

# Employing Forensic Accounting Techniques to Reduce Accounting Fraud Practices in Iraqi Government Units

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**Abstract:** The study seeks to achieve its goal in shedding light on Forensic accounting techniques to reduce accounting fraud practices that occur in Iraqi government units, as the study problem is the weakness of the control system applied in those units and its inability to detect cases of manipulation and fraud, whether in the financial or administrative aspect. The study was based on the hypothesis that there is a statistically significant correlation between the variables of applying Forensic accounting techniques and the variables of reducing accounting fraud. Hence, this study came to address the mechanism of applying Forensic accounting techniques within a comprehensive framework in an attempt to search for the effect and the relationship between it and improving the accounting system applied in Iraqi government units.

**Keywords:** Forensic accounting, accounting fraud, Forensic accounting techniques.

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## I. INTRODUCTION

There is no doubt that most government units at the global level and with different orientations (legal, economic or social) suffer from high rates of corruption and fraud, whether financial or administrative, but this varies in terms of the size and rate of penetration of corruption from one country to another, so we find that developing countries have many rates of corruption compared to developed countries, according to a report (Transparency International) This is due to a defect or weakness in the applied regulatory systems, which is negatively reflected in the application of laws and instructions that limit financial fraud. At the level of Iraq, the Iraqi government units witnessed in the period after 2003 a large outbreak in the rates of administrative and financial corruption as a result of the weakness and absence of laws and government instructions alike, as well as political interference and the instability of the country in light of the repeated crises, which resulted in waste and extravagance of public money at very large rates that had bad repercussions on the economic and social situation. It is worth noting that the accounting thought has been subjected to many criticisms due to its shortcomings in developing appropriate solutions to cases of accounting fraud and therefore there is a need to discover modern means to confront accounting fraud practices, which led to an increase in the interest of Researchers in the field of accounting the need to find ways to address these practices and these efforts have resulted in following multiple and different mechanisms such as activating the rules and mechanisms of corporate governance, and developing auditing and control standards more strictly, and from these mechanisms accounting appeared. Forensic (criminal) and has become one of the important mechanisms in the field of combating cases of financial and administrative corruption.

Hence, the importance of this study to emphasize the importance of the great role played by Forensic accounting techniques in reducing the practices of accounting and functional fraud by focusing on different concepts in a comprehensive framework that explains the mechanism of supporting Forensic accounting techniques in improving the accounting system.

## **II. STUDY METHODOLOGY**

### **1. Study problem**

The study problem crystallizes in the ability of government units to apply Forensic accounting techniques in reducing financial and administrative corruption, which has become rampant in all joints of the state, and therefore the following problem can be raised: "Can Forensic accounting techniques be automated to reduce accounting and functional fraud in Iraqi government units."

### **2. Importance of study**

Despite the existence of many studies that dealt with Forensic accounting, there is no real trend by successive governments in Iraq to apply them, and this explains the clear absence of the application of their techniques and even not adopting them within academic studies, hence this study came to clarify the mechanism of applying Forensic accounting techniques in a comprehensive framework for the purpose of identifying the great and important role that they can play in light of the many problems suffered by Iraqi government units.

### **3. Study objective**

The main objective of the study is to shed light on the theoretical and practical foundations and advantages of applying Forensic accounting techniques, as well as to test the role of their application in reducing accounting and functional fraud practices.

### **4. Study hypothesis**

Based on the study problem and to achieve its objectives, it is based on two main hypotheses to measure the correlation and influence between the study variables as follows: -

The first hypothesis: "There is a statistically significant correlation between the variables of the application of Forensic accounting techniques and the variables of reducing accounting fraud"

The second hypothesis: "There is a statistically significant significant effect of the variables of the application of Forensic accounting techniques and the variables of reducing accounting fraud"

## **III. LITERATURE REVIEW**

### **1. Introduction to Forensic Accounting, Prospects and Areas Covered**

#### **1.1. Definition of Forensic Accounting**

Forensic accounting is a branch of professional accounting, as it is affiliated with professional accounting institutes, and despite its existence on the ground for a long time, it was not officially adopted until 1946 when (Maurice E. Peloubet), a partner in the accounting company (A New York) for accounting, published an article in the accounting magazine entitled (Forensic Accounting) and since that time the term Forensic accounting has been developing significantly in the accounting literature, especially after The financial crises that occurred in the twentieth century and the bankruptcies suffered by major companies such as (Enron & Tyco) as a result of corruption and financial fraud that occurred in them have differed views of Researchers in the definition of Forensic accounting has been defined (Okoye&Ndidika,2009: 39) as the area of specialized practice in accounting that describes financial obligations resulting from an actual or anticipated dispute that serves to provide sustainable accounting analysis to the judiciary that will form the basis for discussion and eventual dispute resolution. (Leiner & Young,2008:3) agrees, describing Forensic accounting as the "application of investigative and analytical skills for the purpose of resolving financial matters in a manner that meets the standards required by the courts". In light of the above, it is clear to us that Forensic accounting focuses on the issue of accounting analysis in resolving legal disputes, which means that the Forensic accountant, unlike the traditional auditor, has the ability to analyze and investigate in order to provide appropriate solutions. In 2015, Huber & DiGabriele introduced the most comprehensive definition of Forensic accounting as "an interdisciplinary field encompassing both the profession and industry where civil or criminal

economic and financial claims that occur within existing political structures are disputed and supported by theories, methods and procedures in the fields of law, auditing, accounting, finance, economics, psychology, sociology and criminology" (Huber & DiGabriele, 2015:6). The above definitions almost give a clear picture of what Forensic accounting is, as these definitions indicated the need for accounting, technical and legal knowledge as well as investigation skills in order to have the ability to detect cases of fraud and corruption. In this context, the Researchers believes that Forensic accounting is the application of accounting concepts and techniques to legal problems where accountability for fraud is proven by providing information that is supposed to be used as a special guide for legal purposes that would provide A comprehensive guide on financial fraud and corruption.

