

## **The role of internal audit in supporting the competitiveness of enterprises: A field study of a sample of Public economic institutions of the state of Skikda**

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### **Summary:**

The study aimed to identify the extent of the commitment of economic public enterprises in Skikda's state for requirements of the internal audit and its impact on competitiveness. To achieve this purpose the questionnaire was distributed as a tool for collecting information (42) questionnaire were subjected to SPSS V20, In analyzing the data, the researcher used descriptive statistical tools to test the study hypothesis in addition to multiple linear regression analysis.

The study came out with the following conclusions: the economic public enterprises in Skikda's state are committed to applying all the requirements of the internal audit in the level of significant 0.05, and found also a statistically significant Impact at 0.05 level to apply the internal audit requirements to the competitiveness of economic public enterprises in Skikda's state.

**Key words:** Internal Audit, International internal auditing standards, code of Ethics, Competitiveness of economic enterprises.

### **Introduction:**

Economic institutions nowadays are characterized by their large size and multi functionality, which has led to more attention to the internal audit function, which is considered an independent evaluation activity in the institution, aimed at giving a fair and honest picture of the status of the institution among various parties dealing with it, and this is through the services provided by internal audit, represented in verifying the correctness and accuracy of accounting data, protecting the organization's property from manipulation, fraud and fraud, following up on the approved plans, policies and procedures and evaluating them, discovering strengths and providing the necessary potentials to strengthen them and weaknesses, working to address them, identifying responsibility centers, as well as raising the efficiency of employees, and all the above-mentioned It would support the competitiveness of economic enterprises.

### **The problem of studying:**

The inability of Algerian economic institutions to compete in global and even local markets has made Algeria think about new policies and strategies in order to raise its competitiveness, through the provision of supporting infrastructure services to the commodity and service sectors, the clarity and transparency of laws and legislations regulating the appropriate investment environment for various sectors, in addition to creating an appropriate environment that allows its public economic institutions to exercise the internal audit function effectively, as it has an impact on the design and development of the internal control system, measuring and evaluating the efficiency of the use of available resources, as well as contributing to adding value to economic institutions and supporting their competitiveness.

Therefore, through this research paper, we will try to find out the extent to which public economic institutions in the state of Skikda comply with internal audit requirements, and the impact of this on their competitiveness. Based on the above, the problem of the current study can be formulated in the following two questions:

- To what extent are the public economic institutions of the state of Skikda committed to providing the requirements for practicing the internal audit profession at a morale level of 0.05?
- Is there a statistically significant impact at a morale level of 0.05 of compliance with internal audit requirements on the economic competitiveness of public institutions in the state of Skikda?

### **Study hypotheses:**

Based on the questions posed earlier, the following hypotheses can be formulated:

- Public economic institutions of the state of Skikda do not comply with the requirements of internal audit at a morale level of 0.05.
- There is no statistically significant impact at a morale level of 0.05 of compliance with internal audit requirements on the economic competitiveness of Public Enterprises in the state of Skikda.

### **The importance of studying:**

the importance of studying is shown by the following points:

- The increasing importance of internal audit in economic institutions as a result of developments in economic institutions?
- The urgent need for economic institutions to apply internal audit to help them perform their activities properly?
- The study contributes to clarifying the extent to which internal audit contributes to improving the competitiveness of economic institutions.

### **Objectives of the study:**

the study aims to achieve the following:

- Definition of internal audit as defined by the most important international organizations;

- To identify the reality of the application of internal audit in the public economic institutions of the state of Skikda;
- Knowledge of the competitiveness of the economic institution and its indicators;
- Demonstrate the impact of compliance with professional standards of internal audit on the competitiveness of the institutions sample study.

## **First: the theoretical framework of the study**

### **1. Basic concepts about internal audit:**

The establishment of the Institute of internal auditors (IIA) in the United States of America in 1941 contributed to the development of internal audit as a recognized profession. in line with the developments taking place both at the level of practice and in relation to regulatory and legislative texts issued by various entities and bodies that affect the environment and work of internal audit, IIA in June 1999 developed a new framework for professional practice that ensures increasing the level of professionalism in the exercise of this function by maintaining high-level standards of performance, the availability of which is essential for any advanced and successful professional work. This framework includes: the definition of internal audit, the code of ethics that defines the rules of professional conduct of the internal auditor and the standards of professional practice of internal audit activity.

#### **1.1. Definition and characteristics of internal audit:**

The Institute of internal auditors issued on June 29, 1999 its definition of internal audit commensurate with the historical development that has followed this function, as it considered that internal audit as "an independent and objective confirmatory and advisory activity designed to add value to the organization and improve its operations, as well as help it achieve its goals through a systematic and strict approach (disciplined) to assess and improve the effectiveness of risk management processes, internal control and corporate governance (Bertin, 2007, pp20-21). The definition of the Institute of internal auditors includes a number of characteristics that highlight the development in practice of the internal audit profession. We remind of them:

**1.1.1. Internal audit is an activity:** where internal audit is described as an activity and not a job, as it can be carried out by employees from within the organization who are independent of the activities they audit and report administratively to the highest level in the organizational structure of the organization such as the board of directors or the audit committee, there is also the possibility of practicing internal audit from parties.

**1.1.2. The confirmatory nature of internal audit:** it refers to the role of internal audit in providing objective and reasonable guarantees and assurances regarding internal control and risk management systems and the organization's compliance with governance standards and other modern administrative requirements.

