

ORIGINAL ARTICLE

# A comparative analysis of the impact of ISIS and COVID-19 on fraudulent reporting motives and audit quality in Iraq

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## ABSTRACT

The Corona epidemic, as a global crisis, and the Islamic State of Iraq and Syria (ISIS) war, as a regional crisis in Iraq, have significantly impacted the atmosphere of companies and the continuation of their activities. The present study examines the role of these crises in creating incentives for fraudulent reporting and reducing or improving audit quality. It also compares the results of these two relationships with each other. In other words, the current paper sought to answer these issues: What effect did the ISIS war and the COVID-19 pandemic have on the fraudulent reporting motives of companies, and how did it affect the quality of their audits? In the end, the answer to this question was addressed: What are the differences and similarities between the study results of the impact of COVID-19 and ISIS on fraudulent financial reporting and audit quality? For this purpose, the data of 33 companies from 2008 to 2021 (462 observations) were collected to examine six formulated hypotheses, and the hypotheses were tested using the method of structural equations and analysis of variance. Interviews with experts were also used to determine quality indicators of auditing and fraudulent financial reporting so that indigenous indicators were selected and finalized. The results showed no significant relationship between the epidemic of the COVID-19 crisis and the motives of fraudulent reporting and audit quality and between the crisis of the ISIS war and the motives of fraudulent reporting. However, the ISIS war crisis has negatively and significantly impacted audit quality. Finally, the results indicated no significant difference between the impact of the epidemic crisis of COVID-19 and ISIS on the motives of fraudulent reporting. Still, there is a significant difference in the impact of the epidemic crisis of COVID-19 and ISIS on the audit quality. The knowledge enhancement of the present study is the development of literature on the impact of the Corona and ISIS crises on corporate financial reporting and auditing. The current paper, by studying the consequences of COVID-19 and ISIS, showed that further investigations in this field, especially regarding the capital market environment and A company, can obtain essential results

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based on which practical suggestions can be made for possible future crises.

## **KEYWORDS**

*citizen participation; technology infrastructure; Smart Tehran Program; housing policy; urban planning*

## **1. Introduction**

Companies need timely and effective management decisions in uncertain and risky situations in contemporary economic environments. In other words, the activity of company managers and employees is a vital factor that leads to the survival and development of companies (Beyer et al., 2010). However, suppose the company manager performs risky behaviors such as providing fraudulent reports to the market. In that case, it will cause significant losses for the organization because this reporting falsely shows the company's financial situation better than reality. It also tarnishes the credibility of the accounting profession and affects public trust in financial statements (Block et al., 2018). Fraudulent financial reporting is the deliberate distortion or omission of amounts or disclosures from financial statements to deceive users of financial statements (Zhang et al., 2022). Since this action is risky and dangerous, only managers with high risk tolerance will do it, while most managers are rational and risk-averse people (Ryan, 2012). Providing fraudulent financial reports to deceive investors to disclose an improved company's financial status in the short term is also unethical and criminal (Fung, 2015).

Fraudulent reporting and its occurrence in financial statements, due to the nature of future financial information, has attracted investors and creditors, and it is considered one of the sensitive and tense points of companies. Therefore, it should be given particular importance. On the other hand, one of the riskiest points of fraudulent financial reporting is the report on financial information, which, if not adequately prepared based on subjective assumptions and available estimates, indicates that fraud will occur. This fraud can significantly impact the business unit's market value, credibility, and ability to achieve its strategic goals (Sun et al., 2019). As previously stated, the financial effects of fraudulent reporting result in unreasonable stock price increases, fraud, and misuse of retail investors' funds. Fraudulent financial reporting by high-ranking people (board of directors) is an example of white-collar crime (Martins and Ventura Júnior, 2020). Therefore, auditing standards have mandated duties to cover the auditor's risk, which the auditor must perform in the performance of the investigation. Thus, one of the most significant achievements of quality auditing can be called the creation of added value (Sabrina et al., 2020). By reducing the information asymmetry and agency conflict between users and providers of financial statements, a high-quality audit can eliminate the negative effects of the separation of ownership from management. On the other hand, shareholders and financiers can be more confident regarding the sustainability of the value created in the business entity. They can make judgments for buying and selling stocks, investing, and evaluating the manager's performance (Sari et al., 2020).

This literature partially expresses the importance of research in fraudulent accounting and audit quality. Also, due to the importance of the issue, many studies have been conducted on the role of factors affecting the motivations for fraudulent reporting, the quality of reports, and the

audit process. Studies have identified the factors influencing fraudulent reporting incentives as management structure and organizational culture (Badawi, 2008), analyzed the relationship between earnings management incentives and weak corporate governance (Hasnan et al., 2013), the failure of analysts' forecasts in Iraq's economic environment, taking revenge in Iran's economic environment (Sallal et al., 2021), and reward and tax avoidance (Widuri et al., 2019). Also, some other studies have been conducted that focus on the factors affecting audit quality. For example, recent studies on multiple management and auditor rotation (Adeyemi et al., 2012), auditor independence and expertise (Suyono, 2012), auditor size and audit fees (Al-Khaddash et al., 2013), the organizational culture of the audit institute, management structure of the audit firm and the auditee's earnings management (Sulanjaku and Shingjergji, 2015), internal audit (Guliyev et al., 2019), firm performance (Chouhan et al., 2021), auditor's effort and opinion (Xiao et al., 2020) and others have been mentioned.

Nevertheless, these studies have yet to mention the impact of the recent crises that have greatly impacted the environment of the Middle East and especially Iraq. The crises discussed in this paper are the ISIS war and the coronavirus epidemic. Each of these phenomena, as a crisis, has significantly impacted the atmosphere of companies and the continuity of their activities. Nevertheless, it is possible to find studies that have addressed the role of COVID-19 on financial reporting and audit quality in other economic environments.

In this regard, we can refer to Levy (2020), who showed the negative consequences of COVID-19 on the quality of financial reporting and auditing. Also, Šušak (2020) states that COVID-19 has increased earnings management and reduced the timeliness of financial reporting. Furthermore, Sultana et al. (2021) argued that COVID-19 has reduced the transparency of corporate financial reporting. Gong et al. (2022) have mentioned the role of COVID-19 in reducing audit quality. Also, Hazaea et al. (2022) have also mentioned the impact of COVID-19 on reducing audit quality.