### 1.2. The need for Forensic accountability

The need for Forensic accounting is due to the fact that the audit system in the economic unit has failed to detect certain errors in the financial and administrative system. However, recent accounting scandals, including Enron , one of the largest companies in the energy field, which collapsed as a result of massive fraud, have added great momentum to the search for a viable option in dealing with accounting fraud. Hence, the most important reasons that determine the need for Forensic accounting technology services can be identified as follows: (Chukwunedu & Okoye,2011:2) & (Okoye,2009:8).

- 1- The integration of modern Forensic accounting techniques into traditional auditing is necessary to arm the accounting profession to deal effectively with the problem of discovering genius fraud schemes.
- 2- The failure of the Audit and Internal Audit Committee to uncover the hidden aspects of accounting fraud.
- 3- The often-compromised method of appointing statutory auditors and the apparent lack of independence of internal auditors.
- 4- Given the devastating impact of corruption on the economy of any country and its impact on increasing poverty, it is necessary to deal with the fight against corruption with new determination, and since corrupt people are taking new ways to earn and hide illicit money, law enforcers and stakeholders transfer professions to support their expertise in fighting corruption, and therefore Forensic accountants occupy a very special place in this battle where they can help uncover various forms of institutional and personal fraud.
- 5- The business has become complex and therefore it is difficult for ordinary employees to detect any irregularity or fraud in transactions and as a result the audits, whether external or internal, are insufficient and therefore Forensic accounting is seen as an appropriate tool to provide the highest level of assurance and to give credibility to the financial statements.
- 6- Commercial disputes are becoming more complex and litigants often need clear and credible financial advisors and experts to interpret and explain the complex financial aspects of their cases.

In this context, "we can say that traditional audit techniques cannot be guaranteed to detect fraud in all circumstances due to the limitations inherent in the modern audit process, hence the need for a more robust method to stop the wave of fraud and thus fill the gap of expectations in auditing resulting from the inability of the accounting profession to satisfactorily address fraud from the perception of users of financial statements".

### 1.3. Areas of Forensic accounting

Forensic accounting covers the following areas: (Kasum,2009:4-6) & (Singleton & Singleton,2006:21-22).

1- **Litigation Support:** "At the early stage of the development of Forensic accounting, it was mainly focused on supporting litigation based on expert testimony, however, the Forensic accountant is required to give an opinion based on facts that can be known or disclosed so far, so the accountant may have to become an investigator of some kind and in some cases prepare information as a model for how things will look if done correctly. The main areas of litigation support services include participants in each of professional liability claims as well as a variety of civil claims included in the category of liability claims". Litigation support is useful for:

- a) Obtain the necessary documentation to support or refute compensation.
- b) Review the relevant documents to form a preliminary assessment of the situation in a specific loss area.
- c) Attend the discovery exam to review certification, help understand financial issues, and formulate additional questions to be asked.

2- **Investigative accounting:** The modern trend is in Forensic accounting, as it involves the search for evidence of the existence of criminal behavior and then the dissipation or support of damages in the sense that it is related to the investigation of criminal matters. Investigative accounting is useful in:

- a) It reviews current realities and makes suggestions on possible courses of action.
- b) Assist in asset protection and recovery.
- c) Coordinate with other experts including private investigators and consulting engineers.

3- **Corporate investigations:** "Companies react to concerns that arise through a number of sources that may indicate potential wrongdoing from inside and outside the company environment, whether from anonymous phone call or email from disgruntled employees as these problems must be addressed quickly and effectively to allow the company to continue pursuing its goals".

4. **Criminal matters:** Efforts by accountants and auditors to prevent white-collar crime <sup>(1)</sup> continue to try to examine, evaluate and report financial transactions related to allegations against individuals and companies in a variety of situations such as arson and fraud (bribery or embezzlement).

5- **Insurance claims:** The preparation and evaluation of insurance claims on behalf of the insured and insurance companies requires the assistance of the Forensic accountant to assess both the integrity and quantity of the claim

6- **Compliance with laws and instructions:** Forensic accountants can help economic units achieve regulatory compliance and contracting by ensuring that companies follow the appropriate legislation, law or contract terms.

#### 1.4. Distinguish between Forensic accounting and traditional auditing

What distinguishes Forensic accounting in the field of work is the level of contracts, meaning when the Forensic accountant accepts a particular task, his results or analyses are expected to be subject to hostile or Forensic scrutiny or administrative review and therefore he seeks a level of evidentiary detail and analytical accuracy that will be sustainable within the legal framework of this examination or review and in this context (Okoye&Ndidika,2009:40) that the Forensic accountant uses a very high degree of professional skepticism when doing his job in the sense that he does not rely on the acceptance of interpretations and documents at face value, as well as he delves into the facts and issues much deeper than the traditional auditor, and therefore the Forensic accountant is more familiar with how employees abuse controls, instructions, different types of fraud, schemes and methods used to circumvent internal controls. The following table shows the most important differences between Forensic accounting and traditional revision.

