, which has, in some cases, resulted in a kind of boredom and lack of attention to the auditing procedures as expected by the auditor.	3.48	1.19	5	Moderate
Total		3.68	0.91	---	High

Table 10 shows that the range of mean for the paragraphs measured the impact of COVID-19 pandemic on audit tenure is between (3.48– 3.81). The highest mean was observed for the paragraph "The circumstances of COVID-19 pandemic have made it difficult to complete auditing tasks according to the pre-planned schedule set by the auditor. The auditor has been forced to make quick and unexpected changes to the work program, which has had a negative impact on the auditing tasks, procedures, and the quality of the audit", while the lowest mean was observed for the paragraph " COVID-19 pandemic has affected the length of the auditing period, which has, in some cases, resulted in a kind of boredom and lack of attention to the

auditing procedures as expected by the auditor ".

In general, the mean of all paragraphs which measure the impact of COVID-19 pandemic on audit tenure from the point of view of Jordanian Certified Public Accountants has reached (3.68), indicating a high degree of importance.

To test this hypothesis, one sample t-test used. The results presented in Table 11.

Based on the results of table 11, the tabulated T value is less than the calculated T value (7.86), and significance level (α) less than (0.05), which means rejecting the null hypothesis and acceptance of alternative hypothesis that there is significant impact of COVID-19 pandemic on audit tenure.

Table 11. The result of test the fifth sub-hypothesis using one sample t-test.

The Factor	Mean	SD	T calculated	T tabulated	Degree of freedom	Level of significance	The result of testing the hypothesis
Impact of COVID-19 pandemic on audit tenure	3.68	0.91	7.86	1.98	116	0.012	Reject

3.6. Descriptive Statistics and the Test of the Sixth Sub-hypothesis

H01-6: There is no significant impact of the COVID-19 pandemic on audit firm size.

Table 12 presents the descriptive statistics (mean, standard deviation, rank, and the level of importance) for the paragraphs used to measure the impact of COVID-19 pandemic on audit firm size, which are as follows:

Table 12. Descriptive statistics for each paragraph used to measure audit firm size.

No.	Paragraphs	Mean	SD	Rank	Level
34	COVID-19 pandemic has affected some auditing firms' ability to hire new auditors and increase their activity and size proportionate to the number of auditors in the office.	3.9	0.78	1	High
35	The impact of COVID-19 pandemic was more evident on small auditing firms than on large ones due to a decrease in their client base during the pandemic.	3.79	0.92	2	High
36	COVID-19 pandemic has led to an increase in risks faced by small auditing firms compared to large ones, particularly in terms of higher probability of failure in certain aspects of the auditing process such as evidence collection, verification, and attestation. This has negatively affected the quality of auditing during the pandemic.	3.78	0.96	3	High
32	During COVID-19 pandemic, the social distancing measures and lockdowns have affected some small auditing firms' ability to conduct comprehensive testing and verifications.	3.62	0.85	4	Moderate
33	The outbreak of COVID-19 among employees in auditing firms and subsequent quarantine measures has resulted in a shortage of auditors and the emergence of smaller-sized firms compared to their usual size. This has adversely affected the quality of auditing services due to increased workload on the remaining auditors.	3.56	0.98	5	Moderate
Total		3.73	0.78	---	High

Table 12 shows that the range of mean for the paragraphs measured the impact of COVID-19 pandemic on audit firm size is between (3.56– 3.90). The highest mean was observed for the paragraph "COVID-19 pandemic has affected some auditing firms' ability to hire new auditors and increase their activity and size proportionate to the number of auditors in the office", while the lowest mean was observed for the paragraph "The outbreak of COVID-19 among employees in auditing firms and subsequent quarantine measures has resulted in a shortage of auditors and the emergence of smaller-sized firms compared to their usual size. This has adversely affected the quality of auditing services due to increased workload on the

remaining auditors".

In general, the mean of all paragraphs which measure the impact of COVID-19 pandemic on audit firm size from the point of view of Jordanian Certified Public Accountants has reached (3.73), indicating a high degree of importance.

To test this hypothesis, one sample t-test used. The results presented in Table 13.