However, studies on the impact of the ISIS war and crisis on the financial reporting and auditing environment are more scarce. Perhaps the study of Salehi et al. (2021), which pointed to the role of ISIS in reducing the quality of financial reporting, and the study of Bazrafshan et al. (2021), which pointed out the role of the ISIS crisis in reducing the quality of earnings and management ability in Iraq, are among the few studies that examine the role of this vital crisis on reporting. However, the purpose of the current study, in addition to examining the impact of these two crises separately on fraudulent financial reporting and its motives, as well as audit quality, is to compare the effects and consequences of these two crises, which have not been mentioned so far, and therefore, has not been investigated experimentally. Therefore, the current study intends to fill this critical research gap and respond to the challenges scientifically created in this field, and in this sense, it has innovation. In addition, one of the other innovations of the current study is the development of literature on factors influencing corporate financial reporting and auditing. Hence, the importance of the current study must be addressed. By studying the consequences of COVID-19 and seeing the consequences of ISIS, further investigations in this field, especially regarding the capital and corporate market environment, can show essential results based on which practical suggestions can be made for possible future crises. In general, it can be said that the two factors of the presence of ISIS militants in Iraq and the spread of COVID-19 may have different effects on the financial reporting environment, the auditing body of companies, and financial departments. However, since

the presence of ISIS has faded in recent years and the spread of Corona in these last three years, there is almost no definite time connection with each other, and each of these two phenomena can be considered a separate investigation.

The present study aims to: 1) examine the impact of the ISIS war on fraudulent reporting and audit quality. 2) The current study examines the impact of the COVID-19 epidemic on fraudulent financial reporting and audit quality. 3) In addition, this research takes into account that the period of the ISIS war and the epidemic of COVID-19 did not coincide and there are many differences, including the geography that affected them, as well as similarities such as the fact that both factors can be the cause of the same crisis compares their effects. Therefore, the results of this research can show the impact of these two major crises in Iraq well, and their consequences for international environments and economies can also be considered a good experience. Examining these goals and the innovations mentioned above highlights the importance of conducting this study.

Now, the issue of this paper is the role of the coronavirus epidemic as a global crisis and the ISIS war as a regional crisis in creating incentives for fraudulent reporting and audit quality, and the results of these two challenges are experimentally compared with each other. In general, the current research seeks to answer these issues: Firstly, what effect did the epidemic of COVID-19 have on the fraudulent reporting motives of companies in the Iraqi economic environment, and how did it affect the quality of their audits? In addition, the current research seeks to answer another question: How did the ISIS war, as a regional crisis and especially in Iraq, affect the fraudulent reporting motives of companies, and how did it affect the quality of their audits? In the end, the answer to this question is addressed: What are the differences and similarities between the study results of the impact of COVID-19 and ISIS on fraudulent financial reporting and audit quality? Hence, the present study tries to develop the literature on corporate financial reporting, auditing, and the factors affecting them by logically answering these questions based on empirical studies.

## **2. Theoretical principles and hypothesis development**

### **2.1. The effect of COVID-19 on fraudulent reporting incentives and audit quality**

The global crisis of the coronavirus has caused hefty and unpredictable consequences for many institutions and business enterprises, so it has exposed them to all kinds of risks and dangers, such as risks caused by network and online activities, cyber security, and changes in relations with customers and suppliers, which has caused new pressures on the implementation of operations and the provision of services by companies. These special conditions have enabled the fraud triangle, i.e., “pressure, opportunity, and justification” (Folger et al., 2022). Unemployment has escalated, and its results, such as credit card debt, piles of unpaid medical bills, and other issues, are examples of these pressures. In addition, when the employees or the business parties of the companies find out, due to the problems caused by Corona and the inactivation of the control systems, the opportunity to engage in illegal acts or to present incorrect financial statements has also been provided. These opportunities arise because many organizations have been forced to change their previous work methods and protocols to do remote work in response to the current crisis. These changes reduce the scope of internal controls in remote operations and increase the risk of fraud (Kizil et al., 2021). In such a situation, the possibility of increasing the incentives to commit fraud in organizations and employees who are facing unprecedented economic challenges, including reduced working hours,

unemployment, and inability to pay debts, increases because it is in such situations that people under heavy pressure in work or personal life can behave certain things such as increased risk-taking and unethical behavior. They will try to justify it, or in other words, they will wash their conscience to make this act seem rational (Song et al., 2022).

In such circumstances, professional regulatory bodies expand and deepen their supervision in line with their legal responsibilities towards company managers who “have the ultimate responsibility for preventing and detecting fraud in that company” and auditors who “according to their professional duty to detect fraud.” Therefore, in the coming months, professional accountants, including financial staff, internal auditors, and external auditors, who will be more than ever at risk of fraud and manipulation of accounting and fraudulent reporting, should pay more attention to accounts and accounting operations. On the other hand, under normal conditions, the level of expectations of users from financial statements and audit reports, especially regarding the detection and disclosure of fraudulent reports, has a significant gap with the absolute responsibility of auditors in this field as defined and explained in the “ISA 240” standard. According to the provisions of this standard, “an auditor who performs his work according to auditing standards is responsible for obtaining reasonable assurance that the financial statements as a single set are free from material misstatement due to fraud or error.” Nevertheless, everyone knows that even if the audit is properly planned and executed according to the auditing standards, due to the inherent limitations of the audit, there is an inevitable risk that some critical distortions of the financial statements will not be discovered. Unfortunately, the public stakeholders have the impression that auditors are responsible for discovering any distortion, whether in the form of misuse of assets or fraud or mistake. They ignore the expression “important” and the standard statement that there is a risk of not discovering some distortions (Rashwan and Alhelou, 2020; Al-Masoodi et al., 2020).

The International Auditing and Assurance Standards Board (IAASB), following the outbreak of the coronavirus, has emphasized to its employees the need for auditors to pay more attention to better awareness of the possibility of fraud or error, with the importance of using and maintaining professional skepticism when conducting an audit. Professional accountants must be aware of the pressures that may be placed on them or others. The International Ethical Standards Board for Accountants (IESBA), including the International Standards of Independence, which set the standard code of conduct expected of a professional accountant, specifically addressed the pressures placed on accountants that may lead to violations of the five fundamental principles: honesty, impartiality, professional competence and due care, confidentiality and professional behavior. Also, the board above is publishing a publication to emphasize aspects of these principles that may be relevant to accountants in navigating the current crisis and identifying possible pressures related to the coronavirus (Al-Masoodi et al., 2020). Standardization authorities and regulatory bodies also remind auditors and company managers to exercise their professional judgment and pay serious attention to accounting standards, financial reporting, possible consequences of the coronavirus, and emerging risks. For example, the Securities and Exchange Commission and the Public Company Audit Board in the United States issued a statement indicating that established companies or companies with significant performance in emerging markets are exposed to risks and may be at greater risk of having their information compromised by incomplete disclosure or be misleading (Sangster et al., 2020).

This literature refers to the situation’s impact due to the Corona crisis. In such a situation, the

possibility of increasing the incentives to commit fraud in organizations and employees facing unprecedented economic challenges, including reduced working hours, unemployment, and inability to pay debts increases. Undoubtedly, these cases lead to increased incentives for fraudulent reporting and, as a result, decreased quality of auditors' work. Accordingly, it is expected that the COVID-19 crisis will lead to an increase in fraudulent reporting incentives and a decrease in audit quality. The findings of some studies support this argument. Albitar et al. (2020), although they believe that the COVID-19 pandemic is not a financial crisis, they think that the effects of the COVID-19 pandemic have been the most difficult challenge for the financial reporting environment, auditors, and their owners after the financial crisis of 2007–2008. They argued that the conditions created due to this crisis had removed the reporting environment and internal controls from the previous state of discipline and order, thus leading to a decrease in the quality of reporting.