**Table (1) Distinction between Forensic Accounting and Conventional Auditing**

	<b>Forensic accounting</b>	<b>External Audit</b>
1	Forensic accountability in response to an event	Audit is mandatory
2	Forensic accountants must possess an "investigative mentality"	Auditors must have a "professional doubt"
3	Dealing with financial investigations	Measures compliance with disclosure standards
4	The results are used as evidence in court or to resolve disputes.	Obtain reasonable assurance that the financial statements are free of material misstatement
5	A Forensic accountant may focus more on seemingly immaterial transactions	The auditor focuses mainly on physical transactions
6	Its coverage is broader than an audit that deals with both financial and non-financial issues.	The audit relates primarily to the financial statements and related items
7	Focuses on exceptions, strange events and accounting irregularities	Focuses on the detection of errors and omissions in accounting statements
8	Fraud is an intentional misrepresentation of financial facts	Fraud is the deliberate misrepresentation of financial facts of a material nature

Source: (Chukwunedu & Okoye,2011:6-7) & (Oyedokun,2015:10)

<sup>1)</sup> White-collar workers is a Western term for those people who do office "mental" work such as managers and specialists.

In light of the foregoing, we can say that Forensic accounting, unlike the traditional audit, searches for conclusive evidence for the purpose of detecting financial and administrative fraud, while in the traditional audit, deliberate misrepresentation is sought in financial records for the purpose of expressing an impartial technical opinion on the fairness of the financial statements, which means that Forensic accounting is more proactive in the process of examining accounting records, as it does not assume the integrity of management in all circumstances and has nothing to do with guarantees or accounting standards. Which brings it closer to fraud detection.

## 2. Accounting fraud, concept, causes and techniques used to reduce it

### 2.1. Definition of accounting fraud

"Fraud has many definitions that are classified in different ways, as a correct understanding of these definitions is essential to prevent and detect fraud, and in this regard, a set of definitions will be addressed, as the Association of Certified Fraud Auditors (ACFE) defines professional fraud (employee fraud) as the exploitation of an individual's profession for personal gain through the deliberate misuse or theft of the resources or assets of the unit Financial statement fraud is defined as the deliberate misrepresentation of the financial position of an economic unit by misrepresenting the financial statements in order to deceive users" (Singleton, 2010:41). International Standard on Auditing 240 also defines fraud as the intentional act of one or more individuals among management, governance officials, employees or third parties, which involves the use of deception to obtain unfair or illegal benefits. ISA 240,2010:159) Fraud is a global phenomenon that affects all countries and all sectors, encompassing a wide range of illegal practices and illegal acts involving deliberate deception or misrepresentation with the aim of obtaining personal benefits.

### 2.2. Types of fraud

Fraud operations vary according to the activity of the economic unit and its operational processes, as fraud arises as a result of the relationship between the perpetrator of the fraud and the party that was affected by it and is divided into (Louwers, 2015:128) & (Oyedokun,2015:4) & (Ozili,2015:3-4)& (Tiscini, & Di Donato,2006: 3).

1- **Administrative fraud:** It is deliberate fraud committed by management that harms investors and creditors through materially false information and since administrative fraud usually takes the form of misleading financial statements, sometimes referred to as fraudulent financial reports.

2- **Job fraud:** It is the use of fraudulent means to embezzle money or other property from the employer and usually involves a misrepresentation of a certain type such as the use of forged documents, exceeding authority, or violating the employer's policies.

3- **Fraudulent corruption:** There are three types of fraudulent corruption:

a) Conflict of interest: The fraudster exercises his influence for personal gains that adversely affect the company, and the fraudster may not benefit financially, but instead receives an undisclosed personal benefit.

b) Bribery: It is when money (or anything else of value) is offered in order to influence a particular situation.

c) Extortion: It is the opposite of bribery and occurs when money is asked (rather than given) in order to secure a certain result.

4- **Accounting fraud:** Fraud may involve the use of accounting numbers and fraud that includes accounting figures often appears through the manipulation of accounting figures used to generate financial reports and includes:

a) Alteration or manipulation of physical financial records, supporting documents or commercial transactions.

b) Intentional misrepresentation, deletion or misrepresentation of events, transactions, accounts or other material information from which the financial statements are prepared.

c) Deliberate misapplication and misinterpretation of accounting standards, principles, policies and methods used to measure economic events and commercial transactions.

d) Use aggressive accounting techniques such as illicit profit management strategies.

e) Manipulating accounting practices under rules-based accounting standards or principles that allow companies to conceal the economic essence of their performance.