**1.1.3. The advisory nature of internal audit:** management benefits from internal audit advisory services through analyses and suggestions that help it make decisions, and that these services have been agreed in advance about their nature and scope, which aims to create added value and improve governance processes, risk management, and internal control without the internal auditor assuming any administrative responsibility. examples of such services include: training and motivating employees and providing advice and advice...Etc.

**1.1.4. Internal audit is an independent activity:** independence means freedom from restrictions that threaten the ability of the internal audit activity to carry out its responsibilities in an unbiased manner. This requires internal auditors to move away from auditing and evaluating activities or functions that were previously under their responsibility, as well as through the internal audit link to an administrative level at the top of the organizational structure of the organization (senior management or audit committee) because this enables him to obtain the cooperation of the audited entities, and his contact with this level in the organization enhances the effectiveness of his work because it provides opportunities to implement the recommendations and suggestions contained in his report.

**1.1.5. Objective internal audit:** objectivity is an unbiased attitude of mind that allows the internal auditor to accomplish his tasks in a way that he is convinced of the results of his work, and that he has not made any significant compromises or concessions. objectivity requires that the internal auditor does not subject his audit judgments to the judgments of others. objectivity also requires that the internal audit work be carried out by experienced and highly qualified professional persons. in contrast, the absence of objectivity loses internal audit meaning and purpose for which it was established.

**1.1.6. Internal audit is a comprehensive activity:** it is no longer limited to financial and accounting aspects only, but it has gone beyond that to become the strategic, operational and administrative aspects of its work and interests.

**1.1.7. Internal audit is based on a strict and organized methodology:** which is considered as a logical and organized process of a set of stages, allowing the internal auditor to collect data, analyze and evaluate them, and then edit the final report containing the necessary recommendations in order to address weaknesses and strengthen strengths. through this methodology, he uses special techniques, indicators and references, the previous stages are called the internal audit task.

## **1.2.Ethical charter:**

any profession should have principles and rules of conduct that guide the actions of its owners towards the society in which they are located and the environment in which they work. The Ethical Charter is defined as "the set of high moral values and behavioral principles that the enterprise and its employees seek to adhere to during the practice of work, and are formulated in the style of" must"," we will comply"," prohibit" or the like, and the charter defines the due rules in the expected behavior or in the prohibited behavior as well, with appropriate penalties in case of non-compliance with those rules " (Balba, 2016, P.320).

The code of ethics contains four basic principles related to the profession and practice of internal auditing, and rules of conduct that describe the behavior expected of internal auditors, as well as explain ethical

principles and help to embody them in practice, these basic principles are: integrity (integrity), objectivity, confidentiality and efficiency.

### **3.1. International standards for the professional practice of internal audit:**

explained (Institute of internal auditors, 2013, p.03) The purpose of issuing standards is as follows: to define the basic principles of internal audit practice, provide a frame of reference for the performance and development of internal audit activity, lay the foundations for evaluating the performance of internal audit, strengthen and improve processes in the enterprise. He classified it (Al-Wardat, 2014, pp. 167-168) into two parts:

**1.3.1 Criteria of qualities (thousand 1000 series):** it deals with the features and characteristics of institutions and individuals performing internal audit activities, and consists of four main criteria, each of which is divided into sub-criteria including objectives, powers and responsibilities (internal audit document), independence and objectivity, efficiency and professional diligence, quality control and improvement programs.

**1.3.2 Performance criteria ( Alvin Series 2000):** describes the nature of internal audit activities and sets qualitative standards by which the performance of internal audit is measured, and consists of seven main criteria, including the management of internal audit activity ( annual plan), the nature of the work, task planning, task execution, delivery of results, monitoring and monitoring stages of completion (follow-up workflow), and the decision of management acceptance of risks.

Both the quality criteria and the performance criteria apply to internal audit services in general. While the implementation criteria (nnnn series.Xn) applies the standards of qualities and performance standards to specific types of activities such as compliance tests, fraud detection and self-control, and the application standards are mainly set for confirmation actions (indicated by the letter A connected to the standard number such as (1130).A1 and for consulting work (indicated by the letter C connected to a standard number such as 1130.C1).

## **2. The concept and dimensions of enterprise competitiveness**

The competitiveness of an enterprise is the result of a set of forces that, through integration among themselves, both inside and outside the enterprise, determine the characteristics of its activity and competitiveness, and that the term competitiveness refers to the product and markets. Accordingly (Gul, 2006, p. 85) defined the competitiveness of the enterprise as "the result of a set of internal and external forces that integrate among themselves in order to demonstrate the ability of the enterprise to face competitors and outperform them in order to reach the desired goals, and that the competitiveness of the enterprise is developed through the acquisition of various competitive advantages, whether internal or external, and: The advantage is lower cost, international quality standards, Total Quality Management based on the needs and wishes of customers and the corresponding quality in the functions of the Enterprise, Innovation, Innovation and technological creativity, and financial indicators such as profitability, appropriate financing, productivity and asset turnover".

Based on the previous definition, any institution must take care of its competitive position, whether in order to protect and preserve it, or in order to develop or strengthen it, and this requires it to gain various internal and external competitive advantages, rationalize the use of its available resources, especially diversify its sources of financing and pay attention to the role of technological innovation. With this, the concept of competitive advantage emerged and developed widely as a means of superiority and distinction from competitors, especially after the appearance of the writings of Michael Porter (Michael Porter), as this concept acquired an important place in the world of business and management, and was defined accordingly as "the critical strategic element that provides a fundamental opportunity for the enterprise to achieve continuous profitability compared to competitors" (Nabil, 2009, p.76).