On the other hand, social distancing can significantly affect audit costs, business continuity assessment, audit human capital, audit methods, audit personnel salaries, and audit effort, which can substantially impact audit quality. The findings of Kizil et al. (2021) state that COVID-19 leads to increased financial fraud in companies and increases the risk of fraud detection by auditors. Also, Levy (2020) stated that COVID-19 has many implications for reporting and auditing. As a result of the coronavirus, businesses have been disrupted, and space has been provided for the opportunism of influential people in the activities and reporting of companies. In this way, the motivation of these people, especially managers, to provide reports in line with their goals increases.

On the other hand, it reduces the quality of the audit process and report. Lassoued and Khanchel (2021) also concluded that COVID-19 increased earnings management and decreased the quality of financial reporting. In addition, Jabbar et al. (2020) concluded that the COVID-19 pandemic has increased uncertainty in the corporate environment, which harms the quality of financial reports. Hamawandy et al. (2021) also argued that the financial consequences of COVID-19 are very high, and its negative effects may remain in companies and business groups for years to come. One of these negative consequences is the negative impact on the financial reporting environment, which can increase the scope of fraud and opportunistic motivation. In the medium or long term, the effect of the resulting information in the current situation negatively impacts the company's value. However, the COVID-19 crisis may make the corporate reporting climate more conservative. In companies that have taken a traditional approach by creating a crisis atmosphere causing disruption and increasing the resulting uncertainty, more conservative procedures have increased, which can have positive and negative consequences on financial accountability. The covenant of conservatism is one of the crucial motivations in reporting that the crisis can intensify. In this regard, Kim and Schwan (2022) state that the existence of a problem in the economic environment increases companies' conservative approach due to the creation and increase of uncertainty in the advancement of goals and the economic situation. For example, probably because of the unemployment caused by the crisis, the managers behaved more carefully and conservatively in their position and position so as not to lose it. Also, Nure (2022) argued that the COVID-19 pandemic has negatively affected how financial statements and reports are prepared and reduced the quality of their information. El-charani et al. (2022) also stated that the COVID-19 pandemic disrupts the financial structure of companies, takes them out of the previous registration mode, and can increase the incentive to cheat.

The results of the research of Arifian and Januarti (2023) show that the COVID-19 pandemic

points to the increasing impact of this epidemic on fraud in financial reporting. In addition, the findings of Chang and Budiman (2023) also state that during the COVID-19 pandemic, companies have engaged in more fraudulent reporting. On the other hand, Abdelhak et al. (2023) stated that the conditions created in the Covid-19 pandemic have reduced the quality of audit reports. Also, the findings of Bajary et al. (2023) state that in addition to reducing the quality of internal audits, COVID-19 has led to a delay in the presentation of auditors' reports.

One factor that directly affects audit quality due to the spread of Corona is the audit fees. Because auditors need to be fully supported financially in terms of wages and benefits, the financial risk of the entire company will increase. During the outbreak of Corona, due to the decrease in profit and income of companies and, as a result, the lack of proper payment of fees to auditors, the possibility of a significant reduction in the quality of auditors' work is close to expected. As a result, the quality of audit reports will also be questioned, and the entire financial environment will experience the created challenge (Al-Qadasi et al., 2023). Also, another component that can be examined in this field is the auditor's opinion regarding continuing the company's activity. During the Corona pandemic, the most common reason for issuing uncertain audit reports is doubt about the company's ongoing concern. The lack of liquidity causes these uncertainties, the worsening of the economic development of the company's activities, and the economic crisis that most companies are currently facing due to Corona (Hay et al., 2021). All these conditions have caused many companies to have higher business risks. Therefore, due to the coronavirus epidemic, it is expected that it will be more difficult for audit institutions to assess the continuity of activity, which can challenge the audit quality (Albitar et al., 2020).

These studies, whose findings were mentioned above, show the impact of the COVID-19 crisis on the environment of companies, especially reporting and auditing. However, these studies were mainly conducted in developed countries. Nevertheless, in Iraq, a war-torn country, epidemic crises can aggravate its inflammatory atmosphere. The impact of the COVID-19 crisis on the reporting environment, especially the motivations of fraudulent reporting, has yet to be empirically investigated. Based on this, one of the main goals of the current research is to investigate the impact of the COVID-19 crisis on the motives of fraudulent reporting. Therefore, the first and second hypotheses are presented as follows.

H1: The COVID-19 pandemic significantly affects the motives of fraudulent reporting.

H2: The pandemic of the COVID-19 crisis has had a significant effect on audit quality.

## **2.2. The effect of ISIS on fraudulent reporting motives and audit quality**

ISIS, or the Islamic State of Iraq and the Levant, is a takfiri group that branched off from al-Qaeda, which announced its emergence in Iraq in 2013 and was able to capture parts of this country and Syria but lost all of them by the fall of 2017. The founder and first leader of this group was Abu Bakr Baghdadi. The leaders of Daesh have called the restoration of the caliphate their primary goal, and by excommunicating their opposing Muslims, they have carried out many deadly attacks against them. The general organization of ISIS consists of a leader and a military command council. Since the announcement of the failed rule of ISIS on the territory of Iraq, the political, environmental, and economic environment of Iraq has become more inflamed, uncertain, and insecure. In addition, the emergence of ISIS and the anti-human activities of this group has disrupted the

economic and commercial activities of countries and companies active in them. Because this anti-human phenomenon can be considered a crisis that can have a negative impact on the economic environment of any country. Based on the information obtained from the attacks of this group on the electricity transmission towers in Iraq, it shows that the economic attacks of this terrorist group are carried out by targeting the electricity transmission towers, markets, and convoys of tankers carrying oil and trucks containing food and supplies for the people. Accordingly, it is called an economic attack that ISIS has planned for, and the army and police forces in different areas of their deployment should seriously pursue this case (Salehi et al., 2021).

But with the passage of time and the appearance of the negative consequences of ISIS on Iraq, the consequences of this anti-human activity can be seen to some extent. They can be understood without empirical investigation and deep research. However, some consequences are intangible and cannot be observed objectively. However, these consequences are so significant and can affect the lives of the people in this environment and their economy that they become visible indirectly after some time. One negative consequence of the ISIS war and crisis is that a deep shock has been inflicted on the corporate environment and structures. In such a way, it is possible even to bring the companies to an absolute shutdown and disturb the continuity of their activities. Undoubtedly, the role of these conditions must be addressed in financial reporting and information provision. According to Kim and Schwan (2022), a crisis at the economic environment level can increase uncertainty and insecurity. In this situation, different scenarios can be depicted. Such an atmosphere allows managers to take advantage of this opportunity and advance their motivations and goals faster. For example, in the atmosphere of war and crisis, such as the crisis created by ISIS, it is possible that the managers record and report the wrong information. Due to the created conditions, the beneficiaries do not have the opportunity and ability to evaluate this information. The existence of inflammatory and tension-causing environments and spaces, like a crisis, has a tremendous negative impact on the corporate environment, especially the status report and its operations, which can affect the company and the decisions of all its stakeholders for a long time (Bazrafshan et al., 2021). Because the information available under these conditions must be more accurate and relevant. On the other hand, auditors dealing with this information cannot do their work with the required quality due to a considerable flow of wrong and incomplete information. Finally, it can be argued that the quality of their work will decrease too much.

