Paper on

The Role Of Supreme Audit Institutions In Developing Risk Management Systems In Government Entities

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Abstract

The research aims to study and analyze the role of Supreme Audit Institutions (SAIs) in improving and developing risk management systems in government entities. This can be achieved by presenting the general framework of risk management systems in government entities, with regards to its components, work cycle, the principles of risk management, and the challenges and difficulties that these entities face in establishing and developing risk management. Also By evaluating the extent to which the adoption of SAIs to the risk-based audit approach improves the quality of the audit process, which will be reflected on the development of risk management systems in government entities and their impact to deter the risks of financial corruption, fraud, and deceit. As well as highlighting the most important factors for the success of the Supreme Audit Institutions in carrying out this role, and the difficulties limiting the role of these SAIs in developing risk management systems in government entities.

To achieve the main objective of the study, a questionnaire was prepared and analyzed using the Statistical Package for the Social Sciences (SPSS) and other statistical methods such as descriptive statistical analysis, Cronbach's Alpha test, mean, standard deviation, One-sample Test, Kruskal-Wallis Test, and Chi-square.

The field study revealed that there were no significant differences among the majority of the sample members' opinions regarding the importance of the role of the Supreme Audit Institutions in improving and developing risk management systems in government entities. Although these opinions agreed on the existence of some difficulties that hinder this role, but they highly agreed that there are a

set of success factors that the SAIs can take into consideration to improve the quality of this role.

The research concluded with a set of recommendations, the most important of which are: the importance to establish an integrated framework for risk management in order to avoid crises and increase the performance efficiency in government entities; The need for where SAIs to apply international auditing standards, INTOSAI standards, and adhere to professional codes of conduct; SAIs should organize training courses and scientific seminars on how to review and evaluate risk management systems in government entities and focus on using the risk-based audit approach; Improving the role of Supreme Audit Institutions in enhancing the effectiveness of audit system procedures to help entities reduce the risks of corruption and fraud; sound coordination and cooperation with internal audit; SAIs' should use of Information and Communications Technology and data analysis; in addition to exchanging experiences with other institutions in the field of auditing risk management systems in government entities.

Keywords: Supreme Audit Institutions, Risk Management Systems, Risk-Based Audit.

Table of Contents

List of Tables

List of Figures

Chapter One

Chapter One

General Framework of Research and Previous Studies

1/1 General Framework of the Research:

1/1/1 Introduction:

Government entities face many risks, in addition to major challenges on how to manage these risks. The matter that shows the importance of establishing an integrated and advanced system of risk management systems based on basic items, which are: a sound audit environment (It includes defining authorities and responsibilities, a code of ethics, compliance to ethical and professional conduct, and the level of management involvement in audit), internal control systems, effective internal audit, communications and information, and follow-up. While, the Supreme Audit Institutions seek to achieve greater efficiency and effectiveness in performing the audit tasks assigned to them, and the importance of the significant role of the SAIs in evaluating the extent of efficiency, effectiveness of risk management system in many audited entitles.

Government entities, like other institutions, are exposed to many risks, including financial, operational, legal, informational, and other risks. Therefore, it was deemed necessary to establish a risk management department in such type of institution (Abdal Nasser Mohamed, 2013: 43). Technological development has also led to a continuous increase to the incidences of risks that entities and their activities are exposed to, making them more vulnerable to risks. This reflects the importance of risk department in keeping exposure to risks within safe standards and levels by identifying and analyzing the fundamental causes leading to them, hedging against them, and early preparing to confront and reduce them (Salah Nouri, 2018: 59).

Risk management has received widespread attention in recent years and has was included on the agenda of both the governmental and private sectors. Especially in light of the growing number of problems and obstacles, such as the increase in errors, fraud and manipulation, and the corruption that taints some of their operations, which requires enhancing the role of SAIs in assessing risks in these entities with the aim of identifying weaknesses and shortcomings in managing these risks and working to provide the necessary recommendations to mitigate their impacts, and thus reach solutions to the problems and obstacles to performance in government entities.

Some studies have affirmed that the reason behind the failure of economic units is due to the lack of risk department that plans and analyzes risks and develops strategies to confront those risks (Youssef Salah, 2013: 119).

Supreme Audit Institutions are assigned to identifying, analyzing and assessing risks by understanding the environment and activities of government entities, including internal control, risk assessment procedures and related activities. Which greatly helps in achieving the main objective of the audit process carried out by these institutions, by enabling the auditor to express opinion on the financial statements, and to provide these entities with reports on the compliance to internal control systems, risk analysis and the extent of compliance with legal requirements. May these reports, with their observations and recommendations, are considered one of the factors in improving and developing risk management systems in government entities.

Regarding of the spread of risks of various types, it is necessary to enhance the use of the risk-based audit approach in a way that contributes to enhancing and supporting performance and activating and evaluating risk management in the audited entitles with the aim of working to mitigate the impact of the effects of these risks and performance obstacles in those entities. This is achieved by

developing audit procedures and methods and practicing its operations in a manner consistent with the needs. Therefore using the risk-based audit approach will lead to improving the level of audit quality, which will be reflected in improving the entity's financial performance (Nourhan Al-Sayed, 2018: 110).

Risk-based auditing aims to improve the quality and effectiveness of audit operations by significantly changing auditing practices. Risk-based auditing indicates that the greater the risks in an area, the greater the focus on the auditing process. This risk-based approach also helps auditors in planning the auditing process in order to significantly contribute in achieving effective governance, risk management and more realistic control (Sastra, C., et al., 2018: 1581). This approach contributes to reaching more logical findings and achieving the audit process' objective. Therefore, the adoption of the risk-based audit approach by the Supreme Audit Institutions will significantly contribute to supporting and developing risk management systems in a way that achieves added value for the audited entities and all stakeholders.

1/1/2 - The Research Problem:

In view of the digital transformation that government agencies have witnessed and the trend towards implementing what is called e-government, and the resulting risks increase in government entities, and regarding the nature of the ongoing fact of challenges they face and the reliance of those entities in achieving their goals in an efficient and effective performance of their financial and administrative systems, and as a result of the increasing demand of community regarding attaching importance to accountability, disclosure and transparency in the transactions conducted by these entities, including knowing and following up on the resources of their revenues and expenses, the quality and level of services they provide, and disclosing the necessary information about them (Kamal Abdel Salam, 2014), all of this burden on the Supreme Audit

Institutions of identifying and evaluating those risks and reporting on the efficiency and effectiveness of their management by those entities.

The risk management approach in field of audit is referred to as a continuous process that begins before contracting for the audit process and ends with the preparation of the audit report. If the auditor agrees to the contract, he has accepted to bear a certain level of risk and then uses all methods that may help him reduce the possibility of being exposed to those risks, in addition to what the auditor performs in terms of compliance tests and basic tests aimed at reducing the possibility of the existence of significant distortions in the financial data (Shahanda Adel, 2013: 79).

Controversy often arises- in times of crises and the prevailing of corruption, fraud and deception risks- with regard to risks and their management in government entities at the internal level, including addressing the role of management and other parties in monitoring and following-up on risks. This controversy has extended to the role of the Supreme Audit Institutions in assessing such risks and the effectiveness of their management, especially after most of those institutions adopted the risk-based audit approach. This debate did not stop at the previous risks only, but extended to include all business risks, including strategic risks, operational risks, technological progress risks, governance risks, and rapid changes in management methods and systems, which led to an increase in the size and complexity of the risks facing these entities.

In light of the spread of financial corruption risks in some government entities and the weakness of internal control systems and their failure to achieve their objectives in those agencies, the need for the development of risk management systems by the Supreme Audit Institutions appears so that they can limit these risks and reduce them to the lowest possible level. The role of those institutions

in developing internal control systems cannot be overlooked, as it reflects the efficiency and effectiveness of risk management systems.

The International Auditing Standards Committee gave a great attention to risks and their assessment where it has issued many standards in this regard (Ahmed Abdel Majeed, 2015: 60). Likewise, the International Organization of Supreme Audit Institutions(INTOSAI) has issued INTOSAI Standard for Supreme Audit Institution (ISSAI 1315), which is concerned with assessing the risks of material misstatements by reaching an understanding of the entity and its environment. And INTOSAI Standard (ISSAI 1330), which clarified that the auditor is required to develop control procedures in response to these risks and other related standards.

Based on the above, the research problem can be summarized as follows: Although many scientific and professional organizations emphasized on the importance of Supreme Audit Institutions role in improving and developing risk management systems in government entities, this role depends on many factors and faces many challenges, The main problem is how to effectively alleviate the audit role from being a mere financial oversight activity to a broader level of improving the effectiveness and efficiency of risk management. In addition to the lack of a clear role of Supreme Audit Institutions that can play in supporting and developing risk management systems in government entities. This enhanced the researcher to shed light on the role of the Supreme Audit Institutions in light of adopting the risk-based audit approach and the requirements for the success of that role in developing risk management systems in government entities. The research problem can be summarized by attempting to answer the following questions:

- What are the risks facing government entities and how to manage, respond to and address them?

- What is the general framework for risk management systems in government entities and their risk management stages?
- What are the challenges and difficulties facing risk management systems in government entities?
- Does the adoption of the risk-based audit approach by Supreme Audit Institutions contribute to the development of risk management systems in audited entities?
- Does the compliance of Supreme Audit Institutions to international and professional auditing standards lead to increased audit effectiveness on risk management in government entities?
- What is the strategic role of Supreme Audit Institutions in developing risk management systems in government entities?
- What are the difficulties facing the Supreme Audit Institutions in carrying out their role in increasing the efficiency and effectiveness of risk management systems in government entities?

1/1/3 Aim of The Research

In light of the research problem, the main objective of the research is to study the importance of Supreme Audit Institutions role in improving and developing risk management systems in government entities through:

- Analyzing and evaluating of studies and research in the field of risk management in government entities and Supreme Audit Institutions role in identifying, assessing and managing risks.
- Study and analyze of the concept, principles and general framework of risk management systems in government entities.

- Reveal the impact of applying the risk-based auditing approach on the risk management systems of government entities.
- Study and analyze the factors affecting the strategic role of Supreme Audit Institutions in improving and developing risk management systems in government entities.
- Explaining the impact of the Supreme Audit Institutions'' commitment to auditing standards on the quality of performance, which is reflected in the efficiency and effectiveness of the risk management systems of the entities subject to audit.

1/1/4 Importance of Research

The importance of the research arise from that it focus on the most important vital areas related to the attempt to improve and develop risk management in government agencies through the audit mandate of Supreme Audit Institutions. This can be explained as follows:

- **Scientific Importance of Research**

• The research has a scientific importance due to the scarcity of research and references that focus on studying the role of Supreme Audit Institutions in improving and developing the performance of risk management systems in government entities.

• Enriching accounting literature and thought with information and knowledge about the role of Supreme Audit Institutions in developing risk management systems in government entities.

- **Practical Importance of The Research:**

The practical importance of the research appears in:

• The increasing need to fulfill credibility with regards to efficiency and integrity of government agencies and the increasing need to support and develop risk

management in these entities, as it has become one of the most important factors behind the success of these entities.

- This research is considered a step on the way to benefiting from the capabilities of the Supreme Audit Institutions in the field of risk-based auditing in general, and in moving towards their role in performing continuous improvement of risk management in government entities.
- The auditor's increasing need for an accurate risk assessment, especially audit risks, when preparing and planning the audit process based on risk, due to the increasing amount of risks facing the audited entities.
- Identifying the essentials of success of Supreme Audit Institutions in improving and developing risk management systems in government entities, as well as the difficulties and challenges they face in this regard.
- We hope that the research outcomes will help the Supreme Audit Institutions members to identify and evaluate the risks to which the audited entities are exposed to , and to take them into consideration when planning, implementing and reporting on the audit process in light of international and professional auditing standards, which will help improve the role of the Supreme Audit Institutions in the field of developing risk management systems.

1/1/5 Research Hypotheses

In light of the research questions and through reviewing the literature on risk management and the role of Supreme Audit Institutions, the following hypotheses can be formulated:

- The use of the risk-based audit approach by Supreme Audit Institutions does not affect their role in developing risk management systems in government entities.

- The compliance of Supreme Audit Institutions to international auditing standards and INTOSAI standards will not be reflected in their role in developing risk department in government entities.

-There is no relation between providing success requirements of the Supreme Audit Institutions and the role of these institutions in developing risk management systems in government entities.

- No difficulties exist that prevent the Supreme Audit Institutions from performing their role in developing risk management systems in government entities.

1/1/6 Research Methodology

To achieve the study objectives, the researcher relies on the inductive approach to collect information related to the main elements of the study, analyze and interpret it with the aim of building its theoretical framework, by relying on the accounting and auditing literature and previous studies related to the research topic regarding the role of the Supreme Audit Institutions in developing risk management systems in government entities, to be aware of what those studies have reached and what the current research can add to those studies. The researcher also relies on the deductive approach to examine the study hypotheses by trying to prepare a questionnaire to conclude the results.

1/1/7 Research Limits

The study is limited to focusing on risk management systems in government entities, and also on the role of supervisory bodies in developing these systems. The study and analysis of auditing standards is also limited to standards related to risk management.

1/1/8 Research Plan

In light of the research problem, importance and objectives, the research can be divided as follows:

Chapter One: General framework of research and previous studies.

Chapter Two: Risk management systems in government entities.

Chapter Three: Adoption of the risk-based audit approach by Supreme Audit Institutions.

Chapter Four: The strategic role of Supreme Audit Institutions in developing risk management systems in government entities

Chapter Five: Field Study

Outcomes and recommendations

References

1/2 Previous Studies

Previous studies related to the research topic will be reviewed as follows:

1/2/1 Previous Studies Related to Risk Management Systems in Government Entities

1/2/1/1 Study: Hoffman, Mark, A., 2008

The study revealed the ability of the government sector in the United States of America to apply the concept of project risk management, and concluded that there are many challenges that may hinder the application of this concept in the government sector, the most important of which are: the characteristics of the government sector, absence of an agreement on a specific concept for risk

management, and the sector's inability to quickly respond to changes occurring in the surrounding environment.

1/2/1/2 Study: Harris, P. et al., 2011

The study aimed to identify a set of steps to help management create a risk management system in the entity aiming to achieve continuous improvement, by providing data that helps administration to assess the risks in the entity because shareholders need assurances from management that there are necessary internal control systems to protect the entity from business risks as well as fraud.

The study reached the following outcomes: entities must adopt an risk management system to perform their duties and provide the most effective response to risks, because the entity's risk management system helps in the process of continuous improvement and the identifying and responding to risks. Also establishing a comprehensive risk management system is an effective manner of identifying important aspects of the entity's operations that may affect its continuity.

1/2/1/3 Study: Ershadi, M., et al., 2016

This study aimed to emphasize on risk management is the main function of the mega projects operating companies, and its goal is to create value and profitability for them. In recent years, many of these mega projects operating companies have established risk management systems to measure and manage all the complex risks of these projects. The study presented a proposed framework for evaluating the performance of the risk management system in order to provide a theoretical basis in this field by conducting interviews with risk management experts, reviewing their ideas, and integrating them into this study.

1/2/1/4 Study: Abdallah Al-Otaibi, 2016

The study aimed to clarify the objectives and components of entity's risk management, the challenges and opportunities associated with it, as well as to develop a conceptual framework for the entity's risk management process. The study presented the theoretical framework for risk management, including: identifying and describing major risks, developing risk models, monitoring the risk management process, ensuring the continuity of these risks, transferring, covering and insuring these risks, measuring performance, in addition to the benefits of risk diversification.

1/2/2 Previous Studies on Risk-Based Auditing

1/2/2/1 Study: Sameh Mohamed El-Sayed, 2015

The study aimed to know the extent to which audit offices apply the risk-based audit approach. The results of this study indicated that applying the risk-based audit approach leads to reducing risks, which leads to improving the quality of the audit process, which leads to improving the quality of accounting information contained in financial reports, reducing reporting errors, and leading to improving the performance of the entity and increasing the creditability of data and the degree of reliability on financial reports by their users.

1/2/2/2 Study: Nourhan El-Sayed, 2018

The study aimed to clarify the impact of activating the use of the risk-based audit approach according to the COSO framework in improving the level of audit quality and its impact on the efficiency of financial performance, by trying to develop an integrated framework to activate the use of the risk-based audit approach so that it helps to improve the effectiveness of the performance of the comprehensive risk

management by identifying, evaluating and responding to risks in order to manage them and mitigate their effects until they become within acceptable levels.

The study reached many outcomes including: The audit process plays an important role in managing the various risks facing the entity, through evaluating the adequacy and effectiveness of risk monitoring and identification systems. The study also discovered the existence of an indirect positive relation between the risk-based audit approach and the level of financial performance efficiency in the entity through the quality of the audit process.

1/2/2/3 Study: Le, T., et al., 2022

The study handled the risk-based approach and audit quality using the structural equation model. The study aimed to identify the factors affecting the risk-based audit approach and the quality of the audit process in Vietnam, and to investigate the relation between this approach and the quality of the audit process in audit firms in Vietnam. The study found that there is a significant positive correlation between auditor competence and professional pressure on the auditor, support from information technology, competitiveness capacity of audit firms, audit fees, client risks, application of risk-based audit and audit quality. There is also a strong relation between client risks and the use of information technology on audit quality.