In the same context, he considered (Mohieddin, 2012, p.81) that the success of organizations in the future will depend on finding new models of competitive advantage, as long as the old models of them have become widely known and available, and that achieving competitive advantage will implicitly or directly generate superior performance in a number of metrics and dimensions, as it works to create value for the organization and its customers.

Summarizing the above, it can be said that the competitive advantage takes many dimensions, including: after the lowest cost, after the quality of products and services provided to customers, after flexibility (product flexibility, mix flexibility, volume flexibility and delivery flexibility), after delivery (speed of delivery, on-time delivery and speed of development) and after technological innovation, innovation and innovation (Mustafa and Ala, 2013, pp. 22-23).

Many organizations have adopted internal audit as a strategic direction that supports their competitiveness by adhering to professional standards of internal audit, which leads to improving the image and reputation of the organization among stakeholders, thereby increasing its market share and strengthening its ability to face competing institutions.

### **3. The contribution of internal audit to supporting the competitiveness of the enterprise**

The development of the internal audit function is a response to developments in the business environment in general. It is also an important control function within organizations, including aspects of operational audit and providing high-technical management consulting, which has increased the importance and contribution of this function to improving the financial performance of the organization and its competitiveness, based on focusing on supporting corporate governance, internal control and risk management, and then improving business and adding value.

**3.1 The role of internal audit in supporting corporate governance:** Internal audit contributes to supporting corporate governance by working to strengthen ethical values and rules in the organization, where the importance of the Ethical Charter is manifested according to (Al-Wardat, 2011, pp. 115-117) in that it contributes to improving social relations in the organization, and it also helps the internal auditor to be beyond all suspicion and to act in all circumstances as a model of ethical requirements, and this is what requires the internal auditor to adhere to high behavioral principles (integrity, objectivity, confidentiality and efficiency) in order to be able to the board of directors, external auditors and management will ensure the delivery of information to these parties.

In this context, the modern definition issued by the Institute of internal auditors in 1999 indicated that the desired role of internal audit lies in the contribution of this function to provide the necessary recommendations to senior management, the board of directors or the audit committee as to whether the institution is moving towards achieving its goals or there are risks and obstacles facing the institution.

The contribution of the internal audit function in supporting corporate governance through the recommendations it provides to senior management, which is reflected in the independent evaluation of the internal control system and the submission of appropriate reports on this, contributing to the design of the internal control system, evaluating the efficiency of administrative processes and procedures, analyzing risks and providing assurances regarding their avoidance and facilitating the self-assessment of risks and control systems by various parties. In addition to providing recommendations to the Audit Committee, which mainly include confirmations regarding the functioning of the internal control system in the enterprise, objective and independent assessment of accounting practices and financial reporting methods, objective analysis of risks related to accounting and control operations and recommendations related to investigations of manipulation and fraud (Dana and Larry, 2003, pp32-33).

Since governance mainly concerns the relationships between the various parties that contribute to the achievement of the organization's goals, it therefore emphasizes the importance of managing the relationship between the internal auditor and the board of directors and the audit committee. One researcher considers that the internal audit relationship with the board of Directors is often not a direct relationship, but rather through the audit committee of the board of directors, but in the absence of an audit committee, the board of directors must perform tasks that ensure the independence and efficiency of internal audit activity (Dahdouh, 2007, pp. 262-263).

The audit committee has several tasks and responsibilities related to internal audit, one of which was mentioned by the researcher (Sameh, 2011, pp. 52-53): Ensuring that the internal audit function works effectively as an independent unit within the organization and that the head of the Internal Audit Department has sufficient freedom to contact the Audit Committee, ensuring that internal audit reports are directed to the appropriate management level with the possibility of discussing the Internal Auditors regarding the content of their reports and verifying the adequacy of the resources allocated to the Internal Audit Department to ensure that the internal auditors perform the tasks assigned to them, and proceeding from this close link between the internal audit and the audit committee, activating the organizational relations between them is one of the most important axes of raising the efficiency of internal auditors, especially if this relationship Auditing the business planning of the Internal Audit Department and directing that department to report to the audit committee.

In addition to all the above, the internal auditor can contribute to the good application of corporate governance by reducing the information asymmetry, he is considered a supervisory mechanism in the organization and is obliged to provide information to managers credible and appropriate to help them make strategic decisions that enable the organization to achieve its goals through the role played by the audit committee in monitoring this information and ensuring its circulation with all transparency, and therefore the role of internal audit in reducing the information asymmetry depends on the establishment of the audit committee or through its association with the board of directors, the audit committee ensures

the credibility of the internal auditor's report, which is submitted to senior management, through which the management About the effectiveness of the internal control system (Abdi, 2008, pp. 151-152).

**3.2The role of internal audit in evaluating the internal control system:** the role of the internal auditor in evaluating the internal control system is aimed at obtaining confirmation that the system is working well and therefore presenting its assessment to the senior management or the audit committee makes it a key participant in the development of the internal control system within the framework of its advisory function, as well as the internal auditor's evaluation of control procedures gives the procedures more strength and ability to ensure the proper use of the organization's available resources to achieve its stated goals, and the existence of an effective and solid internal control system is necessary to ensure the survival and continuity of the enterprise in the midst of the intense competition that characterizes the business environment (kvos, 2010, p.66).