Another one of the consequences of this war and its crisis is that their propaganda and threats can influence public thoughts and gather supporters. Probably, this literature is somewhat new and unknown, and the investigations of the present research up to this point show that so far, very few studies have dealt with the ISIS crisis and war and its impact on the financial and operational status of companies (Salehi et al., 2023). However, as previously discussed, the ISIS war is a regional terrorism, and in the research done, the origin and role of terrorism can be found in the reporting. These fans may relate to companies in any way and can influence their atmosphere (Hills et al., 2020). For example, he may use the cash resources of these companies to advance the terrorist goals of this group. In this case, the information about these cash sources should be distorted, which can significantly reduce the quality of their reports and audits. In this way, the ISIS crisis can indirectly lead to a decrease in the quality of financial reporting and auditing of those reports. Many of these consequences can be seen as the result of people's motivation.

On the one hand, it is possible to take full advantage of this situation to advance their



opportunistic goals and act against the wishes and goals of other stakeholders. Also, on the other hand, the influential people in the company may be in favor of this group, and considering the Iraqi environment where most of the companies work in the field of oil and its products and the role and dominance of ISIS over this industry during the several years of the crisis, resources And the company's expenses for the purposes and in line with the motivation of this group are lost, and the information of these items is misleading and complicated, which can make it difficult for the auditors to detect these frauds and reduce the quality of their work, in addition to distorting the company's reports. On the other hand, these people and groups in any country can pose a severe threat to the whole country and, consequently, to those companies. This threat will undoubtedly lead to a decrease in the quality of the company's activities and, ultimately, its reports, which may be prepared and presented under existing pressures. Also, there is a possibility that the auditor will be forced to provide a report that fits the goals of these people, in which case the auditor's independence will be questioned. The quality of their report of the company's reports will automatically decrease.

This literature is somewhat new and unknown. So far, the study has yet to mention this issue and has not examined the impact of the ISIS war and crisis on the motives of fraudulent reporting and audit quality, which the current research uses. However, it can be acknowledged that ISIS is considered a terrorist movement with inhumane activities. In the conducted studies, the root and role of terrorism can be found in reporting. In this regard, Hills et al. (2021) showed that terrorism is a severe threat to the financial reporting environment, and it is even possible that the United States Securities and Exchange Commission (SEC) fails to identify reporting errors and fraud caused by the phenomenon. These findings undoubtedly emphasize the negative impact of terrorism on the atmosphere and quality of financial reporting of companies and their audit.

On the other hand, it can be inferred that terrorism can lead to the fraudulent reporting incentives mentioned above. Also, Hills et al. (2020) state that the existence of terrorist movements disturbs and even destroys the monitoring of financial reporting. In addition, Cunningham (2003) states that terrorism increases the limitations of internal controls and leads to an increase in fraud. Also, Aggarwal (2006) argued that terrorism disrupts and disrupts corporate financial management. The findings of Salehi et al. (2021) have confirmed the impact of the ISIS war and crisis on the corporate environment and financial reporting in Iraq because their findings state that ISIS reinforces the negative relationship between political connections and the quality of financial reporting. In addition, the findings of Salehi et al. (2022) state that the ISIS war has affected and reduced the transparency of Iraqi companies' financial reporting. Also, Bazrafshan et al. (2021) ISIS has reduced the quality of profit and managerial ability of Iraqi companies. This evidence supports the argument of the current research regarding the negative impact of the ISIS crisis on the reporting environment. Also, based on this, it can be expected that ISIS will increase fraudulent reporting incentives and reduce the quality of audits in Iraqi companies. Based on these materials, the third and fourth hypotheses are as follows.

H3: The ISIS war crisis significantly affects the motives for fraudulent reporting.

H4: The ISIS war crisis has a significant effect on audit quality.

### **2.3. Comparison of Covid-19 and the presence of ISIS**

The main goal is to compare the impact of the presence of ISIS and the COVID-19 pandemic on the motives of fraudulent reporting and audit quality in Iraq. COVID-19 is one of the natural disasters that somehow covered the whole world. However, ISIS's attack on Iraq is a religious and fanatical movement rooted in people's mental emanations. It can somehow authentically affect people's thoughts and, with destructive works, subdue parts of the economic environment. But COVID-19 shut down all businesses for a while. In addition, the periods of these two crises were different from each other. The presence of ISIS dates back to 2013, and there are still traces of this takfiri group. However, the COVID-19 epidemic started in 2019 and has subsided using medical science solutions. Therefore, the impact period of these two crises is also different. According to the differences in these two crises, it can be concluded that the way they affect the reporting environment and the audit quality of the companies' financial reports is also different. Based on this, the present study aims to compare the impact of the presence of ISIS and the COVID-19 pandemic on fraudulent reporting and audit quality. Based on this, the role of each of these crises will be explained separately.

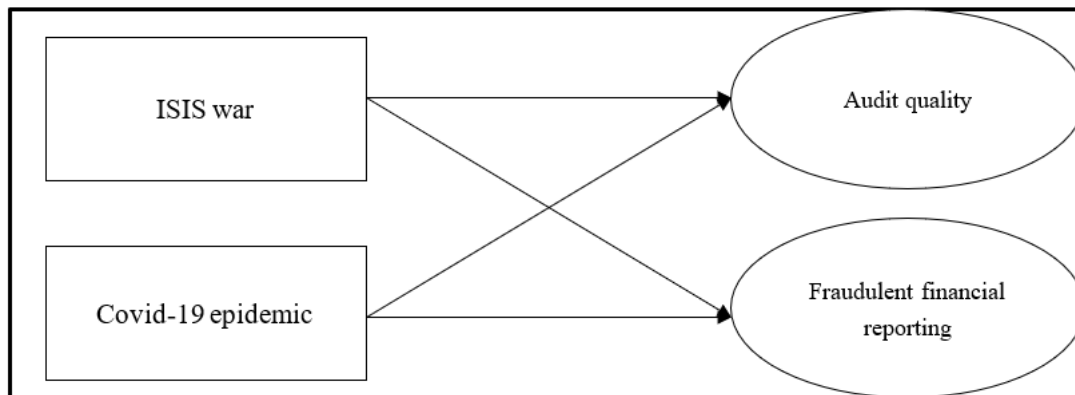
Based on the facts above, the fifth and sixth hypotheses are as follows.