Based on the results of table 13, the tabulated T value is less than the calculated T value (10.75), and significance level (α) less than (0.05), which means rejecting the null hypothesis and acceptance of alternative hypothesis that there is significant impact of COVID-19 pandemic on audit firm size.

Table 13. The result of test the sixth sub-hypothesis using one sample t-test.

The Factor	Mean	SD	T calculated	T tabulated	Degree of freedom	Level of significance	The result of testing the hypothesis
Impact of COVID-19 pandemic on audit firm size	3.73	0.78	10.75	1.98	116	0.008	Reject

3.7. Descriptive Statistics and the Test of the First Main Hypothesis

H01: There is no significant impact of COVID-19 pandemic on audit quality from the perspective of Jordanian

Certified Public Accountants.

Table 14 presents the descriptive statistics (mean, standard deviation, rank, and the level of importance) for the factors used to measure the impact of COVID-19 pandemic on audit quality, which are as follows:

Table 14. Descriptive statistics for each factor used to measure audit quality.

No.	Factors	Mean	SD	Rank	Level
1	Audit Fees	3.93	0.74	1	High
2	The Assessment of Going Concern	3.84	0.82	3	High
3	Audit Procedures and Processes	3.85	0.81	2	High
4	Audit Experience	3.82	0.76	4	High
5	Audit Tenure	3.68	0.91	6	High
6	Audit Firm Size	3.73	0.78	5	High
Total		3.81	0.79	---	High

Table 14 shows that the range of mean for the factors measured the impact of COVID-19 pandemic on audit quality is between (3.56– 3.90). The highest factor was "Audit Fees", while the lowest mean was observed for the factor "Audit Tenure".

In general, the mean of all paragraphs which measure the impact of COVID-19 pandemic on audit quality from the point of view of Jordanian Certified Public Accountants has

reached (3.81), indicating a high degree of importance.

To test this hypothesis, one sample t-test used. The results presented in Table 15.

Based on the results of table 15, the tabulated T value is less than the calculated T value (17.23), and significance level (α) less than (0.05), which means rejecting the null hypothesis and acceptance of alternative hypothesis that there is significant impact of COVID-19 pandemic on audit quality.

Table 15. The result of test the first main hypothesis using one sample t-test.

The Factors	Mean	SD	T calculated	T tabulated	Degree of freedom	Level of significance	The result of testing the hypothesis
Impact of COVID-19 pandemic on audit quality	3.81	0.79	17.23	1.98	116	0.000	Reject

3.8. Descriptive Statistics and the Test of the Six Sub-hypotheses Derived from the Second Main Hypothesis

Table 16 presents the descriptive statistics (mean, standard deviation) for the personal factors of Jordanian Certified

Public Accountants (gender, academic qualification, scientific specialization, job title, years of experience in audit, and professional certifications). The researchers used independent sample t-test and one-way ANOVA to test if their differences, the results are as follows:

Table 16. The descriptive statistics for the personal factors of Jordanian Certified Public Accountant.

Variable	Classification	N	Mean	SD	T. value	P. value
Gender	Male	84	3.79	0.63	-0.59	0.56
	Female	33	3.87	0.74		
Academic Qualification	Bachelor's degree	56	3.87	0.64	3.87	0.02
	Master's degree	49	3.86	0.61		
	PhD	12	3.32	0.66		
Scientific Specialization	Accounting	99	3.78	0.65	0.79	0.46
	Business Management	6	3.96	0.82		
	Finance & Banking	12	4.00	0.66		
	Director Audit Office	44	3.73	0.72		
Job Title	Principal Auditor	51	3.67	0.61	3.09	0.03
	Assistant Auditor	24	4.16	0.46		
Years of Experience in Audit	Less than 5 years	25	4.20	0.52	4.87	0.01
	From 5 years to less than 10 years	23	3.86	0.58		
	From 10 years to less than 15 years	43	3.64	0.64		
	15 years and over	26	3.65	0.73		
Professional Certifications	JCPA	81	3.69	0.64	1.84	0.14
	CPA	23	4.02	0.62		
	CIA	13	3.87	1.07		