He pointed out (Juma'ah, 2004, pp. 20-21) in this context that internal audit helps in protecting the organization's funds and ensuring the integrity of the management plans developed through the accuracy of the data used by management in guiding the general policy of the organization and contributing to improvements in the adopted administrative and control methods.

**3.3The role of internal audit in risk management:** internal audit plays an important role in dealing with risks, and the Institute of Internal Auditors has pointed out that risk management assessment is considered one of the competencies of the internal auditor, as he is responsible for evaluating the effectiveness of the risk management process and contributing to its improvement through confirmation and consulting services.

In this regard, standard C1.2010 stipulates that "when accepting a consulting assignment, the internal audit officer should take into account the possibility of improving risk management, adding value and improving the organization's operations, and the accepted consulting assignments should be included in the audit plan". The advisory role of the internal auditor in the risk management process is manifested in some essential points, including (maziani, 2010, p.13): acting as a coordinator and mentor for managers and employees during risk management processes as part of self-assessment, working as part of a work team to assist management with the necessary technical expertise, working as a risk management expertise center and providing support in the establishment of a risk management system. In addition to the above, the COSO committee considered that internal audit is an essential mechanism in managing risks, as it works to provide reasonable and objective assurance to the board of directors and senior management about the effectiveness of enterprise risk management activities, and that the core business risks are managed appropriately.

This confirmatory role according to (Ziani, 2014, p160) includes: providing assurance about risk management processes, providing assurance that risk management processes have been evaluated well, evaluating the reporting and communication system about the underlying risks and testing and reviewing the underlying risk management.

Finally, it can be said that the effectiveness of the risk management process has an impact on the value and competitiveness of the organization, as this process requires dealing with current and future



risks in order to minimize their negative effects in order to instill confidence and confidence among shareholders and stakeholders, and this is based on a number of tasks, including (IIA, 2009, p13): Developing a risk management policy and strategy, cooperating at the strategic and operational level with regard to risk management, preparing risk reports and presenting them to the board of directors and stakeholders, discovering and analyzing the risks of each economic activity in terms of its nature, causes and relationship to other hazards, measuring the degree of risk and the likelihood of an accident, determining the size of the loss and choosing the most appropriate way to manage risks according to the appropriate safety and cost degrees.

However, the benefit of the services provided by internal audit is related to the quality of its activities, which reflects the effectiveness of the management and organization of this function in the organization, as the main element in the modern concept of internal audit is independence, which is necessary to achieve its effectiveness and is achieved mainly in the strength of the organizational situation and the support given to it by the management. Standard 1110 (organizational independence) stipulates that the internal audit manager should contact a management level within the company that allows the internal audit activity to carry out its responsibilities (Al-Wardat, P.264).

A good organization of work within the audit department also requires the need to have a set of its own means, the presence of which contributes to the control of work and facilitate tasks, including: the audit document, the audit plan, which is flexible depending on possible unforeseen events, the Audit Manual, Audit files and worksheets.

In addition to the above, the essential role played by the internal auditor requires a good selection of internal auditors to work in the department, and the factor of professional competence and dexterity (standards 1200 and 1210) is one of the basic qualities required for the internal auditor to perform his tasks, and he is also required to improve his knowledge, skills and other competencies through continuous professional development (standard 1230).

It is also necessary for him to have a set of qualities and skills that earn him greater efficiency and give credibility to his activities, and in this he proposed (Prawitt, 2003, pp23-26) a set of skills, the most important of which are: The use of Information Technology, databases, control of statistical methods, accounting procedures and principles, laws and legislation, understanding the principles of environmental management systems and quality management systems, logical thinking, the ability to understand and analyze problems, linking clues to the conclusion, analyzing accounting and financial information, using non-financial evaluation methods in audit work, observation and critical thinking, receptivity to ideas, developing the ability to make judgments, integrity and integrity, intelligence, openness and flexibility, creativity, taking responsibility, bearing pressures, time management, listening and communicating, working as a team, learning from others, influence and motivate, leadership and assistance, solving Conflicts, understanding the nature of the organization's work and communication networks, marketing audit services, Total Quality Management, knowledge of the organization's culture and the strategic composition of the Internal Audit Department's human resources.

## **Second: the field framework of the study**

**1. Study procedures:** In this element, we discuss the study curriculum, the study community and its sample, the study variables and the tools used to measure these variables.

**1.1. Study method:** in order to answer the problem posed in this study and test the hypotheses, we relied on the descriptive and analytical method, as it is considered one of the most appropriate research methods to determine the facts and understand the components of the study with some accuracy and detail in order to determine its various dimensions. The study was based on two methods: the first is theoretical and we reviewed a number of primary and secondary sources, such as books, articles, research published in scientific periodicals, University theses and studies presented to scientific conferences and seminars. this is to clarify the scientific background of internal audit and the competitiveness of the institution and how internal audit contributes to supporting and enhancing its competitiveness. The second method is field-based, where a questionnaire was designed and distributed to the categories of the study sample.

**1-2. Community and study sample:** the study community consists of the public economic institutions of the state of SKIKDA, whatever their activity, which are available on the following categories: board members, internal auditors, executives of the Department of Finance and accounting, as well as the Department of management control and internal audit, where we followed the method of comprehensive inventory by distributing questionnaires to the previously mentioned categories.

As for the sample of the study, it consists of the questionnaires retrieved from the aforementioned categories and valid for analysis, which amounted to 43 questionnaires, 60 questionnaires were distributed, 47 questionnaires were retrieved, and after examining them, 4 of them were excluded due to the incompleteness of the answers in them or for repeating the answer to the same phrase, finally bringing the number of questionnaires valid for analysis to 43. As shown in Table No. (01).