H5: There is a significant difference between the impact of the COVID-19 epidemic crisis and the impact of ISIS on the motivations of fraudulent reporting in Iraqi companies.

H6: There is a significant difference between the impact of the COVID-19 pandemic crisis and the impact of ISIS on audit quality in Iraqi companies.

### **2.4. Conceptual model**

Based on the explanation of the proposed hypotheses, the present research develops a conceptual model as follows.



## **3. Research method**

Considering that this paper aims to compare the impact of ISIS and COVID-19 on the motives of fraudulent reporting and audit quality in Iraq, it is practical in terms of its objective. The library study methods and text review were used, and the objective was to identify predetermined indicators. The current research is a descriptive survey based on the nature and research method.

First, interviewing experts is used to identify the factors and indicators related to the motivations of fraudulent reporting, the quality of auditing, and the ways of influencing them by the crises of COVID-19 and the ISIS war. In the following, after identifying and finalizing the criteria and indicators localized in Iraq, like other studies, the financial and non-financial data of companies active in the capital market were used, and finally, the proposed model that includes these indicators and their influence, through structural equations in SmartPLS4 software is tested. In other words, the cause-and-effect relationship between the variables mentioned to test hypotheses 1 to 4 using the structural equation modeling method and its type, i.e., confirmatory factor analysis with the partial least squares approach, has been carried out due to the presence of hidden variables and, in the model, small sample size and, complex relationships between variables seem essential. Also, to test the fifth and sixth hypotheses, a comparative discussion, two-way ANOVA, and two-way MANOVA are used in the SPSS29 software environment. Since one criterion is used to measure the motives of fraudulent reporting, it is supposed to measure the effect of two independent variables (COVID-19 and ISIS) on it. Two-way analysis of variance should be used, but since several criteria are used to measure audit quality, it is supposed to measure the effect of two independent variables (COVID-19 and ISIS). So, a two-way multivariate analysis of variance should be used. The necessary data for testing the research hypotheses have been collected from 2008 to 2021. The period before the presence of ISIS is from the beginning of 2008 to the end of 2012 (the entry of ISIS into Iraq was in 2013), and the period of the presence of ISIS is considered from the beginning of 2013 to the end of 2021. Also, for tests related to the Corona crisis, the period of the absence of the Corona crisis from the beginning of 2008 to the end of 2019 and the period of the Corona crisis from the beginning of 2020 to the end of 2021 have been considered.

### **3.1. Population and statistical sample**

For this paper, two statistical populations have been considered, each of which is described in detail below:

A) The statistical population in the qualitative part comprises university professors and academic faculty members in the field of accounting who have expertise in the field of research in Iraq. The selection criteria for this community to conduct an interview are a doctorate in accounting or auditing and at least 5 articles published in reputable journals regarding fraudulent financial reporting and audit quality. The snowball sampling method is used to determine the sample size of the first statistical population. In this method, several interviews are conducted so that the necessary and sufficient information for designing the model is provided to the author, and the answers reach theoretical saturation. In other words, the answers to the interviews should be repeated.

B) In the quantitative section, the statistical population is the companies admitted to the Baghdad Stock Exchange. In this section, sampling is done systematically, and the statistical sample is collected based on the following conditions:

- 1) Their information is available for the research period.
- 2) The activity should not stop for more than 6 months during the research period.

### **3.2. Analysis**

In the current study, after conducting interviews with 7 experts (accounting professors who must

have met the conditions mentioned above), 4 indicators: 1. audit fee and 2. discretionary accrual items, 3. delay in submitting the audit report and 4. auditor's expertise in the industry, 19 indicators were considered to measure audit quality and to measure fraudulent reporting, and the method of measuring them is described below.

To measure the variables of the presence of ISIS in Iraq and the epidemic of COVID-19, it is done as follows.

### *ISIS (ISIS)*

The years of intense presence of ISIS in Iraq are assigned the number 1, and the rest of the years of the research period are assigned zero.

### *Corona (COVID-19)*

The years of the outbreak and epidemic of COVID-19 get 1, and the rest are zero.

### *Audit Quality*

The following criteria are used to measure audit quality, as described below.

1. AuditFee is the natural logarithm of the audit fee (Pacheco Paredes and Wheatley, 2020).

2. Optional Accruals: Optional accruals are used to measure audit quality, following Pacheco Paredes and Wheatley (2020).

$$\frac{TA_{it}}{A_{it-1}} = \beta_0 + \beta_1 \left( \frac{1}{A_{it-1}} \right) + \beta_2 \left[ \frac{(\Delta REV_{it} - \Delta AR_{it})}{A_{it-1}} \right] + \beta_3 \left( \frac{PPE_{it}}{A_{it-1}} \right) + \beta_4 ROA_{it} + \varepsilon$$

where A: The sum of accruals is equal to the profit before interest and taxes minus the cash flow from operating activities;  $A_{t-1}$ : total assets of the company in the previous year;  $\Delta REV$ : changes in total operating income in the current year compared to the previous year; PPE: Gross total of property, plant and equipment in the current year;  $\Delta AR$ : equal to changes in accounts receivable in the current year compared to the previous year; ROA: Return on assets of the company, which is equal to the profit before interest and taxes divided by the total assets of the current year.

AuditLag is the natural logarithm of the number of days of the difference between the end of the financial year and the presentation of the audit report (Pacheco Paredes and Wheatley, 2020).

Auditor's expertise in the industry: Market share is used as an indicator to measure the auditor's expertise in the industry. Because it shows the preference of the industry over other auditors. The higher the auditor's market share, the higher the auditor's industry expertise and experience compared to other competitors. The audit firm's market share is calculated as follows (Rajgopal et al., 2021):

$$MS_{ik} = \frac{\sum_{j=1}^{J_{ik}} TA_{ijk}}{\sum_{i=1}^{J_k} \sum_{i=1}^{J_{ik}} TA_{ijk}}$$

It is equal to the total assets of all the owners of a particular auditing firm in a particular industry divided by the total assets of the owners in this industry.

MS: Market share of audit firm  $i$  in industry  $k$ ,

TA: Total assets of owners

I: The symbol of the auditing firm

$j$ : The symbol of the employer's company

K: Symbol of the desired industry

J: Symbol of the number of owners of audit firm  $i$  in industry  $k$

Institutions in this paper are considered industry experts whose market share is established in the following relation:

$$MS_{ik} > \frac{1}{N_k} \times \frac{1}{2}$$

N: Number of companies in industry  $k$

Therefore, if an industry expert audit institute has audited the company, the number is one; otherwise, it is zero.

### *Fraudulent financial reporting*

It is done to measure fraudulent financial reporting (Rezai Pitehnoi and Safari Graili, 2017).