### 2.3. Motives for fraud

There are several common motives and reasons for the occurrence of fraud in the economic unit, these motives can be discussed through the following:

#### 2.3.1 Fraud (Triangle):

It is a triangular representation of the circumstances that can cause people to commit fraudulent acts that acts as a useful assistant to the legal accountant in litigation processes and also helps prevent and detect fraud. There are three motives for fraud:

##### 1- Pressures (motives):

Often, the employee faces different forms of pressure, whether at work or personal life, for example, the employee's desire to obtain a promotion, to be seen as a successful person, or to gain the appreciation of management, all of which are considered circumstances that force an individual to commit fraud, and fraud often begins when a person is involved in financial obligations that cannot be controlled and thus the inability to disclose them to others. Therefore, the commission of fraud is usually associated with personal pressure or the pressure of the institution on the individual, and the employee can exploit his position at work under an official cover that protects him from accountability, such as the protection of political parties for their members, which increases cases of fraud. (Al-Jajawi&Al-Zurfi,2018:45)

##### 2- Opportunity:

"When there is an incentive to commit fraud, the offender will seek an opportunity to perform the fraudulent act. There is consensus in the accounting literature that the chance of committing fraud is more likely when there are ineffective control systems" (Ozili,2015:5). According to Cressey's, the fraudster always has the knowledge and opportunity to commit fraud. ACFE study studies have shown Employees and managers are always executed when they commit fraud, and to explain this, it can be simply said that by virtue of their long experience, they have a good knowledge of where there are weaknesses in internal controls and have acquired sufficient knowledge of how to commit a crime successfully (Singleton,2010: 46).

##### 3- Justification:

It is the third element in the fraud triangle and that is when the perpetrators of fraud have some incentives and find an opportunity to commit fraud, they will seek explanations to justify their actions, and some justifications include the prosecution I borrowed money, I will pay the price, no one suffered as a result, I did not know it was a crime etc. (Ozili, 2015: 5-6).

#### 2.3.2 Diamond Fraud Theory:

Wolf and Hermanson (2004) presents the theory of diamond fraud instead of the fraud triangle presented by Cressey, as he argues that the diamond theory provides a better view of the factors that lead to fraud by adding a fourth variable, which is (ability), where he believed that many frauds would not have occurred without the right person who has the appropriate capabilities to implement the details of fraud, and the most important reasons that encourage the employee to commit fraud can be summarized as follows: (Gbegi&Adebisi,2014:245).

- a) Possesses a reliable position or position within the economic unit.
- b) The ability to understand and exploit accounting systems and weak internal control.
- c) Confidence that it will not be detected or if it is discovered it will easily come out of it.
- d) The ability to cope with the stress generated when he commits bad acts.



**2.3.3 Crime theory:**

"Rezaee (2005) investigated factors that may increase the likelihood of fraud by naming fraud with a concept he called CRIME (crime) where C refers to <sup>(2)</sup>Cooking the books, R to Recipes (recipes for cooking preparations), Incentives I (incentives), Monitoring M (monitoring or lack thereof), E end Results (final results). Rezaee concluded Based on his own crime analysis, financial statement fraud represents a serious threat to investors' confidence in financial information". Also, recently Kranacher et al (2010) formulated their own concept to explain the motives of fraud, they called it MICE and according to them this term expresses money, ideology, coercion, and vanity that are motives for committing fraud. "In their analysis, they retained the structure of the fraud triangle but used a common triangle similar to diamond fraud. In general, emerging complex fraud cases and ongoing fraud study continue to create opportunities to expand the fraud triangle towards a fraudulent triangle structure" (Peterson,2015:6).

**2.3.4 The role of Forensic accounting techniques in reducing accounting fraud**

The most important techniques used in Forensic accounting to reduce fraudulent practices: Oyedokun,2016:9-13) &(Oyedokun,2015:13-14) & (Durtschi et al, 2004: 18-19) &(Mehta & Mathur,2007: 1576-1577) &(Al-Jubouri&Al-Khalidi,2012:424).

**2.3.4.1 Identification of anomalies:**

The CIMA Institute of Management Accountants has identified two main tools for anti-fraud professionals (Forensic accountants) in the fight against fraud that are based on thinking and acting logically: training, experience and the necessary mindset. He also suggested some techniques available to help identify irregularities that may be fraudulent and study anomalies to decide whether further action should be taken. These techniques are:

- 1- General reading: It is important to keep abreast of fraud trends and issues, as the general press can be a useful source of information, so it is also useful to subscribe to a publication specialized in fraud or buy a good reference book, etc..
- 2- Risk assessment: Conduct fraud risk assessment and design specific tests to detect potential fraud and then find solutions to violations that raise suspicion.
- 3- Systems analysis: It is important to examine existing systems and identify weaknesses in them.
- 4- Specialized software: such as audit tools for data matching analysis, which can be very useful.
- 5- Reporting exceptions: Many systems can generate automatic reports of out-of-rule results (exceptions) allowing immediate identification as it is possible to send an email or text alert directly to the manager when those exceptions are identified.

**2.3.4.2 Computer Assisted Document Audit and Review (CAR):**

The use of Forensic accounting techniques in the computer is the practice of collecting, analyzing and reporting digital data in a legally acceptable manner as it can be used in the detection and prevention of crime and in any dispute in which evidence is stored digitally and the computerized Forensic accounting examination process can be divided into six stages:

- 1- Readiness: The Forensic accountant is required to prepare, train, verify their software and equipment, familiarize themselves with legislation, and deal with unforeseen problems.
2. Evaluation: The evaluation phase includes receiving instructions, clarifying whether those instructions are unclear, analyzing risks, and allocating roles and resources. .

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2) Cooker books is a general term for using accounting tricks to make a company's financial results look better than they really are. Cooking books usually involves manipulating financial data to inflate a company's revenue and reduce its expenses in order to increase its profits.

3- Collection: The assembly phase includes the labeling and packaging of evidentiary materials from the site to be sealed in installed numbered bags where safe transportation of materials to the testing laboratory must be considered.