**Table No. (01): number of questionnaires distributed, received and valid for analysis**

Number of questionnaires distributed	60
Number of questionnaires received	47
Number of questionnaires valid for analysis	43
The ratio of questionnaires valid for analysis to received	%91.48
The ratio of questionnaires valid for analysis to distributed	%71.66

**Source:** prepared by researchers based on distributed and retrieved questionnaires

**1.3. Honesty and consistency of the study tool:** in order to test the honesty of the study tool, the questionnaire was presented to specialists from academics and professionals to judge it, and tested on an experimental sample from the study community, and we have made the necessary adjustments based on

their suggestions. The stability of the measuring instrument was also tested using the cronbach's Alpha coefficient for each of the study axes and on the combined study axes, as shown in Table No. (02).

**Table No. (02): results of the cronbach's Alpha equation for the axes of the study**

Topics of the questionnaire	Alpha cronbach
Professional standards due to the performance of the internal audit profession in institutions sample study	0.941
Rules of professional conduct of the internal auditor in enterprises sample study	0.911
Specifications of the Internal Audit Department in institutions sample study	0.624
Tasks of internal audit in enterprises sample study	0.918
Economic competitiveness of Public Enterprises of the state of SKIKDA	0.960
Cronbach's Alpha coefficient for the total axes of the study	<b>0.911</b>

**Source:** prepared by researchers based on SPSS results

We note from Table No. (02) that cronbach's Alpha coefficient in general amounted to 0.911, which is a high stability value, which means that if the questionnaire was distributed again to the same study community, there is a probability of 0.91 to obtain the same results. The values of the cronbach's Alpha coefficients ranged from 0.624 for the variable specifications of the Internal Audit Department of the institutions of the study sample to 0.960 for the economic competitiveness of public institutions in the state of Skikda, as Table No. (02) shows that the values of the cronbach's Alpha stability coefficient for each axis of the study are large and close to the correct one, therefore this result means that the questionnaire has very high stability and credibility and can be relied on in the field application of the study.

**1-4. Statistical processing:** after collecting the data from the study sample, we analyzed it using the statistical software package for Social Sciences (SPSS), where a number of statistical methods appropriate to the nature of this study were used, which are as follows:

- Cronbach's Alpha coefficient for calculating the degree of stability of the study instrument.
- Arithmetic averages and standard deviations for the analysis of variable phrases of internal audit as well as the competitiveness of Public economic institutions of the state of Skikda.
- **Kolmogorov-Smirnov** test to test the extent to which the study data follow the normal distribution at a significance level of 0.05.
- Test **one sample-test** at a morale level of 0.05 to find out the extent to which the institutions of the study sample comply with the requirements of internal audit.
- Multiple regression analysis to test the impact of compliance with internal audit requirements on the economic competitiveness of public institutions in the state of Skikda at a morale level of 0.05.

**1-5. Study variables:** the study consists of two types of variables, namely:

**1-5-1. The independent variable:** it is represented by internal audit in the public economic institutions of the state of SKIKDA, which is expressed by several indicators, the most important of which are: the professional standards due to the performance of the internal audit profession, the rules of professional conduct of the internal auditor, the specifications of the Internal Audit Department and internal audit tasks.

**1-5-2. The dependent variable** is represented by the economic competitiveness of public institutions in the state of Skikda, which is expressed by several indicators, the most important of which are: financial indicators, customer satisfaction and loyalty, product quality and price, innovation, innovation and technological creativity.

## **2. Analysis of questionnaire results and testing of study hypotheses**

In this component, we will present the results of the analysis of internal audit indicators as well as the economic competitiveness of public institutions in the state of Sikkim using arithmetic averages and standard deviations, in addition to testing the study hypotheses using multiple regression analysis at a morale level of 0.05.

**2-1. Analysis of the statements of internal audit requirements:** both the arithmetic mean and the standard deviation of the total of each dimension were calculated, determining the degree of approval for each axis. As shown in Table (3).

**Table No. (3): results of internal audit dimensions**

<b>Internal audit requirements</b>	<b>Arithmetic mean</b>	<b>standard deviation</b>	<b>approval score</b>
Professional standards for the performance of the internal audit profession	4.04	0.52	Agree
Rules of professional conduct of the internal auditor	3.47	0.70	Agree
Internal audit department specifications	3.62	0.64	Agree
Internal audit tasks	4.08	0.43	Agree
<b>Total internal audit requirements</b>	<b>3.80</b>	<b>0.57</b>	<b>Agree</b>

**Source:** prepared by researchers based on SPSS results

It can be seen from Table No. (3) that the average answers of the surveyed respondents about the total internal audit requirements amounted to 3.80, which is within the scope of approval, which means that most of the study sample members adhere to the application of internal audit requirements in the economic public institutions of the state of SKIKDA, which are: internal audit tasks at the first degree, the professional standards due to the performance of the internal audit profession at the second degree,

then the specifications of the Internal Audit Department at the third degree, and finally the rules of professional conduct of the internal auditor at the fourth degree, as the standard deviation of 0.57 indicates that there is Agreement and harmony in the opinions of the study sample members about the answers to questions the questionnaire.