Table 16 presents the results of t-test and one-way ANOVA which used to test the differences among Jordanian Certified Public Accountants about the impact of COVID-19 pandemic on the quality of auditing, according to the personal factors such as gender, academic qualification, scientific specialization, job title, years of experience in audit, and professional certifications. The findings indicate that:

1. There is no statistically significant differences in the impact of COVID-19 pandemic on the quality of auditing according to gender. The findings showed that T-value was -.59, which is not statistically significant at level ($P > 0.05$). Thus, the researchers accepted the first sub-hypothesis, which means that there is no significant differences in the impact of COVID-19 pandemic on the quality of auditing according to gender.
2. There is no statistically significant differences in the impact of COVID-19 pandemic on the quality of auditing according to Scientific Specialization. The findings showed that F-value = 0.791 and ($P > 0.05$). Thus, the researchers accepted the third sub-hypothesis, which means that there is no significant differences in the impact of COVID-19 pandemic on the quality of auditing according to Scientific Specialization.
3. There is no statistically significant differences in the

impact of COVID-19 pandemic on the quality of auditing according to professional certifications. The findings showed that F-value = 1.84 and ($P > 0.05$). Thus, the researchers accepted the sixth sub-hypothesis, which means that there is no significant differences in the impact of COVID-19 pandemic on the quality of auditing according to professional certifications.

4. There is a statistically significant difference in the impact of COVID-19 pandemic on the quality of auditing according to academic qualification. The findings showed that F-value = 3.87 and ($P < 0.05$). Thus, the researchers rejected the null second sub-hypothesis and accepted the alternate sub-hypothesis, which means that there is significant differences in the impact of COVID-19 pandemic on the quality of auditing according to academic qualification. To explore the places of significant differences in the impact of COVID-19 pandemic on the quality of auditing according to academic qualification, a Post Hoc test (Scheffe) was applied. The results of table 17 indicates that there is a statistically significant difference between (Bachelor's degree) and (PhD. degree) in favor of (Bachelor's degree), and between (Master's degree) and (PhD. degree) in favor of (Master's degree).

5. There is a statistically significant difference in the impact of COVID-19 pandemic on the quality of auditing according to job title. The findings showed that F-value = 3.09 and (P. < 0.05). Thus, the researchers rejected the null fourth sub-hypothesis and accepted the alternate sub-hypothesis, which means that there is significant differences in the impact of COVID-19 pandemic on the quality of auditing according to job title. To explore the places of significant differences in the impact of COVID-19 pandemic on the quality of auditing according to Job Title, a Post Hoc test (Scheffe) was applied. The results of [table 18](#) indicates that there is a statistically significant difference between (Director Audit Office) and (Assistant Auditor) in favor of (Assistant Auditor), and between (Principal Auditor) and (Assistant Auditor) in favor of (Assistant Auditor).
6. There is a statistically significant difference in the im-

act of COVID-19 pandemic on the quality of auditing according to years of experience in audit. The findings showed that F-value = 4.87 and (P. < 0.05). Thus, the researchers rejected the null fifth sub-hypothesis and accepted the alternate sub-hypothesis, which means that there is significant differences in the impact of COVID-19 pandemic on the quality of auditing according to years of experience in audit. To explore the places of significant differences in the impact of COVID-19 pandemic on the quality of auditing according to years experience in audit, a Post Hoc test (Scheffe) was applied. The results of [table 19](#) indicates that there is a statistically significant difference between (less than 5 years) and (from 10 years to less than 15 years) in favor of (less than 5 years), and between (less than 5 years) and (15 years and over) in favor of (less than 5 years).

Table 17. The Results of (Scheffe) test according to academic qualification.

Academic Level	Mean	Bachelor's degree	Master's degree	PhD
Bachelor's degree	3.87	---		
Master's degree	3.86	.01505	---	
PhD	3.32	.55139*	.53634*	---

* Differences are statistically significant at the level of significance ($\alpha \leq 0.05$)

Table 18. The Results of (Scheffe) test according to job title.

Job Title	Mean	Director Audit Office	Principal Auditor	Assistant Auditor
Director Audit Office	3.73	---		
Principal Auditor	3.67	.05816	---	
Assistant Auditor	4.16	.42695*	.48511*	---

* Differences are statistically significant at the level of significance ($\alpha \leq 0.05$)

Table 19. The Results of (Scheffe) test according to years of experience in audit.