4- Analysis: It depends on the details of each job; the examiner usually provides feedback to the client during the analysis and from this dialogue the analysis may take a different path or be narrowed in specific areas.

5- Presentation: "This stage usually involves the examiner preparing a structured report on his findings, addressing the points contained in the initial instructions along with any subsequent instructions, and will cover any other information that the examiner deems relevant to the investigation".

6- Review: The examination review can be simple and quick and can be started during any of the above stages.

#### **2.3.4.3 Data mining technology:**

It is the process of extracting information from data for the purpose of discovering relationships and patterns unknown in advance and this technology helps in detecting fraud by detecting patterns of behavior that are an indicator of fraudulent activity as it depends on mining a large amount of data for the purpose of searching for any pattern or unexpected information, noting that this technology is implemented by computer programs dedicated to this purpose and this technology includes three activities::

1- Exploration: includes the detection of patterns in the data such as trends or variations without any previous assumption about what pattern will be discovered without prior knowledge of fraud and represents the link that there is a relationship between variables in the sense that the occurrence of any variable will lead to the occurrence of the other.

2- Prediction models: The patterns detected are used for the purpose of estimating the output that must be obtained from the new values.

3- Analysis of variance: The variance is extracted by identifying the rule in the beginning and then diagnosing the items that deviate from it, which are considered as anomalies and must be investigated.

#### **2.3.4.4 Benford Law:**

"This law states that many types of number sets must follow a logarithmic distribution known as the Benford distribution. According to Cleman, Frank Benford (a physicist at General Electric in the thirties of the last century) assumed the distribution that bears his name now that he noticed that the first pages of the logarithm books were more eroded than later pages (this was before the time of electronic calculators) and because of his inspiration he investigated more than 20,000 numbers selected from various sources The distribution was determined in a study article published in 1938 where it was found that about 30% of the numbers examined with the number B started 1 and 18% with the number 2. Benford's law can be used to detect data anomalies whether from typosal, random chance, or direct manipulation when you don't do a set of numbers that are expected to correspond to the distribution".

#### **2.3.4.5 Ratio analysis:**

The use of operating ratio analysis is one of the most reliable ways to detect fraud in financial statements, as these ratios are more likely to detect fraud when it affects the numerator and denominator in a different proportion than the normal ratio (correctly defined). For example, if the book value of current investments is overestimated as a result of fraudulent gains in respect of non-existent increases in fair value, the current ratio of the economic unit (current assets divided by current liabilities) will be artificially inflated. In the study of Pinkasovitch (2016) he saw "that comparative ratio analysis also allows analysts and auditors to discover discrepancies in the company's financial statements as information related to today's sales in receivables, leverage multipliers and other biometrics can be identified and analyzed for discrepancies".

#### **2.3.4.6 Data matching:**

It is the task of searching for records that point to the same entity and these records usually come from multiple datasets and do not have common entity identifiers but data matching techniques can also be used to detect duplicate records within a single database. Through this, it is clear to us that the investigation of Forensic accounting combines the various skills, tools and techniques available in order to ensure acceptable evidence in the law of the courts, as auditors and legal investigators must be well equipped with Forensic accounting techniques in auditing and investigation processes in order to reduce their exposure to the risks of criminal investigations.



**2.3.4.7 Relative volume factor theorem (RSF):**

Highlights all unusual fluctuations that may be the result of fraud or real errors, as the relative size factor is measured as a ratio from the largest number to the second largest number of the specified group, in practice there are certain limits for each entity such as the seller, customer, employee, etc. as these limits can be determined or analyzed from the available data, and in the event of an anomaly or outside the normal range, it will require further investigation, and here comes the role of this Technology when errors or fraud are suspected in records that fall outside the specified range.

**IV. MATERIALS AND METHODS****1. Study community and steps for preparing the questionnaire**

The current study relied on the applied side of it on the collection and analysis of survey data for the opinions of a sample of employees and academics with competence in a sample of government sector units operating in Najaf Governorate to determine the importance and feasibility of employing Forensic accounting techniques to reduce accounting fraud and identify the most important areas that can be used to solve the problems and weakness of control and auditing systems in government units. The axes and questions of the questionnaire form were formulated based on a set of previous studies such as the study (Chukwunedu & Okoye, 2011) and the study (Gbegi & Adebisi, 2014) and other relevant studies, in addition to that, the questionnaire form was presented and discussed in its initial form on a sample of professors with competence in the field of accounting and statistics for arbitration and to ensure its integrity and the appropriateness of its paragraphs. For the subject of the current study The questionnaire form was formulated in two main axes in accordance with the hypothesis and the main objectives to be achieved in this study and the first axis deals with the most important procedures and areas covered by Forensic accounting techniques through (12) questions. As for the second axis, it deals with Fraudulent methods in government units and measures to reduce them through (12) questions. The Likert five-point scale was relied upon to determine the amount of relative weights to the degree of approval of the study sample on each paragraph of the questionnaire form and analyzed by the statistical program (SPSS.26).

**2. Characteristics of the study sample**

(55) questionnaires were distributed directly to a random sample of the study community for the purpose of obtaining answers to the subject. Of the forms distributed for this purpose, 50 forms were retrieved and 5 could not be retrieved. Table (2) reviews the members of the study sample classified according to academic achievement, place of work, specialization in the certificate, job title and years of service, as shown below.

