

The Role of Internal Auditing in Improving the Economic Performance of the Economic Enterprise — A Field Study at the Annaba Port Enterprise —

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Abstract

This study aims to demonstrate the role played by internal auditing in improving the economic performance of economic enterprises by measuring efficiency and effectiveness indicators, developing internal control systems, activating risk management, and supporting the pillars of corporate governance. The study also addresses the qualitative transformation in the concept of internal auditing, as it has shifted from traditional control to an advisory role that provides solutions and recommendations aimed at ensuring the optimal management of operations. The study adopted a descriptive approach through a documentary review of various references and sources addressing the subject of the study and its variables. To achieve the objectives of the field study, a questionnaire was used as a data collection instrument. A total of 36 questionnaires were distributed to a sample consisting of internal auditing practitioners, financial accountants, and managerial and administrative executives at the Annaba Port Enterprise. Thirty valid questionnaires were retrieved and used for the study. The collected data were processed and the questionnaire results were analyzed using the Statistical Package for the Social Sciences (SPSS), Version 26. The study reached several findings, the most important of which is that internal auditing directly contributes to reducing risks and improving the quality of managerial decisions. The findings also demonstrated that internal auditing improves the enterprise's performance by achieving efficiency and effectiveness.

Keywords: Internal Auditing; Performance Improvement; Economic Enterprise; Efficiency; Effectiveness.

1. Introduction

The internal auditing function has emerged as a modern management tool that has gone beyond the traditional concept of accounting control to become an advisory function aimed at adding real value to the enterprise. Through examining operations, diagnosing deviations, and periodically reviewing the various material, human, and financial resources placed at management's disposal, internal auditing seeks to ensure the soundness, efficiency, and effectiveness of their use in achieving the established objectives. Accordingly, internal auditing seeks to ensure balance within what is known as the efficiency triangle, thereby achieving alignment between means and objectives, effectiveness in attaining results, and efficiency in utilizing available resources. The importance of internal auditing lies in its ability to detect deviations, errors, and irregularities that may arise as a result of the multiplicity of operations and the complexity of information flows within the enterprise. It also plays a role in evaluating the performance of various departments and the extent to which they comply with applicable procedures and laws.

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Consequently, it has become necessary to establish an independent internal auditing function responsible for objectively and systematically monitoring and evaluating various activities and operations.

Performance is considered one of the fundamental concepts in the management of economic enterprises, as it reflects their ability to achieve their objectives efficiently and effectively in an environment characterized by competition and continuous change. The importance of studying performance stems from its role as an essential means of diagnosing the enterprise's situation and identifying its strengths and weaknesses, thereby facilitating improved decision-making and enhancing the quality of management. This necessitates the provision of mechanisms capable of measuring and evaluating performance within economic enterprises, among the most important of which is the internal auditing function.

Furthermore, internal auditing contributes to enabling senior management and capital owners to strengthen control over resources, improve management practices, and evaluate the effectiveness of the internal control system. This, in turn, has a positive impact on the overall performance of the enterprise and enhances its ability to achieve its objectives efficiently and effectively.

2. Research Problem

Based on the foregoing, and in light of the need to improve economic performance through rationalizing operations, increasing efficiency, and promoting the optimal utilization of resources, the research problem is centered on the following main question:

What is the role of internal auditing in improving the economic performance of the Annaba Port Enterprise at a significance level of ($\alpha = 0.05$)?

To answer the main research question, it can be broken down into the following sub-questions:

What is the current state of internal auditing at the Annaba Port Enterprise, according to the opinions of the respondents in the study sample, at a significance level of ($\alpha = 0.05$)?

Is the economic performance of the Annaba Port Enterprise effective in terms of efficiency, productivity, and the economic dimension, at a significance level of ($\alpha = 0.05$)?

Does the internal auditing function contribute to improving the economic performance of the Annaba Port Enterprise at a significance level of ($\alpha = 0.05$)?

3. Research Hypotheses

To answer the research questions and achieve the objectives of the study, the following hypotheses can be formulated: Internal auditing at the Annaba Port Company is characterized by effective organization and independence. It promotes accountability, transparency, and compliance with laws and regulations, making it a fundamental pillar of the company's organizational structure, at a significance level of ($\alpha = 0.05$).

Economic performance at the Annaba Port Company is characterized by effectiveness in terms of efficiency, productivity, and the economic dimension, at a significance level of ($\alpha = 0.05$).

The internal audit function contributes to improving economic performance at the Annaba Port Company, at a significance level of ($\alpha = 0.05$).