The average answers of the respondents about the internal audit tasks reached a value of 4.08, which is within the scope of approval, which means that the majority of the study sample agrees that the internal auditor in the institutions of the study sample is committed to performing the tasks assigned to him, represented by: His contribution to evaluating and improving the internal control system, identifying risk areas and informing management about them, detecting errors and various forms of fraud and manipulation, promoting ethical culture, developing an annual plan based on risk assessment and audit priorities, auditing all financial and operational operations and Information Systems, verifying the extent to which the set goals have been achieved, communicating his report to senior management and ensuring follow-up on the implementation of the recommendations included in this report.

As for the value of the average answers of the surveyed respondents about the professional standards due to the performance of the internal audit profession 4.04, which is within the scope of approval, it indicates the commitment of the internal auditor in the sample institutions of the study to the professional standards due to the performance of the internal audit profession, this is evidenced by the internal auditor having sufficient knowledge of the professional standards due to perform his duties, receiving continuous training and education on the professional standards due to the performance of his work, following clear and sound professional standards in the internal audit process that comply with international auditing standards with his commitment to exercise professional due diligence when performing the necessary analytical procedures, and holding periodic meetings To the Internal Audit Department to carry out the extent of its performance of its tasks, as well as through the existence of a written guide approved by the board of directors for the policies and procedures followed in the Internal Audit Department as a guide for the work of employees.

While the average answers of the respondents about the specifications of the Internal Audit Department reached 3.62, which indicates the agreement that the Internal Audit Department in the institutions of the study sample has the physical means such as the audit document, audit plan, Audit Manual, Audit files and worksheets, as well as it relies on some statistical tools such as statistical inspection as well as automated media in the performance of internal audit tasks, but the Internal Audit Department does not have sufficient financial and human resources, especially in light of the large audit files assigned to the Internal Audit Department, as well as its lack of modern technology used by internal audit institutes as well as major Global audit.

As for the average answers of the respondents about the rules of professional conduct of the internal auditor reached a value of 3.47, which indicates the approval that the internal auditor in the institutions of the study sample adheres to neutrality, integrity and confidentiality when performing his work and avoids any conflict that could affect the interests of the institution, the adoption of the internal auditor in completely about the rest of the activities However, the internal auditor does not have real independence, he does not have full powers and absolute freedom to do his work, as he is under pressure from a decision-

making authority (senior management) during the audit process and during the writing of his report. The absence of independence in the work of the internal auditor can limit the quality of his work and the internal audit function loses its effectiveness.

**2-2. Analysis of the terms of competitive dimensions of enterprises sample study:** the results of competitive dimensions of hydrocarbon pole enterprises for the state of Skikda are summarized in Table No. 4.

**Table No. (4): description of the competitiveness of Public economic institutions of the state of Skikda**

Competitive dimensions of the enterprise	Arithmetic mean	standard deviation	approval score
Financial indicators	3.86	0.81	Agree
Non-financial indicators	3.78	0.79	Agree
<b>Competitive Enterprise sample study</b>	<b>3.82</b>	<b>0.80</b>	<b>Agree</b>

**Source:** prepared by researchers based on SPSS results

It can be seen from the results of Table No. (4) that the institutions under study seek to achieve competitive advantages to strengthen their competitive position by working to improve their financial indicators primarily such as profitability, obtaining appropriate and timely financing, productivity, turnover of their assets and controlling their costs with an average of 3.86 degrees OK, as these results correspond to the nature of the activity of the institutions sample study, which is predominantly economic in nature and requires focusing on financial indicators and making profit, although the institutions sample study did not neglect the rest of the indicators, most of which are of a social nature, they care about the quality of their products and services provided to its customers and achieve satisfaction and loyalty. However, its interest in innovation, innovation and technological innovations remains modest compared to international organizations that have achieved excellence and excellence in their field of activity, and in light of the increasing intensity of competition at the local and global levels.

**2-3. Regression analysis and testing of study hypotheses:** we will test the extent to which the study variables follow the normal distribution.

**2-3-1. Normal distribution test:** the Kolmogorov-Smirnov test was used to test the extent to which the study data follows the normal distribution, where the data follows the normal distribution if their significance levels are greater than the acceptable significance level of 0.05. Table no. (05) shows the results of this test.

**Table no. (05): K-s test for examining Corporate Social Responsibility and competitiveness data**

Statements	Arithmetic mean	standard deviation	K-S value	level of significance

Professional standards for the performance of the internal audit profession	4.04	0.52	1.332	0.074
Rules of professional conduct of the internal auditor	3.47	0.70	1.228	0.098
Internal audit department specifications	3.62	0.64	1.339	0.063
Internal audit tasks	4.08	0.43	1.264	0.082
<b>Competitive Enterprise sample study</b>	<b>3.82</b>	<b>0.80</b>	<b>1.231</b>	<b>0.105</b>

**Source:** prepared by researchers based on SPSS results

The results of Table No. (05) show that all significance levels of all study variables are greater than 0.05, which means that all these data follow the normal distribution.

**2-3-2. Testing the first sub-hypothesis:** the first nihilistic sub-hypothesis states:"public economic institutions of the state of Skikda do not comply with internal audit requirements at a morale level of 0.05". To test this hypothesis, One Sample T-test was used, where we reject the nihilistic hypothesis (zero) if the level of significance is less than the level of theoretical significance 0.05. The results of this test are summarized in Table No. 6.