**Table (2) Classification of the study sample**

	t	Statement	Number	Percentage
Academic achievement	1	PhD or equivalent	9	18%
	2	Master or equivalent	8	16%
	3	Bachelor	25	50%
	4	Diploma	8	16%
Total			50	100%
Workplace	1	Accounts Section	29	58%
	2	Internal Audit Section	14	28%
	3	Accounts Office	1	2%
	4	Faculty Members	6	12%
Total			50	100%
Specialization in Certification	1	Accounting	35	70%
	2	Business Administration	5	10%
	3	Finance & Banking	3	6%
	4	Economy	1	2%
	5	Other Specialty	6	12%
Total			50	100%
Job Title	1	Accountant Assistant	6	12%
	2	Accountant	7	14%
	3	Senior Accountant	6	12%
	4	Assistant Account Manager	16	32%

	5	Account Manager	6	12%
	6	Other	9	18%
Total			50	100%
Years of service	1	Less than 5 years	6	12%
	2	5 - 10 years old	13	26%
	3	11-15 years old	16	32%
	4	16-20 years old	9	18%
	5	From 21 – 25	4	8%
	6	More than 25	2	4%
Total			50	100%

**Source: (preparation of Researchers based on questionnaire information).**

We note from the classification of the sample members in Table (2) that justice and objectivity were taken into account in distributing the questionnaire forms to the sample members in an impartial manner to achieve the desired scientific goal of the subject in question.

### 3. Test of stability and accuracy of the resolution

"Stability is the stability of the scale and not contradicting itself in the sense that it gives the same results with a probability equal to the value of the coefficient as it was reapplied during the same conditions and also measures the degree of credibility of the data by reflecting the results of the sample on the study population". Cronbach's Alpha coefficient was used to measure the degree of stability and truthfulness of the questionnaire questions. The alpha coefficient Cronbach's alpha coefficient expresses the ability of the tool used in scientific study to Change to be measured, and takes a value ranging between zero and one correct, if the value of alpha is equal to the correct one, this means that the stability is complete, but if it is equal to zero, there is no stability of the resolution, but the sincerity of the resolution means "that the scale measures what was set to measure and the validity coefficient is calculated by calculating the root of the stability coefficient, as the value of the alpha coefficient is 0.82110> It is considered a very good value that means that the scale gives the same results with a probability of 0.821 if it is reapplied to the same sample and for all questions, and a numerical notation has been given for each answer for the purpose of calculating the weighted mean and standard deviation of each question in order to know the direction of the answer". The measurement of the stability of the activation of Forensic accounting techniques reached (80) degrees, which is a reasonable percentage that can be relied upon as a coefficient of stability

### 4. Discuss the results and test the study hypothesis

In this part, the results of the statistical analysis of the two axes of the questionnaire will be discussed for the purpose of demonstrating the mechanism of employing Forensic accounting techniques in reducing accounting fraud by knowing the level and degree of response to each of the selected categories of the sample in order to know and determine the percentage of impact or lack thereof for each of the axes and paragraphs of the questionnaire, as the weighted arithmetic mean and standard deviation for each question are extracted and then find the general trend according to the weighted average values.

**Table (3) Estimated Balance According to the Likert Pentagon Scale**

Response	Weighted average	General direction
Completely disagree	From 1 to 1,80	Strongly disagreeing
I don't agree	From 1,81 to 2,60	Disapproval
Neutral	from 2,61 to 3,40	Neutral
Agree	From 3,41 to 4,20	I agree
I completely agree	Greater than 4,20	Strongly agree

#### 4.1 Analysis and interpretation of the paragraphs of the first axis on the most important procedures and areas covered by Forensic accounting techniques

Table (4) shows the analysis of the answers to the opinions of the study sample, represented by the first axis of the form (the most important procedures and areas covered by Forensic accounting techniques) and the results showed the agreement of most of the sample members, as the total arithmetic mean of the answers (4.2) and the standard deviation (0.179) and

this represents a good agreement ratio for the paragraphs of the first axis and paragraph (4) ranked first in terms of the order of relative importance of the rest of the horizonRat, as the answers of most of the opinions of the sample members agreed that the introduction of modern means in Forensic accounting procedures has a major role in reducing accounting fraud practices with an arithmetic mean (4.54) and a standard deviation (0.705), while paragraph (8) ranked last in terms of relative importance and agreement that the need for Forensic accounting techniques is due to the fact that the audit system in the economic unit has failed to detect errors in the administrative and financial system with an arithmetic mean of (3.88). Standard deviation of (0.848).

**Table (4) Respondents' answers about the most important procedures and areas covered by Forensic accounting techniques**