To measure fraudulent reporting and follow Auditing Standard No. 260 entitled Auditor's responsibility in connection with fraud and mistakes in financial statements, the signs indicating the possibility of distortions caused by fraud in financial statements are used as follows:

1) Overstatement of inventory, 2) Overstatement of accounts and receivables, 3) Overstatement of fixed assets, 4) Overstatement of investments, 5) Deficit of reserve for doubtful receivables, 6) Deficit of depreciation, 7) Overstatement of income, 8) Overstatement of profit, 9) Overstatement of retained earnings, 10) Understatement of accounts and payable documents, 11) Tax reserve deficit, 12) Contingent liabilities, 13) Employee severance benefit reserve deficit, 14) Expense understatement, 10) Accounts and payment documents that are long past due. They are past, 16) stagnant inventory, 17) stagnant assets, 18) going concern problems, and 19) errors in applying accounting standards related to measurement, recognition, classification, presentation, or disclosure.

If any of these signs are present in the adjustment clauses of the annual audit reports of the companies, the value will be one, indicating the possibility of fraudulent reporting; otherwise, the value will be zero. Finally, the probability of fraudulent reporting is calculated from the sum of 1 divided by 19 indicators

## **4. Findings**

The results of the descriptive statistics variables for 33 companies from 2008 to 2021 (462 observations) are described in **Table 1**. As it is known, the average and the median of the natural logarithm of audit fees are close, indicating this variable's small dispersion. In other words, most

companies' audit fees are within the same range. The average of discretionary accrual items is around zero, which shows that discretionary accrual items are used a little in most observations. The average of the natural logarithm of the delay in submitting the audit report indicates that in most observations, the difference between the end of the financial year and the submission of the audit report is high. Finally, the mean and median of observations of fraudulent financial reporting show that the probability of fraudulent financial reporting in Iraqi companies and the risk of investing in them is also high.

**Table 1.** The Descriptive statistics of data.

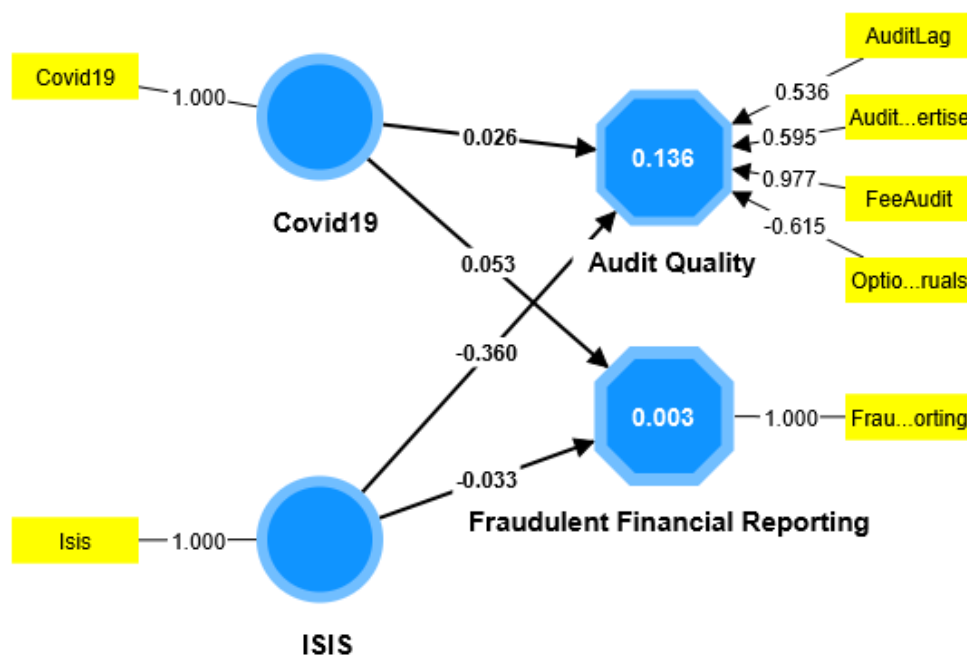
Panel A: Consistent variables							
Variable	Sign	Mean	Median	Standard deviation	Minimum	Maximum	Factor load
Audit fee (Ln)	<i>AuditFee</i>	15.388	15.274	1.021	12.206	19.051	0.977
Optional accrual items	<i>Optional Accruals</i>	0.000	0.087	0.809	-8.841	3.905	-0.615
Delay in providing the audit report (Ln)	<i>AuditLag</i>	4.632	4.771	0.736	2.565	5.878	0.536
Fraudulent financial reporting	<i>Fraudulent Financial Reporting</i>	0.654	0.684	0.094	0.421	0.895	1.000
Panel B: Discrete variables							
Variable	Sign	Frequency 1	Frequency 0	Frequency percentage 1	Frequency percentage 0	Factor load	
Auditor expertise in the industry	<i>Auditor's Expertise</i>	218	244	0.472	0.528	0.595	
ISIS	<i>ISIS</i>	297	165	0.643	0.357	1.000	
Coronavirus	<i>COVID19</i>	66	396	0.143	0.857	1.000	

Convergent validity, Cronbach's alpha coefficient, and composite reliability methods were used to determine the validity and reliability of the mentioned questionnaire, respectively, and based on this, the validity and reliability were confirmed, and the results are reported in **Table 2**. The Cronbach's alpha value of the variables is higher than 0.7, so there is an acceptable reliability. Also, the composite reliability values of the constructs are a more realistic and accurate measure than their Cronbach's alpha, and a value higher than 0.7 of the composite reliability coefficient in **Table 2** indicates appropriate internal stability for the measurement models. Fornell and Larcker (1981) introduced the AVE criterion (average variance extracted) to measure convergent validity and stated that the critical value of AVE is 0.5. This means that the value of AVE above 0.5 gives an acceptable convergent validity. **Table 2** shows that the average extracted variance of all variables is more than 0.5, which indicates acceptable convergent validity.

**Table 2.** The results of Cronbach's alpha coefficient, composite reliability coefficient, and average variance were extracted.

Variable	Cronbach's alpha coefficient (Alpha > 0.7)	Composite reliability coefficient (Alpha > 0.7)	Average variance extracted (AVE > 0.5)
Audit quality	0.939	0.927	0.971
Fraudulent financial reporting	1.000	1.000	1.000

Factor loadings are calculated by calculating the correlation value of the indicators of a structure. Suppose this value is equal to or greater than 0.4. In that case, it confirms that the variance between the structure and its indicators is greater than the variance of the measurement error of that structure and the reliability of it. The measurement model is acceptable. Some authors, such as Rivard et al. (2006), have mentioned 0.5 as the criterion value of factor loadings. The critical point is that if the author comes across values less than 0.4 after calculating the factor loadings between the structure and its indicators, he should modify or remove those indicators from his research model. **Figure 1** and **Table 1** show the factor loadings of the variables. The factor loadings of these variables are more significant than 0.4, which indicates that the variance between the structure and its indicators is greater than the variance of the measurement error of that structure, and the reliability of the measurement model is entirely acceptable. Also, the negative sign of the factor load of optional accrual items indicates an inverse relationship between this variable and audit quality. In other words, the more discretionary accrual items in financial statements, the lower the audit quality.