4. Research Objectives

This study aims to achieve a set of objectives, the most important of which are:

To identify the concepts related to internal auditing and its development as a tool for evaluating and improving economic performance.

To highlight the importance of internal auditing within organizations.

To identify the dimensions of economic performance within economic enterprises.

To examine and analyze the current state of economic performance at the Annaba Port Company.

To determine the actual role of internal auditing and the extent to which management responds to its recommendations in improving operations and rationalizing the use of resources.

5. Research Methodology and Data Collection Tools

The study adopts the descriptive-analytical approach by presenting and analyzing the main concepts related to internal auditing and economic performance. The empirical component of the study also relies on the descriptive-analytical approach, through a survey of a sample of internal auditing professionals, financial accountants, and managerial and administrative executives at the Annaba Port Company.

A questionnaire was used as the primary data collection instrument, and the collected data were analyzed using the Statistical Package for the Social Sciences (SPSS).

6. Structure of the Study

To comprehensively address the different aspects of the research topic and its variables, the study was divided into four sections, as follows:

Basic concepts of internal auditing.

The concept of performance and its dimensions in economic enterprises.

The role of internal auditing in improving the performance of economic enterprises.

The empirical study: A field study conducted at the Annaba Port Company.

I. Basic Concepts of Internal Auditing

Internal auditing is one of the most important functions within an organization. It represents a consulting and preventive function aimed at monitoring the organization's policies and ensuring compliance with its rules, regulations, and laws.

1. Concept of Internal Auditing

The concept of internal auditing is characterized by diversity and multiplicity due to the variety of bodies and institutions concerned with the profession. Among the most important definitions are the following:

The Institute of Internal Auditors (IIA) defines internal auditing as follows: "Internal auditing is an independent and objective activity that provides assurance and consulting services designed to add value and improve an organization's operations. It helps an organization accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of governance, risk management, and control processes." (Auditors, 2026)

This definition is consistent with the definition provided by the French Institute of Internal Audit and Internal Control (L'Institut Français de L'Audit et de Contrôle Internes – IFACI), which states: "Internal auditing is an independent and objective activity that provides an organization with assurance regarding the degree of control over its operations, offers advice for improving such control, and contributes to value creation. It helps the organization achieve its objectives through a systematic approach to evaluating risk management, control, and governance processes and by making recommendations to strengthen the effectiveness of the measures implemented." (MONDZILA, 2008, p. 08)

Accordingly, internal auditing can be defined as "an independent evaluative function established within an organization to assess its activities and the extent to which its financial and accounting systems are implemented, as well as the compliance of employees at all administrative levels with the policies, plans, and procedures established by management to enhance effectiveness and improve performance. In general, internal auditing aims to evaluate the internal control system at the lowest possible cost and provide senior management with the necessary support and information."

Based on the preceding definitions, internal auditing has a number of characteristics, including:

An independent activity: It is positioned at the highest administrative levels within the organization's organizational structure and reports directly to top management.

An objective activity: The internal auditor must perform his or her duties objectively, without bias or undue influence.

A systematic and organized process: It follows a set of interconnected and sequential stages.

An activity aimed at evaluating control, governance, and risk management processes.

An activity that helps the organization achieve its intended objectives.

Objectives and Types of Internal Auditing

1. Objectives of Internal Auditing

The objectives of internal auditing can be highlighted as follows: (Al-Sawafiri, 2002, p. 46)

A. Protection:

Internal auditing primarily aims to protect the organization's resources and assist management in achieving its objectives by examining and auditing financial and operational activities. This enables senior management to make optimal use of resources and achieve the highest possible level of efficiency and productivity.

B. Development:

Internal auditing aims to propose the necessary measures to correct the results identified during examination and verification, and to provide management with advice and consultancy in order to improve operations and enhance effectiveness. The internal auditor also verifies the extent to which established policies, procedures, and plans are complied with, and ensures the soundness of procedures for safeguarding assets. This contributes to the development of internal control systems and enhances the organization's efficiency.

C. Partnership:

To achieve the objectives of protection and development, the internal auditor must establish an effective partnership with all employees of the organization. Such a partnership enables the auditor to overcome obstacles that may arise for behavioral or psychological reasons and that could hinder the performance of his or her duties. It also helps strengthen cooperation among different departments and ensure the efficient and effective implementation of recommendations and corrective measures, thereby supporting the organization's strategic objectives.