1/2/2/4 Study: Amal Abdallah, 2023

The study aimed to identify the impact of integration between enterprise resource planning (ERP) and the risk-based audit approach on the quality of external audit of companies enlisted on the Kuwait Stock Exchange. The study reached several outcomes, the most important of which is the presence of a positive and statistically significant impact of integration between enterprise resource planning

(ERP) and risk-based audit on the quality of external audit. The study recommended the need to pay special attention to training and qualifying auditors on the risk-based auditing method to provide financial reports that meet the needs of users.

1/2/3 Previous Studies Related To The Role Of Supreme Audit Institutions In Developing Risk Management Systems In Government Entities

1/2/3/1 Study: Radwa Ahmed 2011

The study aimed to clarify the role of the internal and external audit profession in managing performance risks in the government services sector, while pointing out the challenges that the profession may face when doing so, and then identifying the necessary essentials for the audit profession to play a positive role in auditing performance risk management in the government services sector.

The study reached the following results: Risk management is the responsibility of all government sector units to ensure the efficient and effective utilization of available resources. The government sector and the business sector agree on some matters related to risk management and disagree on other, Internal audit is considered a strategic tool in government sector governance and rectifying financial management, Finally, there must be joint cooperation between the Accountability State Authority and government administrative units regarding risk management.

1/2/3/2 The Study: Of Schrock, C., 2015

The study aimed to clarify the main function of the auditor, which is to evaluate the efficiency and effectiveness of the main operations within the entity, by focusing on auditing critical operations that help in managing risks in a manner consistent with management expectations. The research showed that the auditor must conduct an independent evaluation of the efficiency and effectiveness of risk

management operations, and to achieve this, the auditor must have a clear understanding of what the process is trying to achieve, The study also showed that it is possible to divide the risk management audit into two parts, first: the strategic risk management audit, where the auditor focuses on the risks associated with designing good strategies, and second: the performance risk management audit, where the auditor focuses on the risks associated with implementing these strategies.

1/2/3/3 the Study: of Hani Khalil Farag, 2015

The study aimed to clarify the impact of the performance audit approach on the efficiency of auditors at the Accountability State Authority in detecting and reporting on the risks of financial corruption in government units. The research confirmed that the auditor of the Accountability State Authority is not responsible for preventing the risks of error and fraud, but he must exercise appropriate professional care, which requires him to study and evaluate the internal control structure, determine the necessary procedures and tests and their timing, the work program of the auditor of the ASA is comprehensive and includes additional procedures if a material distortion is expected in the books. And his responsibility's limited in obtaining reasonable assurance that the financial statements in all its important as pacts are free from material dictation whether due to the risks of fraud manipulation or errors.

1/2/3/4 Study: Ali Ibrahim Shardia 2018

The study mainly aimed to analyze international auditing standards and their implications on the development of enterprise risk management. The study analyzed international auditing standards and the efforts of professional bodies regarding the development of risk management.

The study have reached several results, the most important that: there is a strong elation between auditing standards and the detection of fraud and errors in financial statements, as the standards provide general trends that help auditing to carry out has work in a way that helps him to detect fraud and errors. The Commitment of professional performance standards contributes in improving the performance of risk management. The study also concluded that the application of international auditing standards leads to the development of enterprise risk management.

1/2/3/5 Study: Walid Ibrahim, 2018

The study aimed to analyze the role of the Supreme Audit Institutions in developing control systems to reduce financial corruption in government units, by evaluating the efficiency of the performance of internal control systems in reducing the spread of financial corruption practices in government units, as well as showing the challenges and obstacles that affect the development of control systems and how to overcome them by The Supreme Audit Institutions.

The study continued that the most important objectives of The Supreme Audit Institutions are to develop the control systems in government entities to reduce fraud, theft, embezzlement and misuse of the resources of those entities.

1/2/4 Analysis of previous studies and identifying the of the research gap:

First: With regard to studies that dealt with risk management systems in the government sector, it is clear that:

- Some studies have agreed that there are many challenges that may hinder the implementation of risk management systems in government entities, including: the nature of the government sector, the lack of agreement on a unified concept for risk management, and the sector's inability to respond quickly to changes in the surrounding environment.

- One of the objectives of risk management is to add value to the entity, especially entities supervising giant projects, as it provides identification, measurement and management of all complicated risks in those projects.
- Many studies have addressed the components of the theoretical framework of risk management systems in terms of: identifying and describing risks, controlling the risk management process, transferring and covering those risks, and its measurement.

Second: With regard to studies that dealt with risk-based audit, it is clear that:

- Studies have confirmed the effective role of the risk-based audit approach in improving audit quality, and its reflection on the efficiency of financial performance and improving the effectiveness of risk management performance in government entities.
- Applying the risk-based audit approach reduces the risks to which the entity is exposed and is also reflected in the quality of financial data, reducing errors and improving the performance of entities. This leads to increased confidence in the data and a degree of reliance on its financial reports.

Third: studies that addressed the role of Supreme Audit Institutions in developing risk management systems in government entities, it is clear that:

- Most studies agreed that there is a positive impact of identifying and assessing audit risks on improving the quality of the audit report, which requires the auditor to measure and assess audit risks continuously.
- Most studies agree that the auditing profession faces many challenges in government entities when auditing risk management systems and that there

must be cooperation between the audit institution and government administrative units regarding risk management.

- Some studies have confirmed that risk management is the responsibility of all departments within the government entity, ensuring the efficient use of available resources and reducing risks to an acceptable level.
- Some studies have indicated that adherence to professional performance standards contributes in improving risk management performance, as auditing helps detect existing fraud and deception. It also stressed that the auditor is not responsible for preventing fraud and deception risks but must exercise appropriate professional care.
- Some studies have concluded that one of the most important roles of the Supreme Audit Institutions are their role in developing internal control systems by evaluating the extent of their impact on reducing the spread of financial corruption risks in government entities and the misuse of their resources.

Fourth: The most important thing that distinguishes this study from previous studies

Previous studies have achieved important results in the field of government risk management and in the field of risk-based audit. However, there are some research gaps in this field, which distinguish this study:

- There is a scarcity of research that addresses the impact and role of Supreme Audit Institutions in improving and developing risk management systems in government entities, which has implications for increasing the quality of performance of government entities, and also highlights the effective role of supreme institutions in combating the risks of fraud, deception and corruption.

- Explaining the extent to which the risk-based audit approach is compatible with dealing with the challenges facing the auditing profession when carrying out its role in auditing and evaluating risk management in government entities.

- Study and analyze the impact of the commitment of Supreme Audit Institutions to international and professional auditing standards on the development of risk management systems.

- Explaining the elements of success of the Supreme Audit Institutions in developing risk management systems in government entities, and the challenges and difficulties facing the institutions in this area.

Chapter Two

Chapter Two

Risk management systems in government entities

Risks are considered one of the most important challenges facing government entities. These risks arise as a result of uncertainty, environmental changes, and rapid economic and technological developments. These risks constitute a difficult challenge that must be addressed, or its effects must be minimized by having an effective risk management system.

2/1 What is risk management, its objectives and its importance in government entities?

Government entities are exposed to many risks that may affect their ability to perform their functions and provide their services. Hence, the importance of risk management in helping these entities to deal with certain or potential risks in a way that ensures they achieve their goals.

2/1/1 The concept of risks in government entities

There are many definitions of risks in management and accounting literature:

- The Institute of Internal Auditors defined risks as “the possibility of an event occurring that may have a negative impact on the achievement of objectives. Risks are measured in terms of their impact and likelihood of occurrence” (The Institute of Internal Auditors, 2010:38).
- The COSO Committee defined risk as “the probability that an event will occur and adversely affect the achievement of objectives.”
- The International Organization for Standardization (ISO) defined risk as “the effect of uncertainty on the achievement of objectives. effect is defined as the positive (opportunities) or negative (threats) deviation from expectations. Uncertainty is defined as the lack of information related to

understanding or knowing an event, its likelihood of occurrence, and its consequences" (ISO31000, 2018).

2/1/2The concept of risk management in government entities

The application of the concept of risk management is receiving increasing attention from many sectors, whether governmental or non-governmental, and many studies have focused on defining risk management:

- Risk management has been defined as "a situation involving the possibility of harm occurring in terms of human injury or ill health or damage to the environment, facilities or infrastructure due to environmental factors or human errors." (Sila, k.,2018:13).
- The concept of risk management also refers to "the methods and processes used by facilities to manage any threats and exploit opportunities in order to achieve their goals within pre-determined levels of risk tolerance" (Majed Al-Bahlal et al., 2021: 23).
- While the Institute of Internal Auditors (IIA) views risk management as "a coherent structure of ongoing processes at the unit level as a whole, to identify, evaluate and report on responses, opportunities and threats that affect the achievement of objectives" (Nourhan El-Sayed, 2018: 8).

2/1/3The importance of risk management systems in government entities

Risk management systems in the government sector are more complicated than in the business sector, for the following reasons (Radwa Ahmed Maher, 2011):

- Nature of risks: The government sector is exposed to the same risks as the private sector.

- Reasons for facing risks: The government sector plays a unique role in risk management through its work to manage and protect society against the risks and disasters to which it is exposed.
- Flexibility in facing risks: The government sector has less flexibility in identifying the risks that will be taken to preventive measures, and the government is the first and last responsible for preparing to confront and deal with illegal activities and natural and industrial disasters.

Among the most important benefits that risk management systems can achieve are the following (Nourhan Al-Sayed, 2018: 118, Risk Assessment Guide, 2019: 10, Israa Abdelsaheb and others, 2021: 18, ISO31000, 2018):

- Protecting the reputation and public image of the government entities in front of society and service recipients.
- Enhancing the continuous improvement of the entity's operations to ensure that it achieves excellence in performance.
- Improving planning and performance management processes, which in turn enables the entity to provide its services effectively.
- Increase the ability of entities to make effective decisions regarding managing potential negative impacts resulting from risks and exploiting potential opportunities.
- Increase the culture and awareness of employees regarding their role in identifying and reducing risks and enhance cooperation between different departments within government entities.
- Improving the effectiveness of governance activities and enhancing mandatory and voluntary reporting by government entities.

2/1/4 Objectives of risk management systems in government entities

With the increasing challenges facing government entities, it is necessary for them to adopt a risk management plan as part of their comprehensive strategy, which is originally based on an approach on analyzing the internal environment for the elements of strengths and weaknesses and analyzing the external environment to identify opportunities and threats. Accordingly, the objectives of risk management systems can be defined as follows (Majid Al-Bahlal et al., 2021: 23, Ahmed Musbah, 2019: 336, Baida Sattar et al., 2018: 7):

- Establishing the concept of risk management in daily activities, decision-making processes, and in the culture of entities and their employees.
- Reducing threats and maximizing opportunities, which leads to an increased likelihood of achieving the entities strategic objectives.
- Protecting government assets and focusing on allocating their resources efficiently.
- Provide a comprehensive framework for the objectives, principles, methodology and tasks of risk management and how to address expected risks.
- Developing the information base, tools and methods for analysis, interpretation and prediction of the expected risks that the entity may face, evaluating them and determining programs and procedures for dealing with them.
- Developing emergency plans in government entities to confront expected disasters and crises.
- Identify, assess and deal with risks proactively and preventively.
- Creating a common vision and a unified language that enables effective communication in the risk management process.

2/1/5 The role of risk management systems in improving the performance of government entities

Risk management systems contribute significantly to improving the performance of departments within government entities, and this role is evident in the following points (Bourn. J, Op., 2000:37):

- **Providing the best services:** There are several risks associated with government entities providing their services, such as delays in providing services, or services being of poor quality. Here, risk management can help these departments deal with these risks.
- **Dealing with others:** The changing environment in which government entities operate results in economic, social and technological problems. Here, the importance of risk management appears in assessing the main variables that may affect the resources owned by the entities, by developing emergency plans to deal with these variables.
- **Efficient use of resources:** The problem of scarcity and limited resources is one of the most important difficulties and risks facing government entities. Therefore, risk management must identify the resources which most exposed to risks and develop the necessary plans to increase the efficiency of their use.
- **Better project management:** Government entities may face the risk of delayed project delivery or exceeding the budgeted figures. Risk management can help identify and assess risks at the feasibility study stage of these projects.
- **Reducing fraud and corruption:** Government entities need to evaluate internal control and oversight procedures to reduce the risks of fraud and corruption. Effective risk management can provide regular assessment of

performance measures and processes to help prevent, detect or address these risks.

- **Innovation:** The inability to innovate or provide it is one of the risks that government entities suffer from. Here, risk management requires an assessment of a set of options in light of potential opportunities to improve service delivery methods, and to provide a framework for adopting more innovative methods and managing the risks associated with them.

2/2 International standards used in risk management systems

Many standards have been developed for risk management systems, but the following standards are the most widely used (Majed Al-Bahlal et al., 2021: 24):

- **Australian Standard AS/NZS 4360:1999.**
- **Series of standards: ISO 27000 – ISO 31000 – ISO 22301.**
- **COSO Committee Publications:** The Committee focused on risk assessment and issued an integrated framework for risk management.
- **Basel Committee decisions:** related to banking risk management and how to address and reduce credit risks .
- **British Risk Standard** (IRM: 2002).

2/3 Principles of risk management systems in government entities

According to the international standard for risk management ISO 31000, the general principles of risk management systems are as follows (Guidelines for Building an Enterprise Risk System, 2022: 7):

- **Integrated:** Risk management is an integral part of all organizational activities.
- **Structured and comprehensive:** Risk management is a systematic process that contributes to achieving consistent and comparable results.

- **Customized**: The risk management framework and process change and evolves in line with the organization's external and internal circumstances and in line with its objectives.
- **Inclusive**: Appropriate and timely engagement of stakeholders enables their knowledge, perspectives and perceptions to be considered. This improves awareness of the importance of risk management in organizations.
- **Dynamic**: Risks can appear, change or disappear, so risk management must anticipate, detect, recognize and respond to these changes and events in an appropriate and timely manner.
- **Best available information**: Risk management input is based on historical and current information, as well as on future expectations.
- **Human and cultural factors**: Human behavior and culture greatly influence all aspects of risk management at all levels and stages.
- **Continual improvement**: Risk management is continually improved through learning and experience.

Figure (2-1) Risk management principles according to ISO 31000:2018

2/4 Challenges and difficulties facing risk management systems in government entities

Risk management systems face many challenges and difficulties, perhaps the most important of which are the following (Abdallah Al-Otaibi, 2016: 377): Human judgment in risk management can be wrong in making decisions related to risks and building control, and the return and cost in decisions to confront risks and build control systems is one of the obstacles facing risk management.

In addition to the above, risk management systems in government entities face the following challenges and difficulties:

- Lack of agreement on a specific concept of risk management.
- The government sector's inability to respond quickly to changes occurring in the surrounding environment.
- Lack of strategic thinking, weak participation and communication, lack of understanding of risk management culture, and failure to integrate risk management objectives with the organization's objectives.
- The risk management process does not focus on important vital risks due to the lack of clarity of those risks included in the entity's operations.
- Lack of independence of risk management, lack of risk management policy, or there is a policy, but it does not emphasize the principles of risk management in the entity.
- The need for training, skills development and learning of risk management processes.
- Weak internal control systems in some government entities.
- Challenges of coordination and participation, which are represented by the lack of harmony and agreement in decisions and visions related to risks and their management between different levels of management.

2/5 General framework for risk management systems in government entities

The purpose of the risk management framework is to assist an entity in integrating risk management into all of its critical activities and functions. The components of the framework and the way it operates are determined by the needs of the entity, and the framework includes the following activities (Risk Management Platform, 2021: 15, (ISO31000, 2018: 4):

- Leadership and commitment to risk management.
- Integration of risk management into the entity's operations.
- Design a risk management framework.
- Implementation of the risk management process.
- Evaluation and treatment of the risk management process.
- Continual improvement of the risk management systems framework.

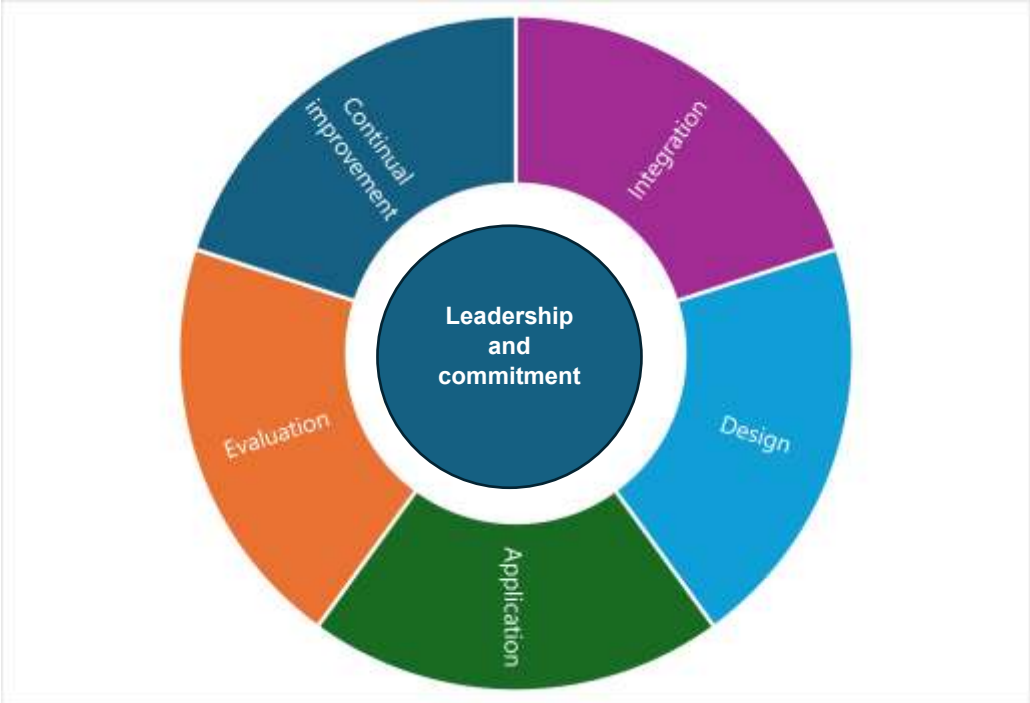

Figure (2-2) General framework for risk management

2/5/1 Components of risk management systems in government entities

To build an effective risk management framework, the government entity must ensure that the most important elements of risk management systems are in place that are consistent with the nature of its activity, business and policy, including:

2/5/1/1 Risk management governance: Risk management governance is the absence of conflicts of interest in roles and responsibilities within the government entity and that roles and responsibilities are directly linked to powers. Therefore, it may be better to use the three lines of defense model in risk management presented by the Treadway Committee to control risks effectively (Mervat Ali, 2023: 62):

The first line: the departments and sections of the government entity, where each department is responsible for monitoring the risks that may hinder the achievement of the entity's objectives, evaluating them, and reporting them to the executive management.