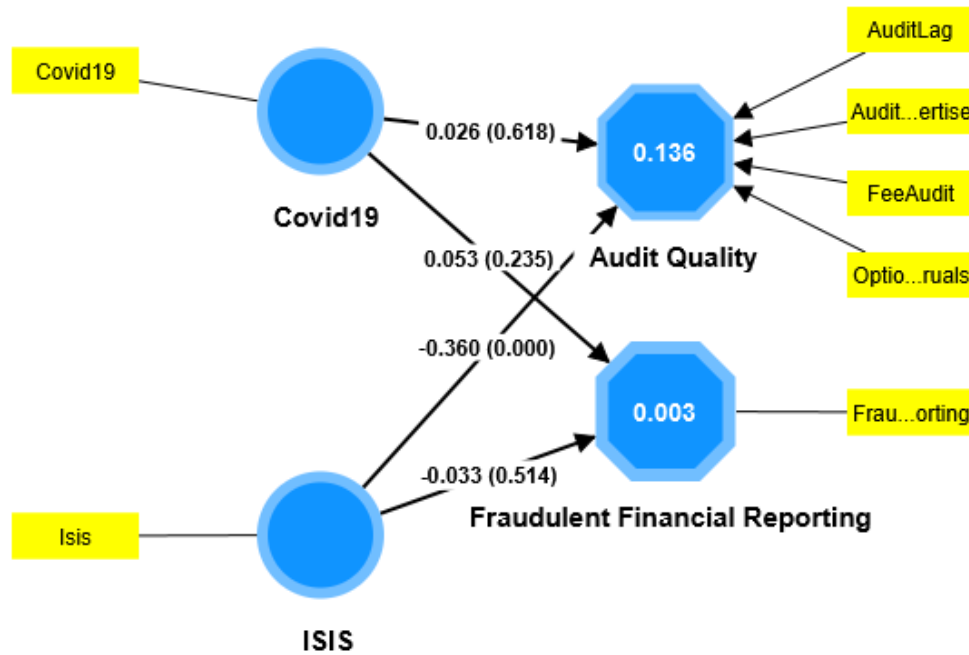


**Figure 1.** Results of factor loading and path coefficients in the research model.

## 5. The results

**Figure 2** and **Table 3** summarize the results of the first to fourth hypotheses regarding the impact of the COVID-19 crisis and the ISIS war crisis on the motivations of reporting and audit quality. Considering that the value of the t statistic obtained from the first to third hypotheses is less than 1.96

and its significance level is more than 5%, the first to third hypotheses are rejected. Therefore, there is no significant relationship between the epidemic of the COVID-19 crisis and fraudulent reporting motives and audit quality and between the ISIS war crisis and fraudulent reporting motives. However, according to the t-statistic and the significance level of the fourth hypothesis, it was found that the ISIS war crisis had a negative and significant effect on the audit quality. Therefore, the fourth hypothesis is accepted.



**Figure 2.** Model fitting results.

**Table 3.** Summary of the test results of the first to fourth research hypotheses.

Hypothesis	Path	Path coefficients	t statistic	Significance level	Hypothesis result
First	The COVID-19 crisis pandemic → Incentives for fraudulent reporting Cv – Red: 0.263	0.053	1.187	0.235	Rejected
Second	The epidemic of the crisis of Kovid 19 → audit quality Cv – Red: 0.219	0.026	0.499	0.618	Rejected
Third	ISIS war crisis → motives of fraudulent reporting Cv – Red: 0.287	-0.033	0.653	0.514	Rejected
Fourth	ISIS war crisis → audit quality Cv – Red: 0.298	0.360-	7.696	0.000	Confirmed
Incentives for fraudulent reporting			R <sup>2</sup> (0.003)		
Audit quality			(0.136) R <sup>2</sup>		

Based on the CV-Red and CV-Com statistics, which respectively represent the content validity (redundancy) and the share validity (cross-validity) index, based on the positive numbers in all paths, it means the appropriate quality of the structural model for the research paths. It is shown in **Table 3**. Also, the R2 value of the dependent variables in Table 4 shows that the explanatory



variables predict about 1% of the changes in the fraudulent reporting motives variable and about 14% in the audit quality variable.

### 5.1. The results of the fifth to sixth hypotheses

To respectively test the fifth and sixth hypotheses based on the significant difference between the impact of the COVID-19 pandemic crisis and the impact of ISIS on fraudulent reporting motives and the considerable difference between the impact of the COVID-19 pandemic crisis and the impact of ISIS on audit quality from two-way variance analysis and multivariate analysis A two-way variable was used. According to **Table 4**, the results of the fifth hypothesis test show that the significance level of the interaction effect of the epidemic of COVID-19 and ISIS (ISIS\* COVID-19) on the motives of fraudulent reporting is more than 5% (0.709), which shows a significant difference between There is no effect of the COVID-19 epidemic crisis and the impact of ISIS on the motives of fraudulent reporting, and the fifth hypothesis is not confirmed.

**Table 4.** Summary of the test results of the fifth and sixth research hypotheses.

Hypothesis	Variable	Degree of freedom	F statistic	Significance level	Effect size	
Fifth	ISIS	1	0.449	0.503	0.001	
	COVID-19	1	1.176	0.279	0.003	
	ISIS * COVID-19	1	0.342	0.709	0.001	
Sixth	FeeAudit	1	60.983	0.000	0.117	
	ISIS	OptionalAccruals	1	0.022	0.881	0.000
		AuditLag	1	2.708	0.101	0.006
		AuditorsExpertise	1	0.508	0.476	0.001
	COVID-19	FeeAudit	1	0.042	0.837	0.000
		OptionalAccruals	1	7.707	0.006	0.017
		AuditLag	1	0.135	0.714	0.000
	ISIS * COVID-19	AuditorsExpertise	1	0.000	1.000	0.000
		FeeAudit	1	24.3932	0.000	0.046
		OptionalAccruals	1	0.008	0.352	0.000
AuditLag		1	1.083	0.040	0.002	
	AuditorsExpertise	1	0.203	0.190	0.000	

Also, according to **Table 4**, the results of the sixth hypothesis test show that the significance level of the interaction effect of the epidemic of COVID-19 and ISIS (ISIS \* COVID-19) on two criteria of audit quality, including audit fees and delay in submitting the audit report, is less than 5% which shows a significant difference between the impact of the COVID-19 pandemic crisis and the impact of ISIS on audit quality. The sixth hypothesis is accepted.