D. Creating Added Value:

Achieving this objective is linked to the ability of internal auditing to add value to the organization through a shared understanding between internal auditors and the beneficiaries of their services of how the internal auditing activity can effectively contribute to improving performance and enhancing the effectiveness of resources, rather than merely functioning as a control activity. (Hajjaj, 2002, p. 199)

2. Types of Internal Auditing

Internal auditing can be classified into several types, as follows:

A. Financial Auditing:

Accounting differs from other modern management techniques in that it has been applied since ancient times, as organizations have traditionally provided financial information in the form of statements concerning their activities, which were certified by a qualified and independent specialist based on audit evidence and supporting documentation. The internal auditor's work was therefore limited to examining accounts and expressing an opinion on the quality of the financial statements. Internal auditing subsequently adopted sampling and test techniques, based on the degree of efficiency and effectiveness of the internal control system. (Boutin, 2003, p. 06)

It should be noted that the relationship between the two is direct: the stronger the internal control system, the smaller the sample size that the auditor needs to examine, thereby saving time and effort.

B. Operational Auditing:

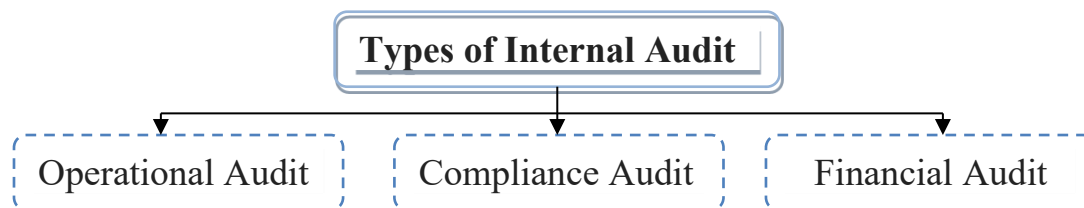
Operational auditing is a comprehensive examination of the organization or operating unit as a whole in order to evaluate its various systems, administrative controls, and operational performance, in accordance with the measurement methods established within management objectives. Its purpose is to determine the efficiency and effectiveness of operational processes. It also aims to identify errors, determine their causes, and establish the measures that should be taken to correct the situation in the future. Operational auditing is referred to by several terms, including administrative auditing, performance auditing, and functional auditing. (Al-Omari, 2006, p. 348)

C. Compliance Auditing:

This type of auditing aims to determine the extent to which the audited organization complies with established administrative policies and applicable laws, as well as the standards used to measure such compliance. The review of income tax returns, for example, represents a clear form of compliance auditing, whereby the tax authority determines the extent of compliance required of organizations with tax laws.

The following figure summarizes the above:

Figure No. (01): Types of Internal Audit



Source: Prepared by the researcher.

1. Internal Auditing Standards

Internal auditing standards serve as a guiding framework for the internal auditor in carrying out his or her duties. They constitute an essential element in enhancing the effectiveness of internal auditing; however, their actual impact is demonstrated through their practical application within the organization.

A. Attribute Standards

Academic and Professional Qualifications: The auditor must possess the competence and experience required to perform the audit engagement. If these qualifications are not available, the auditor should develop the necessary skills, assign the engagement to a more competent auditor, or decline the engagement. (Emerson, 1989, p. 54)

Independence and Objectivity: The auditor's independence from the activities being audited is an essential condition for the credibility of the auditor's opinion. Audit results have value only when they are issued by an independent and objective auditor. **(Al-Shishani, 2007, p. 116)**

Due Professional Care: The auditor must perform the work with the highest degree of professional care, while adhering to professional ethics and ensuring the proper application of performance and reporting standards. **(Amer, 2018)**

B. Performance Standards

Scope of Work: This includes examining and evaluating the effectiveness of the internal control system, the extent of compliance with policies and laws, the protection of assets, the efficient use of resources, the achievement of objectives, and ensuring the reliability of information. **(Abdullah, 2012, p. 149)**

Planning and Supervision: Audit engagements should be planned in advance, taking into consideration an understanding of the nature of the organization's activities, its organizational and financial structure, its production and distribution methods, and the accounting principles adopted.

Evaluation of the Internal Control System and Risk Management: This involves identifying and assessing financial and operational risks, protecting assets, ensuring compliance with laws, and providing management with advice on how to address such risks at the lowest possible cost. **(Kawasmiya, 2017, p. 112)**

Management of the Internal Audit Department: This involves organizing and directing the department's activities, ensuring the effective use of resources, and complying with professional performance standards in a manner that serves the organization's objectives and the orientations of senior management. **(Al-Khatib, 2010, p. 117)**

2. Internal Audit Methodology

The internal audit engagement is conducted according to a specific methodology that provides a framework for the auditor's work through successive and interconnected stages, using various tools and techniques.