The second line: risk management, compliance management and governance, and its primary role is to provide expertise and support to the activities of the first line of defense.

The third line: internal audit, which is concerned with providing direct assurances to officials and senior management regarding governance, risk management, and compliance management efforts with regard to the first and second lines.

2/5/1/2 Roles and Responsibilities

The entity must define the roles and responsibilities related to risk management, which can be summarized as follows (Risk Management Platform, 2021: 9, Nawaf Bandar, 2022: 1704):

- **Top management:** Its role is to adopt the risk management policy in the entity and approve the risk tolerance limits.
- **Executive management:** It is responsible for identifying the risks of each job or activity within the government entity.
- **Risk Management Oversight Committee:** The committee approves the entity's risk management framework and any amendments thereto, audit risk acceptance levels, risk management policy, and related policies, and approves the necessary procedures to implement the policy.
- **Risk Management:** Proposes a risk management strategy, prepares and proposes the limits of the entity's acceptance and tolerance of risks, related policies and procedures, the general framework for dealing with risks, the methodology for assessing them, methods for measuring them, and the mechanism for assessing losses and submitting them to the committee.
- **Work Team:** Identify and assess potential and residual risks related to their unit, identify and assess risk treatment options, prepare and implement action plans to address risks and report on them. Audit and update risk registers.
- **Internal Audit:** Its role is to audit the risk management processes within the entity.

2/5/1/3 Risk Management Policies

The entity prepares an appropriate risk policy, which is a document that defines clear procedures for how to manage risks. The entity audit and evaluates the risks it faces in all areas of its work and plans to manage those risks.

2/5/1/4 Risk Management Performance Indicators

The entity shall follow up and monitor the effectiveness and adequacy of its risk management performance by identifying key performance indicators with the aim

of continuous improvement and development of risk management and knowing the extent of the entity's ability to avoid the negative effects of risks and exploit the positive effects resulting from events and variables, which are known as opportunities. The identification of these indicators depends on the nature of the activities and services provided by the government entity, and these indicators vary between quantitative and qualitative indicators (Walid Al-Desouki, 2019: 18).

2/5/1/5 Risk Classification

Risks are classified into categories to facilitate the grouping of similar risks and to develop a clear vision of how to deal with and address them, as the classification of risks depends on the nature of the entity's work and activity, taking into account the internal and external circumstances surrounding government entities. The following are examples of risk categories:

- **Strategic risks**

  These are the risks that arise as a result of the absence of an appropriate strategic plan that determines the path to be followed to achieve the short- and long-term goals of the entity (Al-Hadidi Mohamed, 2020)

- **Operational risks**

  Losses resulting from inefficiency, failure of internal processes, individuals, malfunction of information systems, weak internal control, or external events (Henderson, 2022).

  These risks are divided into two types: the first: human resource risks resulting from individual errors, whether intentional, such as manipulation or deception, or unintentional, such as mistakes. The second: the risks of fraud and financial corruption, which result from negligence, omission, or forgery in records and books, or the deliberate incorrect application of accounting standards and principles (Duaa Al-Najjar, 2013: 16).

- **Cyber security and IT risks**

  It is one of the biggest risks facing government entities, especially after the implementation of e-government. Examples include the risk of data theft, viruses that result in data loss, or the risks of cyber-attacks, hacking, and electronic breaches (Nambisam et al., 2019).

- **Risks of non-compliance**

  These are the risks that may result from non-compliance with applicable laws, legislation, instructions and regulations, which constitute an obligation on government entities and employees.

- **Financial risks**

  It is one of the forms of risk management resulting from the organization's failure to manage its funds and fulfill its obligations (Khoruzhy et al., 2022), such as exceeding the amounts allocated in the government entities budget, failure in financial planning, or liquidity deficit risks.

- **Governance risks**

  These are risks resulting from unclear objectives or responsibilities of supervisory authorities, conflicts of interest, lack of proper separation of duties, and inappropriate assignment of tasks to departments or the three lines of defense.

2/5/1/6 Risk tolerance limits

Risk tolerance limits are variable limits that are updated when goals and strategies change. The degree of risk tolerance is closely linked to the current strategy of the entity and is the main factor in increasing or decreasing the desire to accept risks as a direct relationship between them. The more specific and ambitious strategic goals are, the greater the limits of the desire to accept risks to achieve these strategies (Hoda Al-Ahedab, 2021: 36).

2/5/2 Risk Management Systems in Government entities Course

Implementing a risk management process is essential for any entity, and in order for it to be implemented, it must be economical and feasible for the entity (Ghada Al-Qadi, 2021: 12).

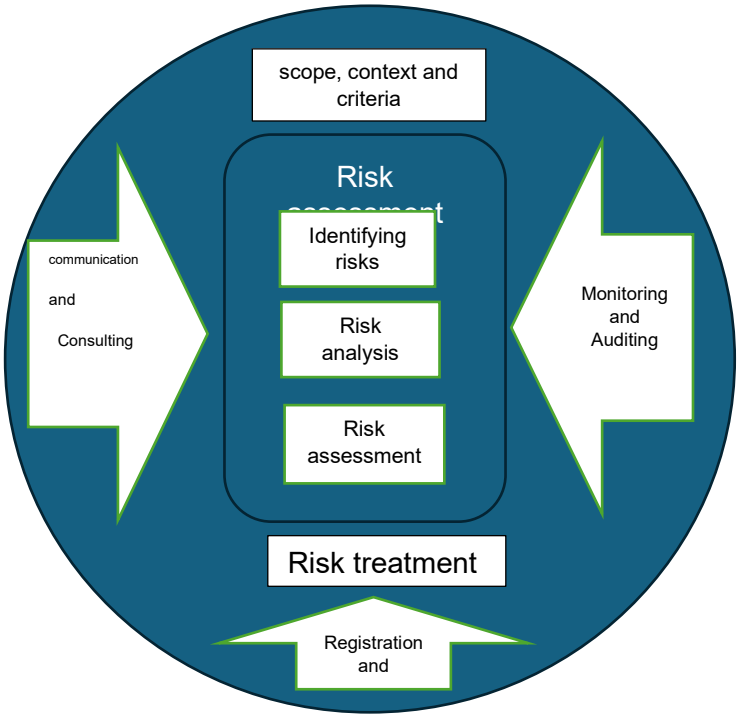

Figure (2-3) Risk Management Work Cycle

2/5/2/1 Analysis of objectives, strategies and performance indicators for government entities

Before starting the risk cycle work, the objectives and indicators approved by the risk management must be audited in order to build a comprehensive vision of the current situation and what is required to be achieved in the future.

2/5/2/2 Defining scope, context and criteria

Before starting risk management operations, the risk management team studies and analyzes the strategic objectives established for each sector or department within it to determine the scope, context, and standards as follows (Guidance Guide for Building an Enterprise Risk System, 2022: 16, Hiba Bin Shalhoub, 2021: 33):

- **Scope:**

  The scope represents the basic boundaries of the risk register, where the scope is linked to the objectives of each department and then linked to the strategic objectives of the entity in general.

- **Context:**

  The context can be divided into the internal context, which includes the components and elements of the internal environment, and the external context, which includes the external environment in which the entity carries out its operations.

- **Criteria:**

  Determining the criteria that will be relied upon to weigh risks in the risk management cycle is an important foundation before risk management processes.

2/5/2/3 Risk Management Processes

The risk management process goes through the stages of identifying, analyzing and evaluating risks.

First: Identifying risks

Risk identification is the discovery and identification of potential risks that threaten the objectives of the entity or institution according to their importance.

Several methods can be used to identify them, such as questionnaires, expert opinions, and conducting personal interviews with managers, etc. (Bidaa Star and others, 2018: 8).

There are many tools that can be used to identify risks, such as:

- SWOT analysis is a commonly used analytical tool that can be used as a support in the process of identifying risks, as it is used to identify the internal strengths and weaknesses of the entity, growth opportunities and external threats that may affect it, and how to use the strengths that were previously identified to confront these risks.
- PESTEL analysis (Political, Economic, Social, Technological, Environmental, Legal), It is used to identify the political, economic, social, technological, environmental, and legal factors that can affect the entity.
- Network Analysis: Network analysis can be used to identify risks that affect the relationships between elements of an organization.

Second: Risk analysis

Its aim is to reach ways to control risks, mitigate their consequences, and arrange them in a manner based on probability and the severity of their impact on the entity objectives (Bidaa Star and others, 2018: 9).

Once the types of risks are identified, the likelihood of their occurrence is determined, as well as their consequences. The aim of analyzing them is to increase understanding of each specific case of risks, and how they can affect the entity's projects and strategic objectives (Ahmed Musbah, 2019: 336).

Tools that can be used in the risk analysis phase include:

- Cause and effect analysis: Cause and effect analysis is used to identify the potential causes of risks and analyze the potential consequences of these risks.

- Sensitivity analysis: Sensitivity analysis can be used to determine how potential risks affect specified objectives and to identify which risks are most sensitive.
- Modeling and simulation: Modeling and simulation can be used to analyze potential risks and visualize their impact on the entity more realistically.

Third: Risk assessment

Risk assessment means estimating the potential risks and classifying their degree of severity in order to choose the most appropriate means to control them and mitigate their impact (Bidaa Star et al., 2018: 9).

After analyzing the risks and determining the likelihood of their occurrence, they are further evaluated, after which a decision is made as to whether the risks are acceptable, and whether the entity is ready to take them (Ahmed Musbah, 2019: 336).

The risk assessment process enables the entity to consider the extent to which potential events will impact the process of achieving objectives. Management must evaluate events from two perspectives:

First: Impact, which is represented in measuring the impact that the event will have on the ability of the entity to achieve its goals. The positive and negative impacts of events can be evaluated either individually or by category in terms of their impact on the entity.

Second: Probability, using a quantitative, semi-quantitative or qualitative method in terms of the probability of occurrence and possible outcomes. Probability represents the possibility of an event occurring within a specific period.

When risks are assessed, the risks in the entity are prioritized and can be classified into (Guidelines for Internal Control Standards for the Public Sector, 2007: 16):

Inherent risk: Any risk that an entity faces in the absence of any actions that management might take to modify the likelihood or impact of the event.

Residual risk: This is the risk that remains after considering the management's response to the risk.

Tools that can be used in the risk assessment phase include:

- Probability and impact analysis: used to determine the likelihood of potential risks occurring and their impact on the entity.
- Quantitative risk analysis: Quantitative risk analysis is used to determine how potential risks affect specified objectives using statistical and mathematical tools.
- Qualitative risk analysis: Qualitative risk analysis is used to identify potential risks, classify them, and determine appropriate actions to deal with them.
- Risk Map: A risk map can be created to visualize potential risks, assess them, and identify actions to address them.

In addition to some other methods used to measure risks, which are: the beta coefficient, which is one of the most widely used measures to determine the size of systematic risks, the standard deviation, which is one of the measures used to determine the size of unsystematic risks, variance, and the coefficient of variation (Horn, et al., 2017: 11).

2/5/2/4 Risk Management

After assessing risks, the management determines how to address its response to these risks and deal with them through one of the following strategies (Israa Abdel Sahib and others, 2021: 19, Ghada Al-Qadi, 2021: 12) :

- Risk Avoidance: It is one of the best strategies for dealing with risks, as it leads to the complete absence of risk, and thus the entity is not exposed to loss by trying to exclude activities that lead to risks.
- Risk Transfer: It is a means of transferring risks to another party through external contracting or insurance.
- Reduce Risk: Taking appropriate measures to reduce the likelihood of risks occurring and their effects on the entity by using preventive programs and activities to reduce and prevent losses (Loss Reduction And Prevention Programs) or developing a treatment plan that mitigates its impact if it occurs.
- Accept/Tolerate the risk: This strategy is acceptable in the case of small risks where losses are accepted when they occur, as all risks that cannot be avoided or transferred are accepted to be borne. Accepting the risk means deciding that the risk is an inherent risk of practicing the activity, and that the benefit of this activity exceeds the potential risks.

2/5/2/5 Communication and Consultation

Communication and presenting consultation process is an integral part of a creating process of a positive risk management culture at the entity level. This is done by adopting a consultative approach to risk management, rather than a one-way exchange of information (Guidelines for Internal Control Standards for the Public Sector, 2007: 22).

2/5/2/6 Registration and Reporting

Recording and reporting is an ongoing step that supports and organizes the risk cycle, aiming to support the executive department and the risk committee in their responsibility towards the risk environment and follow it up to activate responsibility towards risks by all levels, as it is necessary to document the risk cycle procedures and their outputs and submit related reports through appropriate and approved channels (Guidance Manual for Building an institutional Risk System, 2022: 30).

2/5/2/7 Monitoring and following - up

This process includes implementing continuous auditing processes to ensure the effectiveness of the current risk management program and the steps followed and applied in the risk cycle and records, noting the need for continuous and periodic follow-up to ensure changing risk management methodologies to enhance best practices. Risk management is an ongoing process and not a project that can end and be forgotten, as the entity, its environment and its risks are constantly changing (Ghada Al-Qadi, 2021: 14).

Chapter Three

Chapter Three

Supreme Audit Institutions adopt a risk-based audit approach

The audit process used to depend on a set of routine procedures to detect fraud and distortions in operations and accounting books, but it expanded to include the evaluation of risk management systems and internal control systems in entities. Because the process of expressing an opinion is associated with many risks that are difficult to fully estimate, the audit process has moved towards areas with high risks (Fras Mohamed, 2016: 1). This prompted professional organizations to encourage Supreme Audit Institutions to adopt the risk-based audit approach by issuing standards and guidelines that help in implementing this approach.

3/1 What Is Risk-Based Audit, Its Importance and Objectives?

Risk-based auditing strives to improve the effectiveness and efficiency of auditing by transforming the function from a control activity to the activity that effectively contributes to risk management. It is a methodology that aims to increase transparency guarantee, verify control systems, and allocate the necessary resources to address risks (Yasser Saeed, 2013: 71).

3/1/1 Audit risk concept

We must differentiate between audit risks and client risks:

- Audit risks are defined as “material distortions in accounting records and books that affect the financial statements and are not discovered by the auditor.”
- The American Institute of Certified Public Accountants defined it as “the risks resulting from the auditor’s unknowing failure to appropriately modify

his opinion regarding the financial statements that contain material misstatements" (Fras Mohamed, 2016: 28).

As for customer risks, they are defined as "the inability of the entity or entity to achieve its goals, which are reflected in its strategy, as a result of internal and external factors that express the obstacles facing the entity and which negatively affect its ability to continue" (Zaki Mohamed Awad, 2013). The emergence of this concept led the auditing process to develop its mechanisms and tools, and what is called risk-based audit appeared, which focuses on analyzing the risks of the internal and external activity of the entity and understanding the strategy and activities of the entity's operations with the aim of identifying significant distortions.

We must differentiate between audit risks and risk management audits. The latter is defined as "a detailed and organized audit of the risk management program, designed to report whether the program's objectives are appropriate to the company's needs, whether the solutions designed to achieve these objectives are appropriate, and whether these solutions have been properly implemented" (Ahmed Abdallah and others., 2015: 150).

3/1/2 The concept of risk-based audit

There are many concepts of risk-based audit, including:

- Some have defined it as "the process through which the risks inherent in strategic plans are identified and the adequacy and effectiveness of systems in confronting and reporting risks are tested" (Zainal Abidin, N., 2017: 363).
- Risk-based audit is also defined as "expanding the scope of inspection and auditing operations to include all procedures required to manage risks within companies, which provides the auditor with a clear vision and enables him

to make recommendations to introduce new audit procedures" (Amal Abdallah, 2023: 662).

- Another defined it as "the audit process that explains how to integrate risk concepts into the strategies and approaches used for administrative systems. It provides a mechanism for understanding the risks that affect the achievement of the organization's objectives and describes the current measures and proposed strategies for managing these risks. It is also a mechanism for monitoring and evaluating internal auditing and reporting on practices and procedures" (Spadaccini, D., 2010: 2).