**Table no. (06): results of the internal audit requirements test for institutions sample study**

Internal audit requirements	Arithmetic mean	standard deviation	Degree of freedom	t-value	level of significance
Professional standards for the performance of the internal audit profession	4.04	0.52	41	38.09	0.000
Rules of professional conduct of the internal auditor	3.47	0.70	41	35.64	0.000
Internal audit department specifications	3.62	0.64	41	61.59	0.000
Internal audit tasks	4.08	0.43	41	43.37	0.000
<b>Total internal audit requirements</b>	<b>3.80</b>	<b>0.57</b>	<b>41</b>	<b>58.94</b>	<b>0.000</b>

**Source:** prepared by researchers based on SPSS results

It is clear from Table No. (06) that the average degree of compliance of Public economic institutions of the state of Skikda with the requirements of internal audit was 3.99, which is greater than 3 and with a standard deviation of 0.44.the T-test showed that this average is statistically significant as the level of

significance (0.000) is less than 0.05, which means that there is a commitment by public economic institutions of the state of Skikda to provide the requirements for practicing the internal audit profession. The above table also shows that the significance levels of the T-test for each dimension of the internal audit separately are equal to (0.000) and are lower than the significance level of 0.05.

Thus, we reject the first nihilistic sub-hypothesis and accept the first alternative sub-hypothesis, thus the public economic institutions of the state of Skikda comply with the requirements of internal audit separately.

**2-3-3. Testing the second sub-hypothesis:** the second nihilistic sub-hypothesis states: "there is no statistically significant effect at a morale level of 0.05 of compliance with internal audit requirements on the economic competitiveness of Public Enterprises of the state of Skikda". This hypothesis is accepted if the significance level is greater than 0.05.

The estimated model of the multiple linear regression of the relationship between the requirements of internal audit and the competitiveness of Public economic institutions of the state of Skikda is given according to the results of Table No. (07).

**Table No. (07): multiple regression model of the relationship between internal audit requirements and the competitiveness of institutions sample study**

Model parameters	B	T	level of significance	R	R <sup>2</sup>
The constant	+2.243	+1.850	0.000		
Professional standards for the performance of the internal audit profession	+0.403	+1.889	0.067		
Rules of professional conduct of the internal auditor	+0.218	+1.090	0.283	0.525	0.275
Internal audit department specifications	+0.725	+2.582	0.014		
Internal audit tasks	+0.147	+0.686	0.497		

**Source:** prepared by researchers based on SPSS results

The results of Table No. (07) show that there is a direct relationship between the internal audit requirements and the economic competitiveness of public institutions in the state of Skikda. increasing these dimensions separately by one unit, respectively, led to an increase in the economic competitiveness of public institutions in the state of Skikda by values of 0.403, 0.218, 0.725 and 0.147 units, respectively. Since the value of R= 0.525, it explains the existence of a direct linear correlation between the internal audit requirements and the competitiveness of the study sample institutions, and the value of R<sup>2</sup> indicates that 27.5% (0.275) of the change in the competitiveness of the study sample institutions is due to the change in internal audit requirements.



To confirm the overall significance of this model, ANOVA variance analysis ( TESTF-Test) was used at a significance level of 0.05, if the significance level of the multiple regression model is less than or equal to 0.05, we accept the model, and in the opposite case, we reject it. The results obtained are summarized in Table (8).

**Table no. (08): testing the overall morale of this estimated model of the study**

Statement	sum of squares	degrees of freedom	averages of squares	F	level of significance
<b>Decline</b>	7.542	4	1.885		
<b>The rest</b>	19.835	38	0.522	3.612	0.014
<b>Total</b>	27.377	42			

**Source:** prepared by researchers based on SPSS results

It is clear from Table No. (8) that the significance level of the F-Test is equal to 0.014, which is lower than the significance level of 0.05, and therefore the model is acceptable, and therefore we reject the second nihilistic sub-hypothesis and accept the second alternative sub-hypothesis that says "there is a statistically significant impact at a moral level of 0.05 of compliance with internal audit requirements on the competitiveness of Public economic institutions of the state of Skikda.

### **Results and suggestions**

The study revealed a set of results, the most important of which can be summarized in the following points:

- The sample institutions of the study are committed to applying the appropriate professional standards to perform the internal audit profession;
- The internal auditor in the institutions of the study sample is committed to integrity, confidentiality and efficiency, but he does not have sufficient independence, as well as his lack of the highest degrees of professional objectivity when performing his tasks, as a result of being subjected to pressure from higher authorities and influenced in his judgments by others, which negatively affects the quality of internal audit;
- The internal auditor is committed to the tasks assigned to him in the public economic institutions of the state of Skikda;
- The sample institutions of the study are committed to applying internal audit requirements at a morale level of 0.05;
- There is joint cooperation and direct communication between the internal auditor and the top management and various departments and interests when performing internal audit tasks in public economic institutions of the state of SKIKDA;

- The Internal Audit Department does not have sufficient financial and human resources to perform its tasks in the institutions sample study;
- The internal auditor submits his report to the senior management after discussing it with them, and also ensures follow-up on the implementation of the recommendations included in his report;
- The failure of the institutions of the study sample to benefit from internal and external advantages that achieve excellence and excellence, in addition to their lack of interest in customer opinions and technological innovations in the development of their products and services;
- There is a statistically significant effect at a morale level of 0.05 for the application of internal audit on the competitiveness of the institutions of the study sample.