t	Phrase	Five-Scale of Total Sample Answer Level					mean	Standard deviation	Order of relative importance of the paragraph	General direction
		I completely agree	agree	Neutral	I don't agree	I don't agree completely				
		N	N	N	N	N				
		%	%	%	%	%				
1	Forensic accounting requires the use of accounting, auditing and investigation skills to assist with financial and legal matters	23	25	0	1	1	4,36	0,776	3	I completely agree
		46%	50%	0%	2%	2%				
2	Forensic accountability strategies such as Forensic investigation and Forensic audit contribute to resolving allegations of fraudulent activities	12	33	4	0%	1	4,1	0,707	8	Agree
		24%	66%	8%	0%	2%				
3	Forensic accounting procedures help detect accounting and operational fraud and hidden assets	24	22	4	0	0	4,4	0,638	2	I completely agree
		48%	44%	8%	0%	0%				
4	The introduction of modern means in Forensic accounting procedures has a major role in reducing accounting fraud practices	30	19	0	0	1	4,54	0,705	1	I completely agree
		60%	38%	0%	0%	2%				
5	Forensic accounting requires broad and multidisciplinary knowledge such as knowledge of business ethics, business activities, human behavior and the legal system	20	22	6	1	1	4,18	0,873	6	Agree
		40%	44%	12%	2%	2%				
6	Forensic accounting techniques contribute to reducing fraudulent financial disclosure, understanding the legal elements of fraud and other financial crimes	15	32	2	0	1	4,2	0,699	5	Agree
		30%	64%	4%	0%	2%				
7	Forensic accounting techniques require the application of investigative and analytical skills to solve financial problems in a way that meets the standards required by the courts.	13	28	8	0	1	4,04	0,781	10	Agree
		26%	56%	16%	0%	2%				
8	The need for Forensic accounting techniques is due to the fact that the audit system of the economic unit has failed to detect errors in the administrative and financial system.	11	25	12	1	1	3,88	0,848	12	Agree
		22%	50%	24%	2%	2%				
9	Forensic accounting techniques contribute to improving and supporting the internal control and audit system and confirm the independence of the external auditor	11	31	7	0	1	4,02	0,742	11	Agree
		22%	62%	14%	0%	2%				

10	The introduction of Forensic accounting techniques in the audit process contributes to enhancing the chances of detecting accounting fraud	16	28	5	0	1	4,16	0,765	7	Agree
		32%	56%	10%	0%	2%				
11	The use of Forensic accounting techniques in the audit process has a clear impact on increasing the auditor's ability to fill the expectations gap.	11	34	3	1	1	4,06	0,739	9	Agree
		22%	68%	6%	2%	2%				
12	There is a need for Forensic accountants with IT knowledge due to the increase in technology-based tools in committing fraud	24	21	3	1	1	4,32	0,843	4	I completely agree
		48%	42%	6%	2%	2%				
Total arithmetic mean and standard deviation							4,2	0,179		

Source: (preparation of Researchers based on questionnaire information)

#### 4.2 Analysis and interpretation of the paragraphs of the second axis Fraudulent methods in government units and measures to reduce them

Table (5) shows the analysis of the answers to the opinions of the study sample, represented by the second axis of the form (fraudulent methods in government units and measures to reduce them) and the results showed the agreement of most of the sample members, as the total arithmetic mean of the answers (4.2) and the standard deviation (0.359) and this represents a good agreement ratio for the paragraphs of the second axis and paragraph (6) ranked first in terms of the order of relative importance of the rest of the paragraphs, as the answers agreed more opinions of the sample members that the political and economic fluctuations deteriorated Occurring in Iraq has a significant impact on the commission of fraud crimes with an arithmetic mean (4.52) and a standard deviation (0.908), while paragraph (4) ranked last in terms of the order of relative importance and agreement that the pressure and tension facing employees, whether from external or internal factors, contributes to the commission of fraud with an arithmetic mean of (3.56) and a standard deviation of (1,072).

**Table (5) Respondents' Answers about Fraudulent Methods in Government Units and Measures to Reduce Them**

T	Phrase	Five-Scale of Total Sample Answer Level					mean	Standard deviation	Order of relative importance of the paragraph	General direction
		I completely agree	agree	neutral	I don't agree	I don't agree completely.				
		N	N	N	N	N				
		%	%	%	%	%				
1	Accounting fraud can be committed in any case (input, processing or output), but input fraud (false or fraudulent data entry) is the most common.	16	26	6	2	0	4,12	0,773	9	agree
		32%	52%	12%	4%	0%				
2	Most internal fraud is committed by senior and middle management	13	14	14	9	0	3,62	1,066	10	agree
		26%	28%	28%	18%	0%				
3	Opportunity (one of the elements of the fraud triangle) is the most contributing element to the commission of fraudulent activity by employees	6	29	7	5	3	3,6	1,030	11	agree
		12%	58%	14%	10%	6%				
4	The pressure and tension facing employees, whether from external or internal factors, contributes to the commission of fraud.	8	22	14	2	4	3,56	1,072	12	agree
		16%	44%	28%	4%	8%				
5	The weakness of the internal audit system and external control procedures has a significant impact on the commission of fraud crimes in government units	25	21	4	0	0	4,42	0,641	6	I completely agree
		50%	42%	8%	0%	0%				

6	The deteriorating political and economic fluctuations in Iraq have a significant impact on the commission of fraud crimes	34	12	2	0	2	4,52	0,908	1	I completely agree
		68%	24%	4%	0%	4%				
7	Detecting and avoiding fraud is everyone's responsibility as it affects the reputation of the economic unit.	25	18	5	2	0	4,32	0,819	7	I completely agree
		50%	36%	10%	4%	0%				
8	The need for the economic unit to take proactive steps towards understanding fraud by detecting the hidden points of fraud and taking the necessary measures to deter them	25	23	2	0	0	4,46	0,578	3	I completely agree
		50%	46%	4%	0%	0%				
9	Awareness programs and spreading a culture of zero tolerance for fraud risks throughout the economic unit help to understand that fraud is everyone's problem.	29	16	5	0	0	4,48	0,677	2	I completely agree
		58%	32%	10%	0%	0%				
10	One of the most common measures taken by the Economic Unit to reduce the increasing opportunities for fraud is to establish strict controls through measures that include separation of powers and codes of conduct and a risk assessment process.	19	27	4	0	0	4,3	0,614	8	agree
		38%	54%	8%	0%	0%				
11	One of the steps taken by the Economic Unit to alleviate stress is to promote a positive environment through training and development and support an open door policy by understanding employee behavior.	26	20	4	0	0	4,44	0,643	4	I completely agree
		52%	40%	8%	0%	0%				
12	There is a need to devise new and more effective methods to reduce the risk of fraud in light of the changing business environment and technological development.	27	18	5	0	0	4,44	0,674	5	I completely agree
		54%	36%	10%	0%	0%				
Total arithmetic mean and standard deviation							4,2	0,359		