3/1/3 The importance of risk-based audit

The importance of applying risk-based audit is as follows (Nourhan Al-Sayed, 2018: 124, Yasser Al-Sayed, 2015: 479, Fras Mohamed, 2016: 53):

- The introduction of the risk assessment process will improve the quality of the audit process by increasing the level of performance efficiency, and will lead to significant changes in audit practice.
- Provides a deeper understanding of the entity and its environment, including an understanding of internal control to identify the risks of material misstatements in the financial statements and what the entity is doing to reduce those risks.
- By identifying and assessing potential risks, auditors can design their procedures and focus on areas that pose the greatest risks to the financial data.
- Improve the link between risk assessment and the nature, timing and extent of audit procedures implemented in response to those risks. This approach helps auditors to allocate their time and resources efficiently, ensuring a more comprehensive audit process.

- Risk assessment helps the auditor to identify potential frauds and errors that may exist in the entity's financial statements. By understanding the inherent risks associated with various transactions or account balances, auditors can design appropriate audit procedures to detect and prevent fraud.

Risk assessment is therefore an indispensable element in the audit process. By understanding and assessing risks, the effectiveness of the audit process can be enhanced, potential fraud and errors can be identified, audit procedures can be designed, and compliance with auditing standards can be ensured.

3/1/4 Risk-based audit objectives

The aim of applying the risk-based audit approach is (Abeer Mohamed, 2014: 60, Yasser Al-Sayed, 2015: 483):

- Identify and assess the risks of material misstatement of the financial statements due to fraud through a deep understanding of the entity and its environment, including internal control.
- Accurately assess risks and material misstatements based on understanding and perception.
- Obtain sufficient appropriate audit evidences about the assessed risks of material misstatement, by designing and implementing appropriate responses to those risks.
- Respond appropriately to risk situations arising from fraud discovered or suspected during the audit process.
- Evaluating risk management processes to ensure that the responses used by the department to address risks are appropriate, consistent with the entity's policy, and effective in reducing those risks to an acceptable level.

- Verifying the extent to which the internal audit department of the entity is performing its role in assessing risk management, and the extent to which the entity's risk response programs exist and are sufficient.
- Verifying the existence of a sound framework for the regulatory controls which has been placed in order to reduce the effects of the risks that the entity wishes to accept and deal with.

3/2 Types of audit risks and the relationship between them

Determining the type of risks helps the audit to design audit tests that focus on important issues, and the following types of audit risk can be identified:

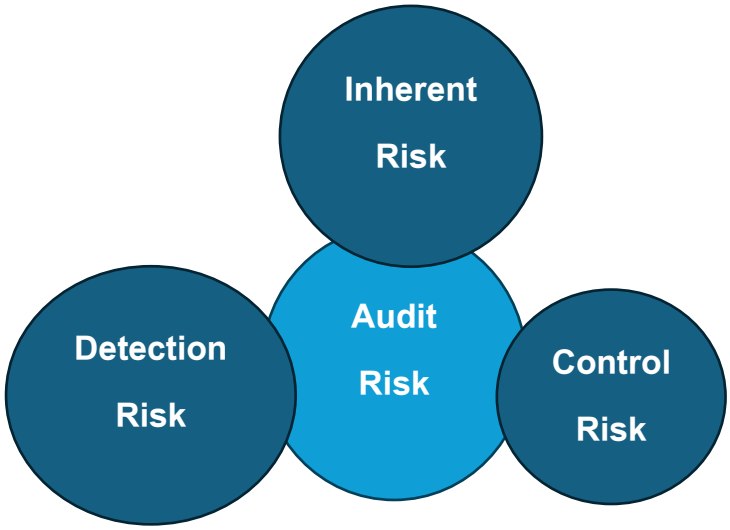

Figure (3-1) Types of audit risks

3/2/1 Inherent Risk

Inherent risk is the possibility that a particular account or group of operations contains material errors without taking into account the efficiency of the internal control system with this risk, which is related to the nature of the item being audited (Abeer Mohamed, 2014: 34).

The inherent risks depend on many factors that can be summarized in the following factors (Fras Mohamed, 2016: 32):

First: The nature of the balance or the specific type of transactions. The inherent risks are greater when the balance or specific type of transactions is more exposed to intentional or unintentional error.

Second: External factors such as technological developments: If the facility which is subject to the audit operates in an industry characterized by rapid technological developments, there is a risk inherent in the inventory of goods, or the inventory in such industries is more susceptible to overvaluation.

Third: Other factors related to the financial position of the entity: such as insufficient working capital available to continue operations.

Through the auditor's knowledge of the factors that may increase the inherent risks and assessing them efficiently and effectively, the auditor can estimate these risks correctly and improve the process of detecting areas of corruption, fraud, manipulation and deception, and thus improve the quality of the audit process, which is reflected in the improvement and development of risk management systems in government entities.

3/2/2 Control Risk

These are the risks resulting from data errors that may occur to an account balance or group of transactions, which may be individual or when aggregated with other data errors for balances or transactions. These are errors that can be prevented, discovered or corrected in the suitable time by accounting and control systems (Ahmed Qaid, 2015: 60).

Control risk is therefore risks that internal control procedures do not prevent in the suitable time, or do not detect the possibility of material errors. This type of risk is an indication of the effectiveness of internal control procedures, as the more

effective internal control, the more likely there is no errors or to detect them through this system. Since any internal control system has limitations, this risk is inevitable.

The auditor's assessment of this type of risk depends on his testing of the extent of compliance with the internal control system of the entity being audited. The auditor usually assesses control risk in light of studying and evaluating the internal control procedures in relation to the account or specific type of transactions. The auditor then decides whether to rely on these procedures while bearing the degree of risk resulting from that or not to rely on them and expand on the analytical and detailed audit procedures that require additional costs for the audit process.

Internal control risk assessment is defined as “the auditor’s expectation of the extent to which internal control will prevent material misstatements from occurring or will detect and correct such misstatements if they occur” (Arens, et al., 2012: 320).

In order for the auditor to be able to assess control risks, he must study the components of internal control in the entity being audited, which are: the control environment, risk assessment, control procedures, information and communication, and monitoring of control activities.

3/2/3 Detection Risk

The auditor depends on a set of procedures to collect evidences ranging from personal assessment to the use of statistical or even complex quantitative methods. Therefore, detection risk is called controllable risks. This control occurs through good planning and supervision of the audit process, the use of objectives, evidence, and adherence to generally accepted auditing standards (Hamed Nour El-Din and others, 2016: 96).

These are risks that the auditor cannot detect material errors in the financial statements, even if he applies basic tests. Detection risk also represents the risks resulting from not detecting material errors in the financial accounts and data despite the auditor conducting a detailed examination, audit, or control of those data or accounts (The Professional and Control Standards Committee, 2020: 8).

Detection risk is a an indication of the audit procedures and their application by the auditor. This risk results partly from the uncertainty that prevails in the audit process when the auditor does not conduct a comprehensive examination of the operations. Such a risk may exist even if the auditor conducts a comprehensive examination. Uncertainties may result from the auditor's use of inappropriate procedures, or from the failure to apply the procedures properly, or from the incorrect interpretation of the audit results. Therefore, the auditor can control and reduce the risks of detection so that he is responsible for collecting sufficient evidences that enables him to manage and control these risks (Mohamed Ahmed, 2011: 111).

Discovery risks include two elements:

First: The risks related to the failure of analytical audit procedures to detect errors that are not prevented or detected by internal control procedures. This is called "analytical audit risks."

Second: Risks related to incorrect acceptance of detailed tests results at a time when there is a material error that requires rejection and has not been discovered through internal control procedures, analytical audit procedures, and other appropriate tests, and is called "detailed audit risks."

Therefore, the components of the audit risks equation are as follows:

Audit Risks = Inherent Risks x Control Risks x Detection Risks

3/2/4 Interrelation between audit risks

From the previous presentation of the types of audit risks, the interrelation between the types of risks can be clarified as follows (Fras Mohamed, 2016: 39):

- Control risks share with inherent risks in the fact that both do not depend on the auditor, but rather on the nature of the activity of the entity being audited.
- There is a direct relationship between control risk and the quantity of effort exerted in implementing the audit process, as the effort exerted in implementing the audit process increases as the control risk increase.
- Detection risks differs from both inherent and control risks in that it depends on the audit procedures used by the auditor, and can therefore be influenced by them.
- There is an inverse relationship between detection risk and both inherent risk and control risk, such that the risk of non-detection decreases as inherent risk and control risk increase, and vice versa.

3/3 The impact of risks-based audit stages on risk management systems in the government entities

The risk-based audit process goes through several stages, starting with the preparation stage for the audit process, then the planning stage, followed by the execution stage, then the report preparation stage, and ending with the follow-up stage. The following is a summary of these stages, with clarification of the impact of each stage on the risk management systems of government entities.

3/3/1 Preparing for the risk-based audit process

The audit process begins with a preliminary stage that precedes the planning stage.

3/3/1/1 Understanding the nature of the entity and its environment

The auditor must study the nature of the activity of the unit subject to auditing and identify the work environment and conditions in order to identify the risks it faces and estimate the audit risk. The auditor can use multiple methods to examine and study the work environment and conditions, such as:

- Observing processes within the work environment.
- Analytical procedures.
- Oral discussions and inquiries with management and employees.
- Historical information about the entity and its activities.
- Understanding objectives, strategies and their associated risks.
- Measuring and evaluating the financial performance of the entity.
- Studying the extent of the entity subject to audit's compliance with laws and regulations by studying previous reports.

3/3/1/2 Audit risk assessment

Before planning the audit process and determining the procedures, the auditor must assess the risks, whether quantitatively or non-quantitatively.

First: Risk assessment steps

The risk assessment process is carried out according to the following steps (Fras Mohamed, 2016: 54, Risk assessment, Apr. 2024):

Step 1: Identify the risks

Potential risks that may affect the financial data are identified by the auditor obtaining a complete understanding of the entity's business and its environment, including the components of internal control. Based on this understanding, the auditor identifies the business risks that lead to material misstatements in the financial data.

Step 2: Assess the possibility and impact of risks

Once risks have been identified, the auditor needs to assess the possibility of those risks occurring and their potential impact on the financial data. This involves assessing the possibility of the risk occurring and the magnitude of its potential impact. By classifying risks based on their possibility and impact, the auditor can prioritize his audit procedures accordingly.

Step 3: Design audit procedures to treat risks

After assessing the risks, the auditor can then design its audit procedures to treat the identified risks. This includes designing procedures specifically aimed at obtaining sufficient appropriate audit evidences to mitigate identified risks. Then linking them to assessments of the risks of material misstatement at the assertion level related to them and identifying the remaining risks which the department has not considered at its response to risks.

Step 4: Determine the level of the remaining risks.

This step includes evaluating the evidences obtained from risk assessment procedures, tests of controls and detailed tests, determining the level of the remaining risks for each identified risk, and determining its impact on the control system and the entity's financial statements. The remaining risks are the risks that remains after considering the effectiveness of controls. This step helps the auditor prioritize their audit procedures and focus on areas of higher remaining risks.

Step 5: Document the risk assessment process.

The auditor should document the risks assessment process, including the identified risks, the assessment criteria, and the logical basis behind the assessment of the possibility and the impact. These documents serves as an evidence of the planning of the audit process and provides a basis for future

reference. In addition, it helps the auditor to communicate the identified risks effectively to the department and the stakeholders.

The final step: continuous control and reassessment

Risk assessment is not a one-time activity, but rather an ongoing process throughout the audit. As the audit progresses, the auditor needs to continually control and reassess the identified risks, considering any new information or changes in circumstances. This ensures that audit procedures remain relevant and effective in treating emerging risks. Regular communication and collaboration with the entity's department is essential in this regard.

Second: Risk assessment methods

There are several methods for assessing audit risks, including:

- Quantitative approach (audit risk model): This is the model that measures audit risks quantitatively. It is a model that expresses the relationship between the risk elements related to the auditor's assessment of internal control and both analytical audit procedures, and detailed tests.
- Non-quantitative approach (audit risks matrix): The audit risk matrix is used when it is difficult to use the quantitative approach to assess audit risk, to link the types of risks and know the relationship between them.
- The modern model for risk assessment and management: According to this model, all employees in the entity, at different organizational levels, participate in the risk management process, and the auditor plays an important role in the success of the risk management process as follows:

- Identify the events causing the risk.
- Identify the negative effects of each event (risk).
- Estimating the probability of each event occurring (risk).

- Study the suitability of current systems to reduce the risks resulting from these events and the procedures taken to avoid or reduce these risks.
- Put proposals that contribute in reducing the effects of risks.

Third: Difficulties and challenges of the risk assessment process and how to overcome them

There are several factors that affect on risk assessment during the audit process, the most important of which are the following (Risk assessment, Apr. 2024):

- Difficulty in collecting sufficient data: One common challenge in risk assessment is the lack of sufficient data collection. Without accurate and comprehensive data, it becomes difficult for the auditor to accurately assess potential risks.
- Over-reliance on historical data: While historical data can provide valuable insights into past risks and their impacts, it may not always be a reliable indicator of future risks. Conditions and business environments may change over time, and relying solely on historical data may lead to overlooking emerging risks.
- Failure to consider internal factors: Risk assessment should not only focus on external factors, but should also take into consideration the internal factors that may contribute to risks.
- Failure to involve key stakeholders: The risk assessment should include key stakeholders to ensure a comprehensive understanding of the risks. Involving stakeholders such as the department, employees, and external experts can provide diverse perspectives and help to identify risks that might otherwise be overlooked.
- Lack of continuous control: Failure to control and update risk assessments continuously can result in outdated or incomplete risk profiles. Regular

control allows for timely identification of new risks and reassessment of existing risks.

To overcome the difficulties and challenges of risk assessment, the following can be done:

- Ensure that there are appropriate mechanisms for collecting data, and encourage entities to maintain accurate, accessible records.
- Achieving a balance between using historical data and a forward-looking approach to identify emerging risks.
- Integrating internal factors into risk assessment by considering organizational culture, governance, and internal control mechanisms.
- Engage key stakeholders to gain diverse perspectives and insights.
- Establish a system for continuous control and updating risk assessments to remain proactive in risk management.

By recognizing these common challenges and difficulties in risk assessment and implementing the suggested advices, auditors and entities can enhance the effectiveness, improve and develop their risk assessment and management processes and make enlightened decisions to mitigate potential risks.

Fourth: Using technology to enhance the role of audit in risk assessment

The use of technology in the application of risk-based audit has a significant impact on the audit process, especially in risks assessment:

- Using technology to efficiently assess risk: Technology plays a pivotal role in transforming various industries, and the auditing field is no exception. As auditors seek to enhance their risk assessment procedures, they are increasingly turning to advanced technological tools and techniques to simplify their processes, improve accuracy, and uncover important insights.

- Using data analytics to gain deeper insights: One of the most important developments in the auditing field is the integration of data analytics tools. These tools allow auditors to analyze massive amounts of data quickly and efficiently, enabling them to identify patterns, anomalies, and potential risks.
- Applying Artificial Intelligence to Identify Risks: Artificial Intelligence has revolutionized risk assessment in auditing by automating various tasks and processes. Artificial Intelligence algorithms can analyze large amounts of data, identify potential risks, and even suggest appropriate risk mitigation strategies. For example, auditors can use AI-based tools to examine financial statements and detect inconsistencies or irregularities that may indicate fraudulent activity. By automating these processes, auditors can focus their efforts on analyzing high-risk areas and providing valuable insights to clients.
- Enhanced communication and cooperation through cloud technology: Cloud technology has changed the way auditors collaborate, share information, and conduct risk assessments. Using cloud platforms, auditors can access and share audit documents in real time, enhancing collaboration and communication among team members. Additionally, cloud technology enables auditors to securely store and manage vast amounts of data, reducing the risk of data loss.

3/3/2 Planning the audit process based on the risk assessment

When there is an understanding of risks and they are assessed and linked to the planning process, this gives greater confidence, clarity and high transparency in the final reports of the audit process for the beneficiaries. Therefore, when planning the audit process based on risks, the following must be taken into consideration (Ali Ahmed, 2022: 14, The INTOSAI Development Initiative, 2019: 37):

- Analyze data and review internal audit and audit committee reports regarding the entity's risk management and reporting thereon.
- The auditor must study audit risks and relative importance together when planning the audit process.
- The auditor establishes control procedures that ensure that risks do not spread or are reduced to the lowest possible level.
- Prioritizing important audit areas with high risks.
- Clear identification of the objectives of the audit and linking them to the identification and assessment of risks.
- Pre-identify all potential problems and obstacles that the auditor may face.
- Clearly define all procedures and policies necessary to achieve the objectives - prepare an audit program that includes potential risks.
- The plan must also be flexible to accommodate any changes that may be required by circumstances, such as discovering a type of risk that was not included in the plan, and it must be written.

There are some factors that directly affect the risk-based audit planning process and can only be known during practicing the audit process and plans are modified accordingly. The following are some of the commonly known factors that affect the risk-based planning process:

- Lack of clarity of objectives.
- The extent of the ability to continue the planning process.
- The plan's ability to change, which is known as plan flexibility.
- How to document a risk-based audit plan.
- The extent to which the plan can be implemented easily.
- Not choosing the right time for implementation.
- How to select the work team.

- The extent of commitment to time.

3/3/3 Implementation of the risk-based audit process

After the preparation and planning stage of the audit process comes the implementation stage and the collection and evaluation of evidences, where the auditor implements the audit program that was developed and carries out the audit tasks that were previously presented within the scope of the audit process.