## 6. Conclusion and discussion

The Corona epidemic as a global crisis and the ISIS war as a regional crisis in Iraq have significantly impacted the atmosphere of companies and the continuation of their activities. The

present study examined the role of these crises in creating incentives for fraudulent reporting and reducing or improving audit quality and compared the results of these two relationships. In other words, the current study was looking for answers to these issues: What effect did the ISIS war and the COVID-19 pandemic have on the fraudulent reporting motives of companies, and how did it affect the quality of their audits? In the end, the answer to this question was addressed: What are the differences and similarities between the study results of the impact of COVID-19 and ISIS on fraudulent financial reporting and audit quality? For this purpose, the data of 33 companies from 2008 to 2021 (462 observations) were collected to examine six formulated hypotheses, and the hypotheses were tested using structural equations and analysis of variance. Interviews with experts were also used to determine quality indicators of auditing and fraudulent financial reporting so that indigenous indicators were selected and finalized. The results showed no significant relationship between the epidemic of the COVID-19 crisis and the motives of fraudulent reporting and audit quality and between the crisis of the ISIS war and the motives of fraudulent reporting. However, the ISIS war crisis has negatively and significantly impacted audit quality. Finally, the results indicated no significant difference between the impact of the epidemic crisis of COVID-19 and ISIS on the motives of fraudulent reporting. Still, there is a significant difference in the impact of the epidemic crisis of COVID-19 and ISIS on the audit quality. The knowledge enhancement of the present study is the development of literature on the impact of the Corona and ISIS crises on corporate financial reporting and auditing. The present study, by studying the consequences of COVID-19 and ISIS, showed that further investigations in this field, especially regarding the capital market environment and a company, can obtain essential results based on which practical suggestions can be made for possible future crises.

The crises discussed were the ISIS war crisis, a regional crisis, and the coronavirus epidemic, a global crisis. In the past years, each of these phenomena has significantly impacted the atmosphere of companies and the continuation of their activities in Iraq. However, according to the results of the first hypothesis, it was found that the Corona crisis in Iraq did not provide the opportunity to engage in illegal acts and misrepresent financial statements. According to the descriptive statistics section of the variables, the average of fraudulent financial reporting of observations showed that the possibility of fraudulent financial reporting in Iraqi companies is high. During the Corona period, Iraqi companies have probably continued their fraudulent reporting procedure as before, and Corona has not been able to intensify it significantly. Also, it can be stated that the companies in Iraq may still need to change their previous work methods and protocols in response to the coronavirus crisis, internal controls have continued as before, and the possibility of fraudulent financial reporting has increased significantly. According to the results of the second hypothesis test, it was found that Corona has kept the audit quality of companies relatively the same. However, according to the literature, the Corona crisis was expected to reduce the audit process and report quality. In such a situation, professional regulatory bodies, in line with their legal responsibilities towards company managers and auditors, have expanded and deepened their scope of supervision and have not allowed them to increase fraudulent financial reporting and quality. Reduce audits. It is more likely that the standardization authorities and regulatory bodies in Iraq have forced the managers and auditors of the companies to exercise their professional judgment and pay serious attention to the implementation of accounting and auditing standards.

In the opinion of Iraqi companies, due to going through various crises such as numerous wars

and its inflamed atmosphere, they have not paid much attention to the recent crises, and contrary to the results of Kim and Schwan (2022), Nure (2022), El-Chaarani et al. (2022), Al-Qadasi et al. (2023), Hay et al. (2021) and Albitar et al. (2020).

Although according to the results of the third hypothesis, it was found that the ISIS war crisis did not have a significant effect on the motives of fraudulent reporting, based on the results of the fourth hypothesis, it was found that the ISIS crisis has significantly reduced the quality of auditing. The existence of the ISIS war crisis has yet to lead managers to record and report wrong information. In other words, the presence of ISIS, like the Corona period, has not significantly affected the distortion of financial reporting, which can be rooted in solid regulations and supervision. Also, the possibility of fraudulent financial reporting has not changed significantly due to the presence of ISIS. In that case, it can be concluded that the cash resources of Iraqi companies have not been spent to advance the terrorist goals of the ISIS group because, in this case, the information of these cash sources must be distorted. It has often been stated that this issue can reduce the quality of financial reports.

Although there was no significant change in the possibility of fraudulent financial reporting during the period of ISIS presence, it was found that auditing quality significantly decreased during this period. The reason for this can be found in the migration of audit experts during turbulent and turbulent periods, threats and coercion of auditors to confirm suspicious reports, auditors' fear of possible reprimands in case of fraud disclosure, and reduction of their working time and wages. He found that all of them eventually led to decreased audit quality. In line with the results of Bazrafshan et al. (2021) and Hills et al. (2020), it was found that the consequences of war are so vital that they can reduce the quality of company audits.

The results of the comparative study of the impact of the presence of ISIS and the COVID-19 pandemic on fraudulent reporting motives and audit quality indicated no significant difference between the impact of the COVID-19 pandemic crisis and ISIS on the motives of fraudulent reporting. Still, the impact of the COVID-19 pandemic crisis and ISIS on There is a significant difference in audit quality. Such a finding, in line with the results of the hypothesis, shows that audit quality in Iraq has been more effective than fraudulent financial reporting in crises. COVID-19 and the ISIS attack on Iraq can affect audit quality differently. As shown in the second hypothesis, the epidemic of the COVID-19 crisis has not significantly changed the audit quality, but the ISIS war crisis has reduced the audit quality. The results of the sixth hypothesis also confirmed this difference and confirmed that these effects are statistically and significantly different. The weight of ISIS has been more significant in destroying audit quality. According to the presence of ISIS and the influence of the thoughts of this takfiri group, it has been able to cause a severe crisis for the auditors, and by reducing the audit fee and increasing the delay in submitting the audit report, it has reduced the quality of the audit more strongly.

Based on the results, it was found that the probability of fraudulent financial reporting in Iraqi companies is high, and since this fraud can have a significant adverse effect on the market value of the business unit, its credibility, and its ability to achieve strategic goals. Unreasonable increases in stock prices, fraud, and misuse of investors' funds, policymakers, legislators, and auditors are suggested to expand and deepen their scope of supervision to reduce this amount of fraudulent financial reporting and the possibility of preventing a massive fraud. It is recommended to the government and the legislators that in the face of crises, they prioritize protecting the audit quality

of the companies by increasing the audit fee and determining the reward for the timely submission of the audit report of the capital's benefits. Investors and beneficiaries should support it so that public interests are not harmed. Also, considering that it was found that the shadow of war and takfiri thoughts can cause a fundamental blow to the auditing body, it is suggested that to better face such crises in case of reoccurrence, the training of professional ethics standards for accountants and auditors in Priority should be given to strengthening the spirit of ethics and maintaining independence in Iraqi auditors.

## **Author contributions**

Conceptualization, MAMAG and MABV; methodology, MS; software, MAMAG; validation, MS, MABV; formal analysis, MS; investigation, MAMAG; resources, MAMAG; data curation, MABV; writing—original draft preparation, MAMAG; writing—review and editing, MAMAG; visualization, MABV; supervision, MS; project administration, MS; funding acquisition, MAMAG. All authors have read and agreed to the published version of the manuscript.

## **Conflict of interest**

The authors declare no conflict of interest.

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