Source (preparation of Researchers based on questionnaire information)

### 4.3 Testing the results of study variables and hypotheses

#### 4.3.1 Correlation analysis

Hypothesis I: "There is a statistically significant relationship between Forensic accounting techniques and accounting fraud".

To test the above hypothesis, the Researchers uses the statistical program (SPSS.26) and uses the (Pearson Correlation) test to test the strength and direction of the relationship between the independent variable (Forensic accounting techniques) and the dependent variable (accounting fraud);) ) : -

Table (6) Test - Pearson Correlation for the first hypothesis

		Accounting fraud
Forensic Accounting Techniques	Pearson Correlation	-0.595
	Sig. (2-tailed)	0.041

Source: (prepared by Researchers based on SPSS.26)

The test results for the Pearson Correlation coefficient showed an inverse relationship between the variables of Forensic accounting techniques and accounting fraud with a correlation coefficient of (-0.595) and a significant significance of (0.041) less than (0.05). Therefore, the first study hypothesis is accepted, which states that "there is a statistically significant relationship between Forensic accounting techniques and accounting fraud.".

### 4.3.2 Regression analysis

Second hypothesis: "There is a statistically significant effect of Forensic accounting techniques in reducing accounting fraud"

To test the above hypothesis, the Researchers uses the statistical program (SPSS.26) and uses simple linear regression analysis to predict the impact of the independent variable (Forensic accounting techniques) on the dependent variable (accounting fraud). The table below shows the results of simple linear regression analysis with an explanation of the most important results) .

**Table (7) Results of Simple Linear Regression Test for the Second Hypothesis**

R			0.595
R Square			0.354
F			5.478
Moral significance			0.041
Prototype	B	Calculated T	Moral significance
Constant	9.180	4.302	0 002
Forensic Accounting Techniques	-1.191	-2.341	0 .041

**Source: (prepared by Researchers based on SPSS.26)**

Table (7) shows the value of the correlation coefficient (R) between the independent variable (Forensic accounting techniques) and the dependent variable (accounting fraud) of (.59.5%), which is a good value that shows the strength of the relationship between the independent variable and the dependent variable; as the table shows, (R Square) is equal to (.3540), meaning that the independent variable explains (35.4%) of the variance or variables that affect the dependent variable (accounting fraud) and that the remaining percentage is due to other reasons, including random error. The above table also confirms that the regression is statistically significant, as it reached (F) calculated (5.478), which is greater than the tabular (4.96) and a significant level of (0.410) less than (0.05). Therefore, the second hypothesis is accepted, which states that "there is a statistically significant effect of Forensic accounting techniques in reducing accounting fraud." The above table also shows that the independent variable (Forensic accounting techniques) has a negative impact on the dependent variable (accounting fraud) with a regression coefficient of (-1.191) and a significant level of (0.041) less than (0.05), which means that any increase in the level of Forensic accounting techniques by one degree is offset by a decrease in accounting fraud by (-1.191).

## V. CONCLUSIONS

- 1- Forensic accountability emerged as a result of the increase in cases of corruption, fraud and financial scandals in many countries, especially countries that suffer from political and economic fluctuations.
- 2- Forensic accounting has an important role in reducing cases of corruption and fraud as it has modern and advanced techniques and methods in detecting them.
- 3- Forensic accounting is more proactive than the traditional audit in the process of examining accounting records as it does not assume the integrity of management in all circumstances, which makes it closer to detecting fraud.
- 4- The existence of an inverse relationship between the variables of Forensic accounting techniques and accounting fraud with a correlation coefficient of (- 0.595) and a significant significance of (0.041 ) less than (0.05))
- 5- There is a negative impact of Forensic accounting techniques in reducing accounting fraud with a regression coefficient of (-1.191) and a significant level of (.0410) less than (0.05), which means that any increase in the level of Forensic accounting techniques by one degree is offset by a decrease in accounting fraud by (- 1.191).

## VI. RECOMMENDATIONS

- 1- The need to benefit from the experiences of developed countries on corruption and fraud cases, especially activating the role of Forensic accounting techniques by establishing an independent professional body concerned with Forensic accounting similar to those countries.



- 2- The need to coordinate between the procedures of Forensic accounting and traditional auditing in order to activate their role in the investigation of Forensic cases related to financial matters.
- 3- The necessity of coordination between Forensic accounting procedures and the judiciary in order to achieve an effective mechanism that works to reduce the risks of fraud.
- 4- The need for government units to conduct periodic fraud risk assessments, as well as adopting an institutional culture that is more flexible and coherent to face fraud risks.
- 5- The need for government units to take proactive measures to confront the risks of fraud in order to enhance the effectiveness of defense lines and build strong foundations to reduce and deter it.

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