3/3/3/1 Considerations for the implementation stage of the risk-based audit

When implementing a risk-based audit process, the following should be taken into consideration (Ali Ahmed, 2022: 15, The INTOSAI Development Initiative, 2019: 61):

- Since risk assessment is an ongoing process throughout the audit process, the auditor needs to continually re-evaluate risks in accordance with changes in the surrounding environment or the acquisition of any new information. This ensures the continued efficiency and effectiveness of audit procedures in treating emerging risks.
- INTOSAI Standard (ISSAI 1330.6) requires the auditor to develop and perform additional control procedures whose nature, timing and extent depend on the risks of material misstatement assessed at the assertion level and to respond to them, and he must collect supporting and substantive control evidences.
- Determine the level of risks accepted by the entity during the implementation process.
- Verify that there are effective procedures for measuring operational risks during the implementation of the audit process.
- Measuring the level of capital adequacy of the entity during the implementation stage.

- Exchange information with the Risk Management Department to improve risk management.
- Verifying that the entity has established control procedures that ensure that risks do not spread or are reduced to the lowest possible level.
- Verifying the entity's acceptance of risks and dealing with them quickly to reduce their negative effects.
- Verifying that the entity has involved other parties in bearing risks through a number of different methods, such as adopting the method of guarantee or insurance with insurance companies.

3/3/3/2 Auditor's procedures to reduce audit risks

A number of measures have been identified that can be taken to reduce audit risks, which are summarized as follows (Belkacem Al-Khalil and others, 2021: 219):

- Identifying and supervising the audit team: Responding to risks may require additional individuals to perform the audit process, so that these individuals have special knowledge and competencies in a group of fields, such as fraud and deception specialists and those with experience in information technology. The scope of supervision clarifies the auditor's assessment of fraud risk and also assesses the competence of the team members who have been assigned the audit task.
- The element of surprise in determining the audit procedures: Including the element of surprise in determining the nature of the audit agenda is considered one of the most important things that the auditor should do, as all employees and management members of the entity are familiar with the usual audit procedures, which allows them to hide certain financial information. Examples of these procedures include: examining confirmations and account balances that were not subject to examination

due to their low level of risk and importance, making a change in the audit procedures agendas compared to what was approved, and using different survey methods, in addition to examining a sample of the entity's branches where the audit is not expected to be conducted.

- Audit procedures to reduce fraud risk at the assertion level: The auditor's task with regard to reducing fraud risks at the assertion level includes a set of modifications at the level of the scope of audit procedures and the nature of the audit agenda, and this is done by: making a modification at the level of the nature of the audit with the aim of collecting a set of evidences that has the greatest degree of responsibility, working to adapt the agenda related to the analytical audit, and also modifying the scope of procedures that shows the degree of fraud risk assessment.
- Audit procedures to reduce the risks of department circumventing and evading control: This is concerned with procedures that work to reduce and combat the risks of circumventing control.

3/3/4 Preparing the audit report

INTOSAI (1500 ISSAI) requires the auditor to gather correct and sufficient audit evidences to provide an audit opinion on the financial data. Control evidences is gathered by performing specific control procedures related to risks previously identified at the assertion level or the financial data level. At this stage of the audit process, the auditor evaluates the control evidences gathered in the implementation stage. The control evidences must be assessed for sufficiency and appropriateness, as it forms the basis for the opinion on the financial statements and the preparation of reports on non-compliance with laws, rules and organizing regulations, if found (The INTOSAI Development Initiative, 2019: 25).

In general, the auditor must prepare the audit report in accordance with the generally accepted auditing standards. The report must be characterized by accuracy, clarity and appropriate timing, and the language of the report must be professional and understandable to the users of the report.

3/3/5 Follow up on the audit report

The control process does not stop with the report on the results, but rather the audit results must be followed up with regard to shortcomings and inadequacies, and the extent of the entity's response to the audit reports must be confirmed.

Follow-up procedures is considered one of the good practices according to Principle (3) of the INTOSAI Standard (ISSAI-20). The Supreme Audit Institution cannot measure whether the control mission has achieved the intended effect or not unless this follow-up process has been implemented after the issuance of the control report. Therefore, follow-up procedures are considered one of the important components of the control process (The INTOSAI Development Initiative, 2019: 26).

In light of the follow-up of the risk-based audit report, the following must be taken into consideration (Ali Ahmed, 2022: 16, The INTOSAI Development Initiative, 2019: 88):

- The auditor follows up on the implementation of the recommendations stipulated in the audit report, including recommendations related to risk management.
- In the follow-up stage, the auditor ensures that the correct actions taken by the entity to deal with the risks achieve the desired results. Insufficient or unsatisfactory procedure taken by the entity subject to audit may require an additional report from the Supreme Audit Institution.
- The auditor usually performs this follow-up as part of the audit process for the next year, as unresolved prior year issues may represent risks of material misstatement in the subsequent year's data.

- One of the objectives of control missions is to help improve systems and procedures including risk management and internal control systems in the entity. Through follow-up, the Supreme Audit Institution will also be able to identify the added value through financial control in terms of improvements made to the systems.

It is clear from the previous presentation that identifying and assessing risks, how to manage them, and the extent of responding to and treating them, is an integral part of the work of the auditor (Supreme Auditing Intuitions) during the various stages of the risk-based audit process, whether in the stage of preparing for the audit process, planning it, implementing it, reporting on it, or even following up on the report issued by it. This contributes to improving the performance of the audited entity in general and improving risk management systems and control systems in particular.

3/4 The impact of applying the risk-based audit approach on the quality of the audit process and its reflection on the development of risk management systems in government entities

The quality of the audit process reflects its ability to detect and report on the risks of fraud, errors and deception in government entities, and thus protect public funds from the risks of corruption. The application of risk-based audit has an impact on the quality of the audit process and thus on improving and developing risk management systems. This approach depends on improving the quality and effectiveness of the audit process by continuously and significantly changing audit practices (Ali Ahmed, 2022: 23).

Many studies have indicated that the risk-based audit approach has the ability to conduct focused tests at the level of the internal control system, using high-precision analytical procedures, instead of conducting detailed tests on a large scale, as the focus is on the risks that the entity may be exposed to and that cause it not to achieve the objectives, instead of focusing on data risks only (Kachelmeier, et.al., 2014; Jim, p., 2016)

The audit plays an important role in managing the various risks faced by facilities of different types by providing recommendations and advices to the department in the field of assessing and managing the risks to which these entity's are exposed. This is done by examining the general policy for risk management and verifying that it is in line with the systems and procedures included in the context of this policy, then evaluating the adequacy and effectiveness of monitoring systems and identifying the risks to which the entity may be exposed, identifying weaknesses and deviations that occur in risk management and reporting on them and providing recommendations to address them by preparing reports related to this matter (Nourhan Al-Sayed, 2018: 119).

In light of the great importance of the quality of the audit process and to face the main challenge that facing Supreme Audit Institutions, which is providing high-quality control services, the International Organization of Supreme Audit Institutions (INOSAI) has developed a general framework for the quality control system to help audit institutions maintain the level of quality performance (Auditor publication, 2021: 28). Maintaining an appropriate level of quality in the audit process will have a significant impact on the quality of reports issued by Supreme Audit Institutions in all areas of audit, including their role in improving and developing risk management systems in government entities.

Chapter Four

Chapter Four

The Strategic Role Of Supreme Audit Institutions In Developing Risk Management Systems In Government Entities

Government entities face more risks as a result of the challenges they face under the current circumstances, which is reflected in their performance and the quality of services provided. In this regard, the Supreme Audit Institutions play an important role in increasing the efficiency and effectiveness of the performance of government entities, by evaluating the performance of risk management systems in the government sector and trying to develop and discover modern methods and indicators to measure and evaluate that performance in a manner consistent with the nature of the characteristics of those entities and the risks they face. Evaluating and improving risk management processes is a fundamental task facing the auditing profession, as the internal control system no longer has an independent existence as it did in the recent past, but has become part of the risk management framework.

4/1 The importance of the role of Supreme Audit Institutions in light of the risks facing government entities

Government entities are constantly facing demands for increased transparency, accuracy of performance, rationalization of expenditures, and optimal use of resources. Therefore, these entities and their various activities are always exposed to a range of risks, which reflects the importance of the role of the Supreme Audit Institutions and their risks – based audit, in order to provide confirmation of the effectiveness of the audit systems and the effectiveness and efficiency of the risk management systems within government entities, to raise their efficiency and effectiveness to reduce the risks to which they are exposed, such as the risks of financial corruption such as fraud, deception, theft, embezzlement, and misuse.

The audit has become responsible for verifying the extent of compliance with the systems and procedures included in the general policy for risk management, assessing the adequacy and effectiveness of risk identification systems and measurement systems, assessing the reports prepared by the risk manager on the application of the general framework for risk management and the speed of reporting on addressing them, and assessing the adequacy and effectiveness of internal control systems and objective audit mechanisms to control risks and the accuracy of their measurement (Mervat Ali, 2023: 57).

Supreme Audit Institutions can contribute to develop and increase the efficiency of risk management systems by drawing the attention of these entities to the significant risks that affect the objectives, operations and resources of the entity, through the observations and recommendations found in the audit reports. The audit process also contributes to providing a clear picture of the efficiency of the performance of government entities and provides senior leaders with objective and accurate information on how resources are used and identifying deviations that accompanied performance, which enhances accountability for deviations in performance and contributes to building trust (Walid Ibrahim, 2018: 126).

To clarify the role of the Supreme Audit Institutions to develop risk management systems, a set of factors must be available, the most important of which are:

- The availability of the basic essentials to enable the Supreme Audit Institutions to contribute effectively to increase the efficiency and effectiveness of risk management systems.
- The availability of the basic principles and essentials of correct and effective financial control and accounting in government entities (Walid Al-Rahim, 2018: 126).
- The presence of specific standards for governing of the internal audit function in the government sector, increasing the

efficiency and effectiveness when auditing and evaluating risk management system. This significantly scope, program and cost of the audit process.

- The availability of guidelines that allow the Supreme Audit Institutions to identify risks that threaten auditing in government entities, especially after the move towards electronic government. According to International Standard No. (400) entitled "Risk Assessment and Internal Control", risks may arise due to deficiencies in the operation of electronic information systems (Rasha Ali, 2018: 93).

4/2 The Impact Of The Application Of Professional Standards By Supreme Audit Institutions On The Development Of Risk Management Systems In Government Entities

Studying, analyzing and applying professional standards will lead to increasing the performance quality of Supreme Audit Institutions, including increasing their ability to detect, identify and evaluate the risks facing government entities, such as fraud and corruption risks, and to report on them and provide recommendations regarding them, which will contribute to develop risk management systems in audited entities.

4/2/1 The importance of audit standards for risk management systems in government entities

The International Auditing Standards Committee and professional bodies such as INTOSAI have responded to modern trends in auditing to address the obstacles and risks faced by risk management in entities. Therefore, the importance of audit standards for risk management systems is clear as follows (Ali Ibrahim, 2018: 212):

- The audit standards are an effective means and a good measure for evaluating the professional performance of auditors in Supreme Audit Institutions within the framework of their professional responsibilities.

- The audit standards represent a model to which all members of Supreme Audit Institutions adhere when performing auditing tasks.
- The audit standards specify the technical requirements for preparing audit reports and their basic elements and components.
- The audit standards specify the requirements for personal qualities and self-development that must be available in those who practice the audit profession, which lead to the development of the auditor's professional performance, which helps in quickly discovering fraud and errors, quickly and improving dealing with risks, and developing risk management.
- Auditing standards lead to improve internal control systems, and this leads to improve risk management.

4/2/2 The role of international auditing standards in developing risk management systems in government entities

The external auditor is responsible for disclosing any risks or doubts that threaten the entity being audited. This is considered one of the audit tasks so that these entities can make appropriate decisions at the appropriate time regarding the problems or risks they are exposed to. To this end, and so that the auditor has performed his duties properly, he conducts audit tests and procedures in accordance with generally accepted auditing standards, and exercises sufficient professional care, and his report includes the facts and results he has reached (Salah Nouri and others, 2018: 61).

Examples of the standards that the auditor relies on when identifying and evaluating risks when conducting the audit process (Eman Bin Qara, 2022: 37, 94, Salah Nouri and others, 2018: 61):

- International Auditing Standard No. (ISA 240) entitled "The Auditor's responsibilities relating fraud and error". which addresses the auditor's role

in identifying and assessing the risks of material misstatement resulting from fraud.

- International Auditing Standard No (315) entitled "Identifying and assessing the risks of material misstatement" which referred to the auditor's responsibility to identify and assess the risks of material misstatement, whether due to from fraud or error.
- International Auditing Standard No. (330) "The Auditor's responses to assessed risks", which provides guidance on determining the auditor's responses and designing and performing additional audit procedures to address the risks of material misstatement.
- International Auditing Standard No. (450) entitled "Evaluation of misstatements discovered during the audit", which addresses the auditor's responsibility to evaluate the impact of misstatements discovered during the audit process and the finding of uncorrected misstatements on the financial statements.
- International Auditing Standard No. (610) entitled "Using the Work of Internal Auditors" aims to set standards and provide guidance to auditors when studying the work of internal auditing. The presence of an effective internal audit department based on identifying and assessing risks has an impact on the auditing process, which ultimately leads to improving the performance of departments within the entity, including risk management.

By studying the previous standards, we find that they focus on the risks affecting the entity, which may affect the planning and implementation of the audit process efficiently and effectively, which helps the auditor achieve the following objectives (Naji Najib, 2016: 33, Asmaa Mohamed, 2017: 98):

- Understanding the entity and assessing the risks of significant misstatement through: identifying the risks that the entity may face, determining the

likelihood of the risks occurring, identifying the type of potential misstatements, and then determining the audit procedures that must be taken to detect the risks of misstatements.

- Determine the relative importance of those risks.
- Determining the procedures that must be taken to confront the risks that have been assessed, which contributes to planning the audit and completing the audit efficiently and effectively, which is reflected in improving the risk management systems in the entity.

According to the above, the commitment of Supreme Audit Institutions to apply auditing standards contributes to evaluate risk management and identify deficiencies in the audit tools for each type of risk faced by the government entity, which leads to the development of risk management systems in those entities.

4/2/3 The role of INTOSAI standards (ISSAIs)in developing risk management systems in government entities

The international standards and guidelines issued by the International Organization of Supreme Audit Institutions (INTOSAI) aim to enhance the independence and effectiveness of the audit of member institutions. There is no doubt that this effectiveness will be positively reflected on the entities subject to audit and their various management, including their risk management systems .

Examples of INTOSAI standards that auditors must adhere to when assessing risks, INTOSAI standard (ISSAI 1315), which requires assessing the risks of material misstatement by reaching an understanding of the entity and its environment. Based on the risk assessment, the auditor is required to identify the controls in place that may mitigate or eliminate the risks, and to test the effectiveness of these controls when applied in response to the risks (INTOSAI standard, ISSAI 1330). Auditors are required to develop audit procedures, such

as testing controls and substantive tests. The audit plan must also be audited and approved by the auditors, and – in accordance with INTOSAI standards – the audit plan must be kept up to date until the audit engagement is completed and the audit report is issued.

INTOSAI Standard (ISSAI 1610) also requires the auditor to identify and assess the risks of material misstatements at the financial statement level and the assertion level for categories of transactions, account balances or disclosures, to provide the basis for developing and implementing additional audit procedures.

INTOSAI Standard (ISSAI 1240) specifies what is expected of the auditor regarding fraud when auditing financial statements. This standard describes requirements regarding risk assessment procedures, related activities, response to the assessed risks of material misstatement due to fraud, audit evidence, etc.

INTOSAI Standard No. (ISSAI 200) entitled “Financial Audit Principles” also emphasized a set of risk-related considerations that must be taken into account when the auditor assesses the relative risks to provide a basis for other audit procedures and their implementation.

From the previous presentation, it becomes clear how much INTOSAI standards care about risks, through identifying and assessing risks and then determining audit procedures in light of the process of responding to the assessed risks, and based on the commitment of the Supreme Audit Institutions to these standards, which is reflected in the quality of the observations and recommendations included in their reports, which have a significant impact on developing risk management systems in government entities.

4/3 Challenges and difficulties facing Supreme Audit Institutions in developing risk management systems for government entities

The difficulties facing Supreme Audit Institutions in developing risk management systems are related to internal and external factors (Walid Ibrahim, 2018: 126, Rasha Ali, 2018: 93):

4/3/1 External challenges

- The digital revolution and the transition to a knowledge economy: which resulted in the emergence of many risks that did not exist before, such as electronic transactions and protecting information from viruses and other risks. The role of these institutions has become necessary to evaluate the efficiency of risk management systems in reducing technological risks, which requires increasing the efficiency of their performance and providing expertise that enables the auditor to understand accounting systems based on advanced levels of information technology.
- The phenomenon of globalization and its variables: Although it has not directly affected accounting and audit concepts, it imposes on Supreme Audit Institutions the necessity of developing systems to keep pace with changes to achieve harmony between national standards for auditing and accounting and international standards.
- The emergence of environmental auditing: As a new challenge facing the Supreme Audit Institutions, these institutions have become responsible for assessing the environmental risks of the entity and implementing environmental auditing processes to examine and report on the environmental impact. Thus, verifying the efficiency and effectiveness of risk management systems in reducing the environmental risks that government entities may be exposed to.