Number of years' audit experience	Mean	Less than 5 years	From 5 years to less than 10 years	From 10 years to less than 15 years	15 years and over
Less than 5 years	4.20	---			
From 5 years to less than 10 years	3.86	.34035	---		
From 10 years to less than 15 years	3.64	.55926*	.21891	---	
15 years and over	3.65	.55010*	.20975	.00915	---

* Differences are statistically significant at the level of significance ($\alpha \leq 0.05$)

3.9. Descriptive Statistics and the Test of the Second Main Hypothesis

H02: There are no statistically significant differences in the impact of COVID-19 pandemic on audit quality according to the personal factors of Jordanian Certified Public Accountants (gender, academic qualification, scientific specialization, job title, years of experience in audit, and professional certifications).

Table 20. Results of the sixth sub-hypotheses derived from the second main hypothesis.

No.	Factors	Result of Testing
1	Gender	Accepted
2	Academic Qualification	Rejected
3	Scientific Specialization	Accepted
4	Job Title	Rejected
5	Years of Experience in Audit	Rejected
6	Professional Certifications	Accepted

Table 20 shows that there are no statistically significant differences in the impact of COVID-19 pandemic on audit quality according to (gender, scientific specialization, and professional certifications). And there are statistically significant differences in the impact of COVID-19 pandemic on audit quality according to (academic qualification, job title, and years of experience in audit).

4. Results of Study

Based on data analysis and hypothesis testing, the researchers can present the results as follows:

1. There is a significant impact of COVID-19 pandemic on audit quality from the perspective of Jordanian Certified Public Accountants.
2. There is a significant impact of COVID-19 pandemic on (audit fees, the assessment of going concern, audit procedures and processes, auditors' experience, tenure, and audit firm size) as a measures of audit quality from the perspective of Jordanian Certified Public Accountants.
3. There are no statistically significant differences in the impact of COVID-19 pandemic on audit quality according to (gender, scientific specialization, and professional certifications) from the perspective of Jordanian Certified Public Accountants.
4. There are statistically significant differences in the impact of COVID-19 pandemic on audit quality according to (academic qualification, job title, and years of experience in audit) from the perspective of Jordanian Certified Public Accountants.

Table 20 presents the results of rejected or accepted the sixth sub-hypotheses derived from the second hypothesis which measured if there are statistically significant differences in the impact of COVID-19 pandemic on audit quality according to the personal factors of Jordanian Certified Public Accountants (gender, academic qualification, scientific specialization, job title, years of experience in audit, and professional certifications). which are as follows:

rience in audit) from the perspective of Jordanian Certified Public Accountants.

5. Recommendations and Suggested Future Researches

In light of the results of the study, the researchers can recommend the following:

1. Audit firms must review and revise their audit processes and procedures to adapt to the new business environment created by the pandemic. This includes updating their audit methodologies and procedures to effectively address the unique challenges posed by COVID-19, such as incorporating remote auditing techniques.
2. Professional Accounting and Auditing bodies and regulatory authorities provide guidance to auditors on how to respond to the challenges presented by the pandemic, such as issuing best practice recommendations, developing training programs, and establishing oversight mechanisms to ensure compliance with auditing standards.
3. Audit firms prioritize the development of their staff's skills and experience through alternative training programs and remote working arrangements.

In light of the challenges posed by the pandemic, future research could explore the potential use of emerging technologies, such as block chain or artificial intelligence, to enhance the quality and effectiveness of the audit process. Given the exceptional circumstances of COVID-19 pandemic,

future research could examine whether there is a need to issue new professional standards to regulate the auditing process in such circumstances. Future studies should investigate the effects of the pandemic on the various phases and procedures of the audit process, including both traditional and electronic types.

Abbreviations

ACCA: Association of Chartered Certified Accountants.

FRS: Financial Reporting Council.

JACPA: Jordanian Association of Certified Public Accountants.

OECD: The Organization for Economic CO-operation and Development.

SD: Standard Deviation.

WHO: World Health Organization.

Conflicts of Interest

The authors declare no conflicts of interest.

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