In light of the previous results we can make the following suggestions:

- Improve the quality of the internal audit function in the sample institutions of the study by giving them greater independence and objectivity when performing various internal audit tasks;
- Providing adequate human and financial resources to the Internal Audit Department in the institutions of the study sample so that it can perform its tasks effectively;
- Holding training courses for internal auditors in order to provide them with sufficient scientific knowledge of the internal audit standards issued by the Institute of internal auditors, and then the proper practical application of these standards in the institutions sample study;
- The use of technology in the work of the internal auditor in order to reduce effort, cost and time, especially in light of the large number of tasks assigned to this internal auditor on the one hand, and in the absence of a sufficient number of experienced and highly qualified internal auditors on the second hand, and in order to keep pace with the development achieved by the world's leading institutions that rely in auditing their activities on the latest technological methods on the third hand;
- Focusing the efforts of the institutions of the study sample on the internal and external advantages that achieve excellence and distinction, as well as by giving importance to the opinions of customers to technological innovation;
- Work to increase interest in the internal audit function, whether by reviewing its position within the organizational structure of the institutions of the sample study and giving it sufficient real independence, or by supporting it with the material means and financial and human resources necessary to perform internal audit tasks, and this has a positive impact on supporting and improving the competitiveness of Algerian public economic institutions.

## **Footnotes and references**

1-Elisabeth Bertin, 2007, **Audit interne- Enjeux et pratiques à L'international**, Eyrolles édition d'organisation, Paris, France, pp20-21.

2-Mohamed Eid belbaa, 2006, **corporate governance and its role in confronting administrative and financial imbalances**, Arab Organization for Administrative Development, League of Arab states, Egypt, P.320.

- 3-Institute of internal auditors, 2013, **international standards for the professional practice of Internal Audit issued in 2012**, translated by Ziad boudrega (president of the Tunisian Association of internal auditors), Tunisia, P.03.
- 4-Khalaf Abdullah Al-Wardat, 2014, **Internal Audit Manual according to international standards issued by IIA**, al - Warraq publishing and distribution house, Amman-Jordan, first edition, pp. 167-168.
5. Farhat Gul, 2006, **indicators of competitiveness of economic enterprises under economic globalization (the state of Algerian enterprises)**, PhD thesis, specialization of Management, Department of Economic Sciences, Faculty of economic and Management Sciences, University of Algiers, P.85.
6. Khalil Morsi Nabil, 2009, **competitiveness in business**, Egypt, Alexandria Book Center, P.76.
7. Qutub Mohieddin, 2012, **strategic choice and its impact on achieving competitive advantage**, Dar Al - Hamid publishing and distribution, Amman-Jordan, first edition, P.81.
8. Mohamed Shalabi Mustafa, Shoukry Mohamed Alaa, 2013, **the role of social responsibility in increasing competitiveness(a field study applied to Saudi Mobily telecommunications company)**, publications of the Arab Organization for Administrative Development, League of Arab states, Cairo - Egypt, pp. 22-23.
- 9-Khalaf Abdullah Al-Wardat, 2011, **internal audit between theory and practice in accordance with international internal audit standards**, al - Warraq publishing and distribution house, Amman-Jordan, pp. 115-117.
- 10-Hermanson Dana, Rittenberg Larry, 2003, **Internal Auditing and organizational governance**, The Institute of Internal Auditors, Research foundation, Florida, U.S.A, pp32-33.
- 11-Ahmed Hussein Dahdouh, 2007, **the role of internal audit in corporate governance in Syria (field study)**, Irbid Journal of research and studies, Jordan, volume Xi, first issue, pp. 262-263.
- 12-Ahmed Mohamed Riad Sameh, 2011, **the role of audit committees as one of the pillars of governance in improving the quality of financial reports (an applied study on Egyptian pharmaceutical companies)**, Jordanian Journal of Business Administration, Jordan, Vol.07, No. 01, pp. 52-53.
- 13-Naima Abdi, 2008, **the role of control mechanisms in activating the governance of the institution: a case study of Algeria**, a memorandum submitted to complete the requirements of the master's degree, specialization of the institution's Finance, Department of Management Sciences, Faculty of law and Economic Sciences, Kasdi merbah University - Ouargla, pp. 151-152.
- 14-Nawal kafos, 2010, **the extent to which Jordanian public shareholding industrial companies comply with internal control requirements and the impact of this on their financial performance**, madjuster thesis, accounting specialization, College of Graduate Studies, University of Jordan, P.66.

- 15-Ahmed Helmy Juma, 2004, **institutional control and the dimensions of development in the framework of practicing the internal audit profession**, scientific journal of Economics and Commerce, Ain Shams University, Egypt, No. 2, pp. 20-21.
- 16-Noureddine meziani, 2010, **an analytical theoretical study of the role of internal audit in the corporate governance process**, Journal of economic, commercial and Management Sciences, Mohamed Boudiaf University, Messila, No. 04, P.13.
- 17- Abd elhak Ziani, 2014, **Le Rôle de l'audit interne dans l'amélioration de la gouvernance d'entreprise (Cas entreprises algériennes)**, thèse de doctorat en sciences économiques, faculté de sciences économiques et de gestion, université Abou Bekr Belkaid de Tlemcen, p160.
- 18 -The Institute of internal auditors, 2009, IIA position paper: **the Role of internal auditing in Enterprise – wide RISK management**, USA, p13.
- 19-Khalaf Abdullah Al-Wardat, **Internal Audit Manual according to international standards issued by IIA**, Ibid., p. 264.
- 20- Douglas F.Prawitt, 2003, **Managing Internal Audit Function**, IIA Research Foundation, Florida, USA, pp23-26.