- The phenomenon of corruption and its spread: One of the most important risks, limiting its spread is one of the most important challenges facing the Supreme Audit Institutions, as it highlights the importance of the role of these institutions in developing internal control systems and risk management systems to limit the spread of this phenomenon in government entities.

4/3/2 Internal challenges

- Updating audit methods and techniques: With the expansion of the activity of government entities and the increase in the amount of public money, and since the task of audit is entrusted to the Supreme Audit Institutions, the need has emerged to develop and update work methods so that they include among their objectives the necessity of adapting and interacting with the new developments that occur in the audit work environment.
- Developing evaluation and quality systems: The higher the quality of the audit work carried out by the Supreme Audit Institutions, the higher the degree of trust and reliance on the reports issued by them.
- Developing and expanding the audit scope and its requirements: The audit role must expand to include supervision that examines the efficiency of performance for the entities subject to audit, including the efficiency and effectiveness of risk management systems, and assessing the implemented policies and programs. This requires appropriate development in the field of the mechanisms of the audit institutions' work.

4/4 Success factors of Supreme Audit Institutions in developing risk management systems in government entities

The success of the Supreme Audit Institutions in developing risk management systems in government entities depends on a set of factors, some of which are related to the Supreme Audit Institutions, and some of which are related to the government entities subject to audit.

4/4/1 The role of the supreme authorities in developing internal control systems and its impact on risk management systems in government entities

Internal audit is considered a main line of defense to prevent falling into risks. Among the reasons for the interest in having an effective internal control system are the increase in the size of entities and the expansion of their work, which has led to the difficulty in relying on direct audit methods, and the need for a system that helps prevent errors and fraud or reduce the chances of committing them and ensure the accuracy of financial data, which helps in making the right administrative decisions and detecting deviations in preparation for taking corrective measures regarding them (Hoda Al-Dardour, 2023: 60).

The Supreme Audit Institutions seek to achieve the greatest possible efficiency and effectiveness in performing the audit tasks assigned to them through their contribution to develop the internal control systems of the audited entities, which leads to increase the efficiency and effectiveness of risk management systems to reduce the risks surrounding the entity. To achieve this, an integrated and advanced system of internal control systems in government entities must be established, based on a set of pillars represented in (Walid Ibrahim, 2018: 128, Mervat Ali, 2023: 75):

- **A proper audit environment**

  Includes the following elements:

  - Code of Ethics: Management must lay the foundation for a sound ethical environment in government entities by establishing a code of ethics.

- Employing the right people: so that the audit environment is effective in the entity.
- The Organizational structure and defining authorities and responsibilities: so that the broad powers of some officials do not lead to the commission of corrupt practices.
- The degree of management participation in audit: The greater the degree of management participation in audit, the more it leads to increase the effectiveness of audit in the entity.

- **Appropriate regulatory controls**

  To reduce risks, the internal control system of government entities must include the following controls:

  - Appropriately separation of duties to reduce the risks of fraud, manipulation and corruption.
  - The existence of an accounting system that allows for the recording of all operations and the availability of appropriate documents and records.

- Effective internal audit: The existence of an effective internal control system helps in creasing the efficiency of risk management systems in government entities, due to their important role in helping the government entity reduce the risks of corruption, fraud, deception, embezzlement and other risks it faces.
- Information and Communication: In order for the internal control system to be effective, leading to an effective risk management system, the government entity must have a good system for communicating information from top to bottom and from bottom to top to disseminate the audit policy within the entity.
- Follow-up: In order for the internal control system to maintain its effectiveness and its role in supporting risk management, it is necessary to

conduct a continuous evaluation and follow-up of the quality of its performance must be assessed and monitored to modify the adequacy of its controls and their effectiveness in detecting risks within government entities.

Developing internal control systems with information technology governance mechanisms to provide security and privacy in the accounting information produced in the financial reports of government entities, and following a regular and disciplined approach to assessing and improving the effectiveness of risk management, has a significant impact on the quality of reports of the Supreme Audit Institutions on government entities (Mervat Ali, 2023: 76).

4/4/2 The impact of using the self-assessment system in assessing audit risks on the development of risk management

To increase the efficiency and effectiveness of risk management systems and reduce the obstacles and difficulties they face, professional bodies have adopted the use of a self-assessment system for audit risks for this purpose, as the American Institute of Internal Auditors (IIA) issued Auditing Standard (2120) entitled "Using Audit Self-Assessment to Evaluate the Adequacy of Audit Processes."

The American Information Systems Audit and Audit Association also issued Audit Procedure No. (5) entitled Self-Assessment of Audit Risks. Using the self-assessment system for audit risks in developing risk management will lead to increased reliance by the external auditor on internal audit work (Ali Ibrahim, 2018: 208).

Self-assessment of audit risks is defined as "the process of enabling the executive management of the entity to examine and evaluate the current audit

systems and design the optimal audit systems necessary to manage risks and achieve the organization's objectives of the entity".

The importance of the self-assessment system for audit risks in improving and developing risk management is evident as follows:

First: The impact of using the self-assessment system for audit risks on the obstacles facing risk management

There are many obstacles that affect the risk management structure of the entities, and the impact of applying the self-assessment system for audit risks can be demonstrated in overcoming these obstacles, which leads to improving and developing risk management in government entities, such as (Jihan Abdel Moez, 2011: 90-97):

- Risk management makes decisions based on personal judgment, which may be subject to error or bias. But with the application of the self-assessment system for audit risks and by holding meetings and interviews with employees and encouraging them to express their observations regarding shortcomings in the procedures and controls of internal control over activities within the entity, this helps to rationalize the management's personal judgment decisions with regard to risk management decisions.
- Cost-benefit analysis is taken into account in risk management decisions and in developing audit systems. With the use of the self-assessment system for audit risks, the return from risk management increases by reducing or avoiding losses and seizing available opportunities, which contributes to achieving a greater return while achieving satisfaction for beneficiaries of goods and services provided by government entities.
- The overriding of senior management of the entity's risk management decisions and audit procedures can be overcome by applying the self-assessment system for audit risks by having the external auditor report on the adequacy and effectiveness of the internal control system as well as the entity's risk management, which prompts senior management to constantly strive to improve and develop the entity's risk management.

Second: The impact of using the self-assessment system for audit risks on the basic elements of risk management

The use of a self-assessment system for audit risks affects the basic elements of entity risk management, represented in:

- The impact of the self-assessment system for audit risks on internal auditing: The concept of self-assessment for audit risks is consistent with modern concepts of internal auditing due to its role in improving planning for the internal audit process and supporting its efficiency by providing a sound basis to ensure the internal control controls of each function and supporting its role in managing risks in the entity (Youssef Salah, 2013: 119).
- The impact of applying the self-assessment system for audit risks on senior management: This is done by strengthening the relationship between governance and effective audit systems and helping the risk management manager to follow up on work procedures related to identifying and assessing risks and audit systems, and working to confirm the management's commitment to developing risk management systems.
- The impact of applying the self-assessment of audit risks on external auditing: The application of the self-assessment of audit risks results in the Risk Management manager and the Audit Department informing the external auditor of whether the audit systems are working well or not. The external auditor also uses the self-assessment of audit risks in all areas except for basic verification tests (Ali Ibrahim, 2018: 199).

  The self-assessment of audit risks also affects the work of the external auditor, including meeting the requirements of the Sarbanes-Oxley Act, and increasing his reliance on the work of internal audit and strengthening the relationship between them.

Third: The positives and determinants of self-assessment of audit risks and its impact on the development of risk management

- The correct application of the self-assessment of audit risks results in many positives that have an impact on improving and developing risk management, including: creating a strong relationship between the risk management manager and the audit manager, strengthening communications between the various departments within the entity, and strengthening the partnership relationship between the entity and external auditing by having the entity subject to audit evaluate and identify the audit and risk systems.
- There are limitations to apply the self-assessment system for audit risks to develop risk management, including: failure to implement development suggestions leads to the destruction of employees' ambitions and lack of motivation to reduce the effectiveness of discovering audit weaknesses, the possibility of lack of support from senior management, and the decrease in the resources necessary to hold successful workshops (Abdallah Al-Otaibi, 2016: 377).

Fourth: Areas of using self-assessment of audit risks in risk management in the entity

There are many areas of enterprise risk management that are suitable for using self-assessment of audit risks, including (Ali Ibrahim, 2018: 200):

- assessment and identification of audit and risk controls in order to prepare plans for risk management.

- Contribute to planning important projects, as it contributes to the early assessment and identification of risks in order to prepare plans to manage those risks.
- Areas of operating system security, and development of systems databases, networks, documentation of information systems and electronic exchange of data, and call centers.
- Focus on areas of risk and problems that require additional audits, such as using traditional methods of auditing information systems.

From the above, the existence of a system for self-assessment of audit risks helps the auditor to better understand the nature and environment of the entity subject to control and the risks to which it is exposed. It also helps to make appropriate decisions that lead to reducing the possibility of the entity being exposed to crises and risks and providing information about the essential risks and how to deal with them, which helps to increase the efficiency of the performance of risk management systems and develop them.

4/4/3 Coordination and cooperation between the Supreme Audit Institutions and internal audit in government entities

The internal audit process has become a major factor in control and accountability. Therefore, internal audit constitutes an important basis in the internal control system as a safety valve in risk management. Internal auditors work according to a new methodology based on a systematic assessment of the organization's operations and financial reports, in addition to continuously assessing internal and external risks by identifying and analyzing risks that may affect the achievement of its strategic objectives and determining how to manage each type (Everson, et.al., 2018).

Therefore, internal auditing has an important role in the risk management process through analyzing and assessing the methods used to estimate the size of risks

and the likelihood of their occurrence. Here, the role of internal auditing emerges in testing the effectiveness of the internal control system and its role in mitigating or eliminating risks through continuous monitoring of the risk management process and the extent of its implementation in a manner consistent with the plans, strategies and objectives of the entity.

Auditing operations play an important role in managing the various risks faced by government entities. The COSO framework confirmed in 2004 that the audit function can play an important role in managing the entity's risks by providing advice and counsel to management in the field of risk assessment and management, and this is done by doing the following:

- Providing advisory services and suggestions to management in order to formulate the general policy for risk management.
- Evaluating the adequacy and effectiveness of monitoring systems and identifying risks that the entity may be exposed to, quickly reporting them, and working to address them.
- Identifying weaknesses and deviations that occur in risk management to evaluate its effectiveness by preparing reports related to this matter.
- Ensure that the general risk management policy adopted by the entity is consistent with the systems and procedures included in the context of this policy.

To ensure the success of cooperation and coordination between internal audit in government entities (represented by the internal financial controller in government entities included in the general budget) and the Supreme Audit Institution in developing the performance of risk management systems, and achieving more effective control from this cooperation, the following must be done (Irene Akram, 2021: 77):

- Full awareness of the importance of cooperation between them through a better understanding by both parties of the results of each other's work, which leads to a better control process.
- Strengthening mutual capacities through the exchange of ideas and knowledge to enhance control and accountability.
- Promoting a clearer understanding of the problems of government accounting units.
- Introducing a systematic approach to internal control to assess and improve the effectiveness of risk management and control processes.
- Achieving a better dialogue to manage and control the risks that the government sector may face, leading to an effective and focused control process and consequently useful recommendations.
- Organized and open communication between financial and accounting control Institutions and internal auditors to reach a common understanding to achieve coordination and cooperation.

From the above, the importance of the role of internal audit in evaluating and monitoring risk management systems becomes clear. The external auditor relies on this role when planning the audit process. Therefore, one of the audit risks facing the Supreme Audit Institutions is the lack of standards governing the practice of the internal audit function in the government sector, which makes this function lose its effectiveness. In this regard, risk management systems are concerned with assessing risks in the government sector with the aim of controlling them and reducing them to acceptable levels (Rasha Ali, 2018: 93).

4/4/4 Compliance of Supreme Audit Institutions To The Code of Professional Ethics.

The ongoing challenges, changes and risks which faced by government entities have put the Supreme Audit Institutions in a position with these challenges and risks, which has obliged them to work on increasing the quality and development of their audit performance. After the Commitment to implementing auditing standards, especially the standards issued by the INTOSAI organization, is one of those factors affecting the quality of audit work, which in turn affects the government audited entities.

Among these standards is INTOSAI Standard (ISSAI 130) entitled "Code of Professional Conduct" issued by the Auditing Standards Committee of the International Organization of Supreme Audit Institutions (INTOSAI), which provides a set of values and principles on which the ethical behavior of employees of Supreme Audit Institutions is based. The decisions of Supreme Audit Institutions and their staff should be based on five basic ethical values addressed in the standard: integrity, independence and objectivity, competence, professional conduct, confidentiality and transparency. These rules specifically address the responsibilities of Supreme Audit Institutions in promoting and maintaining ethics and values within their institutions (United Nations, 2023: 49).

Several guidelines have been issued to support SAIs in implementing the INTOSAI Code of Conduct. These include the EUROSAI Maturity Model for the Ethical SAI, which aims to provide SAIs with a tool to encourage them to take a step-by-step approach to implementing the requirements of ISSAI 130, identify levels of compliance with the ISSAIs and provide SAIs with a vision on how to move forward. The tool can be used to conduct self-assessments and internal and external audits to identify and

analyse potential weaknesses and recommend measures to improve ethics management (United Nations, 2023: 49).

The adoption and application of regulatory standards is one of the most important factors that help the Supreme Audit Institutions in facing risks and challenges, as they are an important source for the implementation of the audit work, as they provide a minimum level of guidance to auditors that helps them determine the audit steps and procedures that must be applied, and thus they are an important measure of the quality of the results of the audit process. Strengthening the organizational, operational and financial aspects of the Supreme Audit Institutions, developing professional skills and increasing the scientific knowledge of its members through commitment to applying INTOSAI standards, including Standard No. (130), is a comprehensive statement of the values and principles that should guide the daily work carried out by the auditor to ensure the quality of the results of the audit process (Hesham Zaghloul, 2023: 439).

These rules and the specialized courses that employees of the Supreme Audit Institutions receive in this field work to raise awareness of risks. The quality of the performance of the Supreme Audit Institutions and the results of the audit process are reflected in their role in protecting public funds and preventing the risks of corruption, fraud and deception facing some government entities. The quality of performance helps to identify these risks, evaluate risk management and determine response procedures to treat these risks, which ultimately leads to the development of their risk management systems.

4/4/5 Participation of Supreme Audit Institutions in redesigning risk management systems in government entities

Supreme Audit Institutions, through exercising their audit powers and in light of financial and accounting laws and regulations, contribute to redesigning and developing risk management systems in government entities, by verifying the

soundness and integrity of the financial operations of the entities subject to audit, identifying areas for improvement, and proposing the means they deem necessary to achieve these improvements, including proposing the establishment or development of risk management systems to increase the levels and capabilities of risk prevention to which the government entity is exposed.

The audit report can be considered one of the sources of information that government entities can rely on in designing or developing their risk management systems, as it provides recommendations and observations on weaknesses and deficiencies in those systems. The audit process does not stop at the Supreme Audit Institutions submitting their reports and recommendations to the government agencies subject to audit, but rather follows up on the implementation of those recommendations in a way that contributes to enhancing the efficiency and effectiveness of risk management systems and contributing to achieving the strategic objectives of the entity subject to audit.

In application to the role of the Supreme Audit Institutions in redesigning risk management systems with regard to the risks resulting from corruption, the information and technical expertise possessed by the Supreme Audit Institution and the results of the audit of government entities may be very useful when designing plans and strategies to combat and reduce this type of risk as it is one of the basic inputs for the successful design of strategies to combat the risks of corruption. When the Supreme Audit Institutions, with their legal mandate, discover weaknesses in the management systems of ministries and government departments, this is considered a complete prevention of corruption risks and the elimination of any remaining loopholes that may result from such weakness. Avoiding to spend public funds in risky circumstances is an effective way to avoid losses and damage (United Nations, 2023: 35). All of this represents an

important role for Supreme Audit Institutions in improving and developing risk management in government entities.

4/4/6 Developing Knowledge And Capacity Building of Members Of Supreme Audit Institutions In The Field Of Risk Management Systems Audit.

To achieve more efficient and effective performance, Supreme Audit Institutions (SAIs) must develop current and new skills and knowledge and address gaps and weaknesses. To build capacity and provide continuous education, Supreme Audit Institutions can train employees, whether internally or externally, and continuously assess their levels of knowledge and skills, identify weaknesses, gaps and potential training constraints, and determine what employees need to improve the quality of performance.

The challenges and changes facing the Supreme Audit Institutions, including the shift in the field of auditing to risk-based auditing, and the need to build skills, knowledge and awareness among their employees to enable them to discover, identify and evaluate risks and determine procedures to respond to those risks, all of this prompted the International Organization of Supreme Audit Institutions to develop a general framework for the quality control system to help the audit institutions establish an appropriate quality control system that is consistent with their mandate and circumstances and responds to the risks they face, enabling those institutions to provide high-quality audit services. The Supreme Audit Institutions have adopted the elements of the quality control framework included in INTOSAI Standard No. (ISSAI 140), which are (Auditor's Bulletin, 2021: 28):

- **The first element:** Leadership responsibilities related to quality within the Supreme Audit Institutions, where each institution must formulate policies

and procedures designed to promote an internal culture that considers quality to be essential in the performance of all its work.

- **The second element:** Relevant ethical behavior requirements. Each Supreme Audit Institution must formulate policies and procedures designed to provide it with reasonable assurance that the institution, all its employees, and any parties contracted with it to perform work for it are committed to the relevant ethical behavior requirements.
- **The third element:** acceptance and continuity, where each institution must formulate policies and procedures designed to provide it with reasonable assurance that it will perform its control and other tasks only if the institution:
  - Qualified to do the work and has the capabilities, including time and resources, to do so.
  - Can comply with relevant ethical behavior requirements.
  - Has considered the integrity of the audited entity and considered how to deal with risks.
- **The fourth element:** human resources, where each institution must formulate policies and procedures designed to provide it with reasonable assurance that it has sufficient human resources, competence and capabilities, and commitment to the principles of ethical conduct necessary to carry out its tasks in accordance with the relevant standards and applicable legal and regulatory requirements, as well as those necessary to enable the institution to issue reports appropriate to the circumstances.
- **The fifth element:** performing control tasks and other work, as each institution must formulate policies and procedures designed to provide it with assurance that it performs its tasks in accordance with relevant

standards and applicable legal and regulatory requirements and that it issues reports appropriate to the circumstances.

- **The sixth element:** Monitoring/follow-up, where each institution must establish a monitoring process designed to provide it with reasonable assurance that the policies and procedures related to the quality control system are relevant, adequate and operating effectively.

All of the above, including ensuring the quality of the audit process, building the capacities of members of the Supreme Audit Institutions, training them, and developing their skills and knowledge, contributes to improving performance and enhancing the outcomes of the audit process, which contributes to developing risk management systems in the government entities subject to audit.

4/4/7 The Use Of Information and Communications Technology And Data Analysis

There is consensus on the importance of the use of Information and Communications Technology (ICT) by Supreme Audit Institutions to improve the quality of audit process. This requires that auditors be trained on how to use ICT, which in the long run will create an environment in which ICT can fully function as a facilitator of auditing rather than a hindrance.

One tool for achieving consistency between data and improving the quality of analyses is the adoption of systems such as artificial intelligence to conduct automated audit processes. This can increase the quality of data as well as its consistency, and this also requires the availability of certain ICT skills among the staff of the Supreme Audit Institution (United Nations, 2023: 121).

There is a pressing need to integrate data analytics activities using ICT into risk management activities, as the use of data analytics as a control activity to

proactively monitor and analyze fraud and corruption risks is less common than other control activities.

Data analytics includes a set of techniques and methodologies that can be implemented using a variety of tools ranging from simple spreadsheets to specialized software and IT systems designed to facilitate the analysis of big data, helping the auditor to detect and identify risks in the audited entity and to help assess the adequacy of existing controls to address those risks. Information technology is also used in data analysis to help identify the root causes of risks such as corruption, fraud and deception, and to help the auditor provide the necessary control evidence.

A comprehensive ICT policy can lay the foundation for the tools and inputs needed to effectively integrate data analytics into a range of government functions including audit, risk management, and monitoring and evaluation procedures. Data analytics contributes to enhancing the effectiveness of risk management as follows (OECD, 2019: 103):

- High-quality information and data analysis that supports risk assessment helps improve decision-making in the entity.
- Assist risk management to focus on high risk areas.
- Uncover new aspects of threats, trends and opportunities that traditional methods may not detect.

All of the above reflects the impact of the use of Information and Communications Technology and data analysis by Supreme Audit Institutions on the development of risk management systems in audited entities.

4/4/8 Exchange of expertise between Supreme Audit Institutions in the field of audit risk management systems in government entities

International cooperation and exchange of expertise between Supreme Audit Institutions contributes to expanding the scope and impact of measures taken to prevent risks such as corruption risks, whether through the exchange of examples of good practices, information and challenges, or through the development of standards and guidelines that should be adopted and agreed upon.

For example, EUROSAI has undertaken several cooperation initiatives through the EUROSAI Task Force on Audit and Ethics, which has led to the exchange of expertise, skills, knowledge and information. The organization has also developed guidelines on how to conduct audits on ethics and anti-corruption topics. The organization has recently established an ethics network that also covers work on combating corruption risks (United Nations, 2023: 99).

The above shows the role of professional organizations in encouraging the exchange of expertise between Supreme Audit Institutions and each other, and between Supreme Audit Institutions and other entities such as anti-corruption entities and anti-money laundering units. Although the exchange of expertise is limited to corruption risks, this expertise can be used to identify and assess the remaining risks to which government entities are exposed, and to identify and propose areas for improving and developing risk management systems to increase the levels and capabilities of prevention of these risks.

Chapter Five

Chapter Five

Field Study

The field study aims to test and analyze the research hypotheses by addressing the following points:

5/1 The study community and sample

The study community consists of members of the Accountability State Authority. The sample on which the study was conducted includes categories of auditors (executive, supervisory management, middle management, senior management).

5/2 Study hypotheses

The study aims to test the following hypotheses:

(1) The use of the risk-based auditing by Supreme Audit Institutions does not affect their role in developing risk management systems in government entities.

(2) The commitment of the Supreme Audit Institutions to international auditing standards and INTOSAI standards does not reflect on their role in developing risk management in government entities.

(3) There is no relation between providing the requirements for the success of the Supreme Audit Institutions and their role in developing risk management systems in government entities.

(4) There are no difficulties preventing the Supreme Audit Institutions from playing their role in developing risk management systems in government entities.

5/3 Description Of Study Variables

The study variables are as follows:

Y: The dependent variable: is the development of risk management systems in government entities.

X1: The independent variable: is the risk-based audit approach.

X2: The independent variable: is the International Auditing Standards and INTOSAI standards.

X3: The requirements for the success of Supreme Audit Institutions in developing risk management systems in government entities.

X4: The Difficulties preventing Supreme Audit Institutions from playing their role in developing risk management systems in government entities.

5/4 Data Collection Methods

The researcher relied on the following methods to obtain the primary data necessary for the study and to test the hypotheses on:

- A questionnaire as the main tool for data collection.
- Personal interviews to ensure the integrity and understanding of the respondents regarding the questionnaire.

A five-point Likert scale was used to determine the responses of the sample members' with response weights ranging from strongly agree to agree to neutral disagree and strongly disagree, allowing for continuous data collection.

5/5 Statistical Methods Used

The Statistical Package for Social Sciences (SPSS) Version 22 program was used to perform the statistical analysis. The following statistical tests were employed:

- Descriptive Statistics, which includes calculating frequencies and percentages to identify the personal characteristics of sample members in terms of educational qualification, years of experience, and job position.

- Cronbach's Alpha test used, to measure the and reliability and validity of the questionnaire items.
- The average, used to identify the extent to which the responses of sample members are low or high for each paragraph of the questionnaire item.
- Standard deviation : used to identify the degree of dispersion in the responses of sample members'.
- One-sample T Test: used to test the study hypotheses. A hypothesis is accepted if the calculated T value is greater than the tabulated T value, which is equal to (1.993) at a 5% significance level and of 72 degrees of freedom.
- Kruskal-Wallis test, typically used for applying to descriptive data, and used to compare two or more groups in the case of quantitative data This test is applied to identify differences between the opinions of the four organizational levels.
- Chi-square test is considered a measurement of the statistical significance for testing parametric hypotheses and is used to calculate the significance of frequency differences.

5/6 Description Of The Questionnaire

The questionnaire was designed to collect data covering different aspects of the study. It included two sets of questions as follows:

The first group: It includes questions about general and personal data. It aims to collect data related to the personal characteristics of the individuals participating in the study, related to years of experience, organizational level, and educational qualification.

The second group: includes questions about the main variables of the research (X1, X2, X3, X4).

5/7 Analysis Of Study Results

89 questionnaires were distributed, and the number of received and valid questionnaires for analysis was 73.

Table (5-1) Distribution of questionnaire participants according to years of experience

Classes	Number of years of experience				Total
	1- Less than 5	5 -Less than 10	10-15	More than 15	
Number	4	10	22	37	73
Percentage	%5,5	%13,7	%30,1	%50,7	%100

Table (5-2) Distribution of questionnaire participants according to organizational level

Organizational level	Number	Percentage
Executive Management	14	%19,2
Supervisory Management	25	%34,2
Middle Management	28	%38,4
Top Management	6	%8,2
Total	73	%100

Table (5-3) Distribution of participants in the questionnaire according to academic qualification

academic qualification	**Number**	**Percentage**
Above average qualification	0	0
High qualification only	33	%45,2
Postgraduate studies and professional certificates	40	%54,8
Total	73	%100

5/7/1 Reliability Analysis and Stability Test

5/7/1/1 Split-Half Coefficient

Pearson's correlation coefficient was estimated between the average of the odd-ranked questions and the average of the even-ranked questions for each axis. The correlation coefficients were corrected using the Spearman-Brown correction :correlation coefficient according to the following equation

$$\text{Re}\,liability = \frac{2(r)}{1+(r)}$$

where r is the correlation coefficient

Table (5-4) Stability of questionnaire items using the split-half Coefficient

Questionnaire Topics	the correlation coefficient	Stability Test	Significance
Risk-based audit approach	0,856	0,922	0,00
International auditing standards and INTOSAI standards	0,702	0,825	0,00
The Impact of the success requirements of Supreme Audit Institutions on the development of risk management systems in government entities	0,739	0,850	0,00
Difficulties Preventing Supreme Audit Institutions from playing Their Role in Developing Risk management systems	0,444	0,615	0,00

It is clear from Table (5-4) that there are relatively high stability coefficients for the questionnaire items, which enables the researcher to rely on the questionnaire list presented in the study.

5/7/1/2 Testing The Reliability And Stability Analysis Using Cronbach's Alpha.

The Cronbach's Alpha test is used to show the consistency and homogeneity of the variable items used to measure a specific phenomenon. In light of this test, the data collection tool will be reliable.

Table No. (5-5) Reliability Analysis Results

Variable	Numbers Phrases	N. of Items	Cronbach's Alpha	Reliability *
Risk-based audit approach	1-6	6	0,907	0,952
International auditing standards and INTOSAI standards	7-13	7	0,857	0,926
The Impact of the success requirements of Supreme Audit Institutions on the development of risk management systems in government entities	14-21	8	0,902	0,950
Difficulties Preventing Supreme Audit Institutions from playing Their Role in Developing Risk management systems	22-28	7	0,842	0,918
Total variables	1-28	28		

* **Reliability** = positive square root of Cronbach's alpha coefficient

There is a high level of homogeneity and consistency between the variables as the value of alpha approaches one, while there is a lack of homogeneity as the value of alpha approaches zero. Table (5-5) shows a high degree of homogeneity and consistency, reflected on the alpha values among the variables used, which reached between (0.907 - 0.842).

Also, the degree of reliability is high among the variables, ranged between (0.952 - 0.918). This indicates the good selection of the study variables group and the reliability on the results of statistical analyses.

5/7/2 Testing The Study Hypotheses

First Hypothesis Test (X1):

The use of the risk-based audit approach by Supreme Audit Institutions does not affect their role in developing risk management systems in government entities.

Table No. (5-6) One-Sample Statistics

The importance of using the risk-based audit approach	Coding	Mean	Std. Deviation	Std. Error Mean	Rank
The auditor's awareness of the importance of applying the risk-based audit approach, which will lead to an increase in the quality of the audit process.	Q1	3.849	.739	.087	5
The auditor's awareness of the importance of risk management systems in government entities contributes to understanding, identifying, evaluating and managing risks efficiently.	Q2	3.986	.656	.077	2
Assist the auditor in establishing audit procedures that ensure that risks are not spread or are reduced to the lowest possible level.	Q3	4.027	.687	.080	1
Evaluating risk management processes to ensure that the responses used by the entity are appropriate to address the risks of fraud and errors discovered during the audit process.	Q4	3.822	.805	.094	6
It helps to verify the extent to which internal audit is performing its role in assessing risk management.	Q5	3.918	.795	.093	3.5
Improving the link between risk	Q6	3.918	.759	.089	3.5

assessment and the nature and extent of the audit procedures implemented, which contributes to directing time and resources to the most important risks.					
Total	6	3.92	.7422		

From Table No. (5-6), it is clear that the average answers to the phrases of the first hypothesis (X1) range between 4.027 and 3.822, and the general average of the answers is 3.920, which is more than the default average of the set of weights of answers according to the five-point Likert scale, which is equivalent to (3). The standard deviation of the total responses was 0.7422. This confirms the consistency of all responses as well as. The agreement of all sample respondents on the importance of SAIs using the risk-based audit approach, which leads to improving and developing risk management systems in government entities.

To test the validity of the first hypothesis (X1), a one-sample T test is used as follows:

Table No. (5 - 7) One-Sample Test

The importance of using the risk-based audit approach	Test Value = 0					
	t	DF	Sig. (2tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
The auditor's awareness of the importance of applying the risk-based audit approach, which leads to increasing the quality of the audit process.	44.492	72	.000	3.849	3.68	4.02
The auditor's awareness of the importance of risk management systems in government entities contributes to understanding, identifying, evaluating and managing risks efficiently.	51.917	72	.000	3.986	3.83	4.14
Assist the auditor in establishing audit procedures that ensure that risks are not spread or are reduced to the lowest possible level.	50.114	72	.000	4.027	3.87	4.19
Evaluating risk management processes to ensure that the responses used by the entity are appropriate to address the risks of fraud and errors discovered during	40.553	72	.000	3.822	3.63	4.01

the audit process.						
It helps to verify the extent to which internal audit is performing its role in assessing risk management.	42.105	72	.000	3.918	3.73	4.10
Improving the link between risk assessment and the nature and extent of the audit procedures implemented, which contributes to directing time and resources to the most important risks.	44.087	72	.000	3.918	3.74	4.09

From the previous table, it is clear that all statements of the first hypothesis (X1) are significant at a significance level of less than 5%, as the significance level (Sig) is 0.000. Therefore, the previous paragraphs are statistically significance at a significance level of $0.05 \geq \alpha$.The calculated T value is greater than the tabulated T value (1.993) for all the statements of the hypothesis, which means that the null hypothesis is not valid, and the alternative hypothesis is accepted, which is that there is an impact of the use of the risk-based audit approach by the Supreme Audit Institutions on their role in developing risk management systems in government entities.

The Kruskal-Wallis Test and Chi-Square Test can also be used to test the absence of significant differences between the opinions of the four organizational levels of the study sample regarding the impact of the Supreme Audit Institutions' use of the risk-based audit approach on their role in developing risk management systems in government entities.

Table (5-8) Kruskal-Wallis Test

The importance of using the risk-based audit approach	Organizational level	N	Mean Rank	Chi-Square	df	Asymp. Sig.
The auditor's awareness of the importance of applying the risk-based audit approach, which leads to increasing the quality of the audit process.	Supervisory Management	25	32.22	3.677	3	.299
	Middle Management	28	40.75			
	Top Management	6	44.58			
	Executive Management	14	34.79			
	Total	73				
The auditor's awareness of the importance of risk management systems in government entities contributes to understanding, identifying, evaluating and managing risks efficiently.	Supervisory Management	25	33.88	15.038	3	.002
	Middle Management	28	32.41			
	Top Management	6	61.92			
	Executive Management	14	41.07			
	Total	73				
Assist the auditor in establishing audit procedures that ensure that risks are not spread or are reduced to the lowest possible level.	Supervisory Management	25	30.48	5.738	3	0.125
	Middle Management	28	38.48			
	Top Management	6	46.17			
	Executive Management	14	41.75			
	Total	73				
Evaluating risk management processes to ensure that the responses used by the entity are appropriate to address the risks of fraud and errors	Supervisory Management	25	37.72	2.200	3	0.532
	Middle Management	28	35.82			
	Top Management	6	28.33			
	Executive Management	14	41.79			

discovered during the audit process.	Total	73				
It helps to verify the extent to which internal audit is performing its role in assessing risk management.	Supervisory Management	25	29.22	9.201	3	0.027
	Middle Management	28	37.20			
	Top Management	6	51.75			
	Executive Management	14	44.18			
	Total	73				
Improving the link between risk assessment and the nature and extent of the audit procedures implemented, which contributes to directing time and resources to the most important risks.	Supervisory Management	25	30.24	5.274	3	0.153
	Middle Management	28	41.13			
	Top Management	6	43.08			
	Executive Management	14	38.21			
	Total	73				

It is clear from the results of the Kruskal-Wallis Test that the statements of the first hypothesis are not significant, which confirms that there are no significant differences between most of the opinions of the study sample regarding the impact of the use of the Supreme Audit Institutions of the risk-based audit approach on their role in developing risk management systems in government entities.

Testing the second hypothesis (X2).

The commitment of the Supreme Audit Institutions to international auditing standards and INTOSAI standards is not reflected in their role in developing risk management in government entities.

Table No. (5-9) One-Sample Statistics

Supreme Audit Institutions' Commitment to International Auditing Standards and INTOSAI Standards	Coding	Mean	Std. Deviation	Std. Error Mean	Rank
The standards increase the auditor's awareness of the importance of identifying and assessing risks and determining response actions.	Q7	4.027	.833	.097	4.5
The standards represent a model that members of Supreme Audit Institutions adhere to when audit risk management systems.	Q8	4.301	.739	.087	3
The standards specify technical requirements for preparing audit reports, including reports on weaknesses and deficiencies in risk management systems.	Q9	3.795	.865	.101	7
The standards specify the requirements for the personal qualities and self-composition of the auditor, which lead to the development of the auditor's professional performance, which helps in quickly detecting the risks of fraud and deception.	Q10	4.452	.688	.081	2
Adherence to the standards increases the efficiency and effectiveness of internal control systems, which is reflected in improving risk management systems.	Q11	4.548	.528	.062	1
Compliance with standards increases the quality of performance of the risk-based audit.	Q12	3.863	.732	.086	6
The standards provide guidance regarding the auditor's responsibility to obtain reasonable	Q13	4.027	.799	.093	4.5

assurance that the financial statements are free from material misstatement resulting from risks of fraud and misrepresentation.					
Total	7	4.145	0.8607		

From Table No. (5-9), it is clear that the average answers to the phrases of the second hypothesis (X2) range between 4.548 and 3.795, and the general average of the answers is 4.145, which is more than the default average of the set of weights of answers according to the five-point Likert scale, which is equivalent to (3). The standard deviation of the total answers amounted to 0.8607, which confirms that the answers to all the phrases are not dispersed. The agreement of all sample items also confirms that the Supreme Audit Institutions' commitment to international auditing standards and INTOSAI standards reflects their role in developing risk management in government entities.

To test the validity of the second hypothesis ((X2), a one-sample T test is used as follows:

Table No. (5-10) One-Sample Test

Supreme Audit Institutions' Commitment to International Auditing Standards and INTOSAI Standards	**Test Value = 0**					
			Sig. (2tailed)	**Mean Difference**	**95% Confidence Interval of the Difference**	
	t	**df**			**Lower**	**Upper**
The standards increase the auditor's awareness of the importance of identifying and assessing risks and determining	41.315	72	.000	4.027	3.83	4.22

response actions.						
The standards represent a model that members of Supreme Audit Institutions adhere to when audit risk management systems.	49.700	72	.000	4.301	4.13	4.47
The standards specify technical requirements for preparing audit reports, including reports on weaknesses and deficiencies in risk management systems.	37.464	72	.000	3.795	3.59	4.00
The standards specify the requirements for the personal qualities and self-composition of the auditor, which lead to the development of the auditor's professional performance, which helps in quickly detecting the risks of fraud and deception.	55.287	72	.000	4.452	4.29	4.61
Adherence to the standards increases the efficiency and effectiveness of internal control systems, which is reflected in improving risk management systems.	73.576	72	.000	4.548	4.42	4.67
Compliance with standards increases the quality of performance of the risk-based audit.	45.060	72	.000	3.863	3.69	4.03
The standards provide guidance regarding the auditor's	43.076	72	.000	4.027	3.84	4.21

responsibility to obtain reasonable assurance that the financial statements are free from material misstatement resulting from risks of fraud and misrepresentation.						

From Table $(5-10)$ it is evident that all the phrases of the second hypothesis $(X2)$ are significance at a significance level of less than 5%. The significance level Sig equals 0.000, so the previous paragraphs are considered statistical significance at a significance level of $0.05\geq\alpha$. The calculated T value is greater than the tabular T (1.993) for all the phrases of the hypothesis, which means that the null hypothesis is invalid, and the alternative hypothesis is accepted, which is that there is an impact of the commitment of the Supreme Audit Institutions to international auditing standards and INTOSAI standards on their role in developing risk management in government entities.

Test of the third hypothesis (X3)

There is no relationship between providing the requirements for the success of the Supreme Audit Institutions and the role of these institutions in developing risk management systems in government entities.

Table No. (5-11) One-Sample Statistics

The impact of the requirements for the success of Supreme Audit Institutions on the development of risk management systems in government entities.	Coding	Mean	Std. Deviation	Std. Error Mean	Rank
The presence of an effective internal control system contributes to increasing the efficiency and effectiveness of risk management systems to reduce the risks surrounding the entity.	Q14	4.027	.912	.107	1
Implementing the control risk self-assessment system helps improve risk management systems by strengthening the partnership relationship between the entity and the Supreme Audit Institution.	Q15	3.288	.790	.092	8
Coordination and cooperation between the Supreme Audit Institution and internal control, given their role in evaluating and monitoring risk management systems.	Q16	3.370	.950	.111	7
The commitment of the Supreme Audit Institutions to implementing the rules of professional conduct is reflected in the quality of the performance of the audit work in identifying and assessing risks and determining the response procedures to treating them, which leads to the development of risk management systems in government entities.	Q17	3.836	.746	.087	3
Supreme Audit Institutions, through the exercise of their audit specializations, contribute to the redesign and development of	Q18	3.671	.765	.090	4

various systems through the recommendations and observations they provide on the shortcomings of these systems.					
Increase knowledge and building capabilities for members of SAIs in the field of auditing risk management systems because of its impact on their development.	Q19	3.479	.852	.100	6
The use of information and communication technology and data analysis by Supreme Audit Institutions in identifying and assessing risks contributes to improving and developing risk management systems.	Q20	3.890	.774	.091	2
Exchange of expertise and experiences between supreme audit bodies in the field of auditing risk management systems in government entities.	Q21	3.589	.761	.089	5
Total	8	3.644	.8219		

From Table No. (5-11), it is evident that the average answers to the phrases of the third hypothesis (X3) range between 4.027 and 3.288, and the general average of the answers is 3.644, which is more than the default average of the set of weights of answers according to the five-point Likert scale, which is equivalent to (3). The standard deviation of the total answers amounted to 0.8219, which confirms that the answers to all the phrases are not dispersed. The agreement of all members of the sample also confirms the existence of a relationship between providing the requirements for the success of Supreme Audit Institutions and the role of those institutions in developing risk management systems in government entities.

To test the validity of the third hypothesis (X3), a one-sample T test is used as follows:

Table No. (5-12) One-Sample Test

The impact of the requirements for the success of Supreme Audit Institutions on the development of risk management systems in .government entities	Test Value = 0					
	t	df	Sig. (2tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
The presence of an effective internal control system contributes to increasing the efficiency and effectiveness of risk management systems to reduce the risks surrounding the entity.	37.712	72	.000	4.027	3.81	4.24
Implementing the control risk self-assessment system helps improve risk management systems by strengthening the partnership relationship between the entity and the Supreme Audit Institution.	35.547	72	.000	3.288	3.10	3.47
Coordination and cooperation between the Supreme Audit Institution and internal control, given their role in evaluating and monitoring risk management systems.	30.300	72	.000	3.370	3.15	3.59

The commitment of the Supreme Audit Institutions to implementing the rules of professional conduct is reflected in the quality of the performance of the audit work in identifying and assessing risks and determining the response procedures to treating them, which leads to the development of risk management systems in government entities.	43.953	72	.000	3.836	3.66	4.01
Supreme Audit Institutions, through the exercise of their audit specializations, contribute to the redesign and development of various systems through the recommendations and observations they provide on the shortcomings of these systems.	41.016	72	.000	3.671	3.49	3.85
Increase knowledge and building capabilities for members of SAIs in the field of auditing risk management systems because of its impact on their development.	34.908	72	.000	3.479	3.28	3.68
The use of information and communication technology and data analysis by Supreme Audit Institutions in identifying and assessing risks contributes to improving and developing risk management systems.	42.950	72	.000	3.890	3.71	4.07

Exchange of expertise and experiences between supreme audit bodies in the field of auditing risk management systems in government entities.	40.308	72	.000	3.589	3.41	3.77

From Table No. (5-12), it is clear that all the phrases of the third hypothesis (X3) are significance at a significance level of less than 5%. The significance level Sig equals 0.000, so the previous paragraphs are considered statistically significance at a significance level of $0.05 \geq \alpha$. The calculated T value is greater than the tabular T (1.993) for all the phrases of the hypothesis, which means that the null hypothesis is invalid and the alternative hypothesis is accepted, which is the existence of a relationship between providing the requirements for the success of the Supreme Audit Institutions and the role of these institutions in developing risk management systems in government entities.

Testing the fourth hypothesis (X4)

There are no difficulties that prevent the Supreme Audit Institutions from playing their role in developing risk management systems in government entities.

Table No. (5-13) One-Sample Statistics

Difficulties preventing Supreme Audit Institutions from playing their role in developing risk management systems in government entities	Coding	Mean	Std. Deviation	Std. Error Mean	Rank
Digital transformation and the resulting emergence of many risks in government entities that did not exist before.	Q22	4.438	.527	.062	1

The phenomenon of globalization and its changes impose on the Supreme Audit Institutions the necessity of developing their systems to keep pace with these changes.	Q23	3.932	.839	.098	7
The emergence of environmental auditing and what it requires in terms of verifying the efficiency and effectiveness of risk management systems in reducing environmental risks.	Q24	4.370	.565	.066	2
The phenomenon of corruption, its spread and its impact on the role of Supreme Audit Institutions.	Q25	4.205	.706	.083	4
Updating the methods and techniques of audit used by Supreme Audit Institutions.	Q26	4.137	.631	.074	5
Developing and expanding the scope of the work mechanisms of the audit institutions, especially the field of auditing risk management systems.	Q27	4.247	.722	.085	3
Availability of qualified expertise and personnel to audit risk management systems in government entities.	Q28	4.000	.764	.089	6
Total	7	4.190	.6868		

From Table No. (5-13), it is evident that the average answers to the phrases of the fourth hypothesis (X4) range between 4.438 and 4.000, and the general average of the answers is 4.190, which is more than the default average of the set of answer weights according to the five-point Likert scale, which is equivalent to (3). The standard deviation of the total answers amounted to 0.6868, which confirms that the answers to all the phrases are not dispersed. It also confirms the agreement of all members of the sample that there are difficulties that prevent

the Supreme Audit Institutions from playing their role in developing risk management systems in government entities.

To test the validity of the fourth hypothesis (X4), a one-sample T test is used as follows:

Table No. (5-14) One-Sample Test

Difficulties preventing Supreme Audit Institutions from playing their role in developing risk management systems in government entities	Test Value = 0					
	t	df	Sig. (2tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Digital transformation and the resulting emergence of many risks in government entities that did not exist before.	72.000	72	.000	4.438	4.32	4.56
The phenomenon of globalization and its changes impose on the Supreme Audit Institutions the necessity of developing their systems to keep pace with these changes.	40.047	72	.000	3.932	3.74	4.13
The emergence of environmental auditing and what it requires in terms of verifying the efficiency and effectiveness of risk management systems in reducing environmental risks.	66.039	72	.000	4.370	4.24	4.50
The phenomenon of corruption, its	50.873	72	.000	4.205	4.04	4.37

spread and its impact on the role of Supreme Audit Institutions.						
Updating the methods and techniques of audit used by Supreme Audit Institutions.	56.053	72	.000	4.137	3.99	4.28
Developing and expanding the scope of the work mechanisms of the audit institutions, especially the field of auditing risk management systems.	50.234	72	.000	4.247	4.08	4.42
Availability of qualified expertise and personnel to audit risk management systems in government entities.	44.747	72	.000	4.000	3.82	4.18

From Table (5-14) it is evident that all the phrases of the fourth hypothesis (X4) are significance at a significance level of less than 5%. The significance level Sig equals 0.000, so the previous paragraphs are considered statistical significance at a significance level of $0.05 \geq \alpha$. The calculated T value is greater than the tabular T (1.993) for all the phrases of the hypothesis, which means that the null hypothesis is invalid and the alternative hypothesis is accepted, which is that there are difficulties that prevent the Supreme Audit Institutions from playing their role in developing risk management systems in government entities.

Results and recommendations

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First: Results

(A) Results of the theoretical study

The theoretical study concluded with a set of results, which are:

- The effective application of risk management in government entities ensures the achievement of the objectives of improving efficiency and increasing performance effectiveness by verifying that the resources of these entities have been managed with the required efficiency and effectiveness.
- Supreme Audit Institutions play a pivotal role in enabling government entities to develop effective and comprehensive risk management systems, which contribute to enhancing institutional performance and reducing risks associated with their operations. This is achieved by providing observations and recommendations to these entities in the field of risk assessment and management.
- Applying the risk-based audit approach has a direct impact on the quality of the audit process and confidence in its outcomes, which is reflected in the development of risk management systems in government entities.
- There is a difference between audit risk and business risks, as well as a difference between audit risk and risk management auditing.
- There is an impact of the stages of the risk-based audit process on risk management systems, and this is evident from the stage of preparing and planning for the audit process, through the stage of implementing the audit and reporting on it, taking into account that the process of identifying and assessing risks is an ongoing process during the stages of the risk-based

audit process, which does not end with reporting on it, but rather what is stated about it is followed up in the audit report.

- There is a relationship between the commitment of the Supreme Audit Institutions to apply the International Auditing Standards and INTOSAI standards and their role in developing risk management systems in government entities. This is done by providing these standards with general guidelines that help the auditor to perform his work in a way that helps him discover and evaluate risks.
- One of the most important objectives of the Supreme Audit Institutions is to develop internal control systems in government entities to reduce the risks of fraud, deception and misuse of resources. This requires a sound control environment, effective regulatory controls and internal control, and a good information, communication system, and follow-up.
- Self-assessment of control risks is an effective means of identifying control gaps that threaten the achievement of government entities' objectives. Implementing the self-assessment of control risks system helps address risk management obstacles, which leads to improving and developing its performance.
- One of the factors for the success of the Supreme Audit Institutions in developing risk management systems is the effective cooperation and coordination between them and the internal audit of government entities.
- The commitment of members of the Supreme Audit Institutions to the rules of professional conduct impacts on improving and developing risk management systems by identifying and assessing material errors in the financial data and reducing the risks of the audit, which contributes to increasing confidence and credibility in financial information and data.

- The Supreme Audit Institutions, through exercising their audit powers and in light of the financial and accounting laws and regulations, contribute to the redesign and development of risk management systems in government entities, by verifying the soundness and integrity of the financial operations of the entities subject to audit, identifying areas for improvement and proposing the means they deem necessary to achieve these improvements, including proposing the establishment or development of risk management systems to increase the levels and capabilities of risk prevention to which the government entity is exposed.
- Building knowledge and capacity for members of Supreme Audit Institutions is a prerequisite for their success in the field of reviewing, evaluating and developing risk management systems.
- Increasing knowledge and building capabilities for members of SAIs is one of the components of their success in reviewing, evaluating and developing risk management systems.
- The use of information and communication technology and data analysis by Supreme Audit Institutions helps in improving and developing risk management in government entities.
- Exchanging expertise among Supreme Audit Institutions in the field of auditing risk management systems in government entities contributes to increasing the efficiency and effectiveness of the performance of these institutions in improving and developing risk management.

(b) Results of the field study

Through this study, the researcher concluded several results, including:

- The null hypothesis is invalid, and the alternative hypothesis is accepted, indicating is that there is an impact of using of the risk-based audit

approach by the Supreme Audit Institutions on their role in developing risk management systems in government entities.

- The null hypothesis is invalid, and the alternative hypothesis is accepted, indicating that there is an impact of the commitment of the Supreme Audit Institutions to international auditing standards and INTOSAI standards on their role in developing risk management in government entities.
- The null hypothesis is invalid, and the alternative hypothesis is accepted, indicating that there is of a relationship between providing the success requirements for Supreme Audit Institutions and their role in developing risk management systems in government entities.
- There are difficulties facing the Supreme Audit Institutions their role in developing risk management systems in government entities, the most important of which is the digital transformation and the resulting emergence of many risks in government entities that did not exist before, followed by the emergence of environmental auditing and what this requires in terms of verifying the efficiency and effectiveness of risk management systems in reducing environmental risks, developing and expanding the scope of the mechanisms of the work of the audit institutions, especially in the field of auditing risk management systems, the phenomenon of corruption and its spread and its impact on the role of the Supreme Audit Institutions, updating the methods and techniques of auditing used by the Supreme Audit Institutions, the availability of expertise and qualified personnel to audit risk management systems in government entities, Finally the phenomenon of globalization and its variables impose on the audit institutions the necessity of developing their systems to keep pace with these changes.

Second: Recommendations

Based on the results reached, the researcher recommends the following:

- Spreading awareness among those responsible for risk management about the importance of risk management and its positive impact on the performance and value of government entities, In addition to activating the role of risk management workers, educating them, developing their efficiency, and informing them with the tasks required to confront the continuous changes in the surrounding environment through more training programs and related workshops.
- Focusing on establishing an integrated framework for risk management in order to achieve goals, avoid crises, and increase the effectiveness and efficiency of performance in government entities, Considering the risks they are exposed to as opportunities to achieve which their goals and exploited.
- The need for Supreme Audit Institutions to focus on applying international or local auditing standards and INTOSAI standards, as this contributes to increasing the quality of the auditing process and increasing its effectiveness in improving and developing risk management in government entities.
- The need for the Supreme Audit Institutions to organize specialized training courses and scientific seminars on how to audit and evaluate risk management systems in government entities, and how to use the risk-based audit approach in light of the applicable standards and laws.
- The necessity of cooperation between the Supreme Audit Institutions, audit committees and internal auditors in government entities to discover and reduce the risks of fraud and manipulation and control and reduce corruption. With the obligation of internal audit in these entities to develop

and use measures and indicators to audit and evaluate the performance of their risk management.

- Applying the self-assessment method of risks in government entities, as it has a positive impact on developing risk management and internal control systems to reduce losses resulting from risks, manage them, and control them.
- The need for the supreme audit bodies to expand their monitoring of the performance of risk management systems within government agencies so that they can provide a sound regulatory environment that helps reduce the risks of corruption, fraud and manipulation.
- The necessity of expanding the Supreme Audit Institutions in the field of auditing the performance of risk management systems within government entities so that they can provide a sound control environment that helps reduce the risks of corruption, fraud and manipulation.

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