A. Stages of Conducting an Internal Audit Engagement

The internal audit engagement is carried out through several stages, as illustrated in the following table:

Table No. (01): Stages of Conducting an Internal Audit Engagement

Stage	Main Activities
Planning Stage	- Preparing the audit plan: Based on risks, while taking into account the orientations of senior management and the Board of Directors. - Defining the objectives and scope of the engagement. - Selecting the audited entity and the audit team. - Conducting a preliminary survey: To understand the nature of operations, identify risks, and evaluate the internal control system. - Preparing the audit program: Including the objectives, scope, time schedule, and allocation of resources, subject to approval by the Internal Audit Manager. - Evaluating the efficiency and effectiveness of the internal control system: Including the integrity of information, compliance with laws and policies, protection of assets, and efficient use of resources. (Al-Wardat, 2006, p. 511)
Fieldwork Stage (Examination)	- Collecting audit evidence using various techniques, including sampling, observation, inspection, verification, analysis, computation, and inquiry. - Examining operations and balances to identify risks and deviations. - Preparing working papers: permanent files (general information), current files (for each audit engagement), and correspondence files.
Results and Recommendations Stage	- Analyzing the evaluation results and identifying findings. - Including the findings in the audit report: Presenting observations, providing recommendations according to their level of importance, and proposing an action plan for implementing the recommendations. - Assisting management in taking the necessary corrective actions.
Follow-up Stage	Verifying the extent to which recommendations have been implemented within the specified deadlines.

	• Ensuring that management accepts the risks resulting from non-implementation. • Inquiring about implementation measures and granting a deadline for corrective action. • Preparing follow-up reports and submitting them to the relevant authorities.
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Source: Prepared by the researcher, based on: Farida Amzal and Abdelkarim Chenai (2022), “Internal Auditing as a Tool for Improving the Performance of the Economic Institution,” *Journal of Industrial Economics*, Vol. 12, No. 01, pp. 511–540.

A. Tools for Conducting the Internal Audit Assignment

The internal audit assignment relies on a set of tools to ensure the effective and efficient performance of the various tasks involved at each of the aforementioned stages. The following table illustrates these tools.

Table No. (02): Tools for Conducting the Internal Audit Assignment

Item	Main Activities
Inquiry Tools (Interviewing/Questioning)	-Investigation and sampling: Obtaining a general overview of the scope of the assignment. -Interview: Collecting information while respecting the administrative hierarchy, transparency, and impartiality. - IT tools: Excel, Word, and PowerPoint software, as well as internal control questionnaires and risk assessment matrices. - Examination and analysis: Verifying the accuracy of operations and analyzing the causes of errors and deviations.
Description Tools	- Field observation: Directly or indirectly monitoring the implementation of operations. - Organizational structure: Clarifying the distribution of functions. - Narrative description: Documenting procedures orally or in writing. - Segregation-of-duties matrix: Analyzing the allocation of tasks over a specified period of time. - Information flowchart: Illustrating the movement of documents and information among functions. - Audit trail: Retracing operations from their results back to their original sources in order to verify the soundness of management.

Source: Prepared by the researcher, based on: Farida Amzal and Abdelkarim Chenai (2022), “Internal Auditing as a Tool for Improving the Performance of the Economic Enterprise,” *Journal of Industrial Economics*, Vol. 12, No. 01, pp. 511–540.

I. Concept and Dimensions of Performance in Economic Enterprises

The performance of an economic enterprise reflects its overall ability to achieve its established objectives by providing goods and services that meet customers’ expectations at competitive prices, while ensuring business continuity and providing a stimulating work environment. This is reflected by managers through the dual concepts of efficiency and effectiveness.

1. Concept of Performance

Some researchers consider performance to be a responsibility center that measures effectiveness and productivity, where:

Effectiveness: The extent to which the established objectives are achieved.

Productivity: The comparison between the results achieved and the resources used.

Others define performance as the relationship between resources and the results achieved, with an emphasis on the added value that reflects the effectiveness of the enterprise.

Based on the foregoing, performance can be defined as follows: “The extent to which an enterprise is capable of

achieving its desired objectives and attaining results consistent with the established plans through the optimal utilization of the resources placed at its disposal. Accordingly, performance represents the integrated outcome of efficiency, effectiveness, and productivity.”

2. Dimensions of Performance

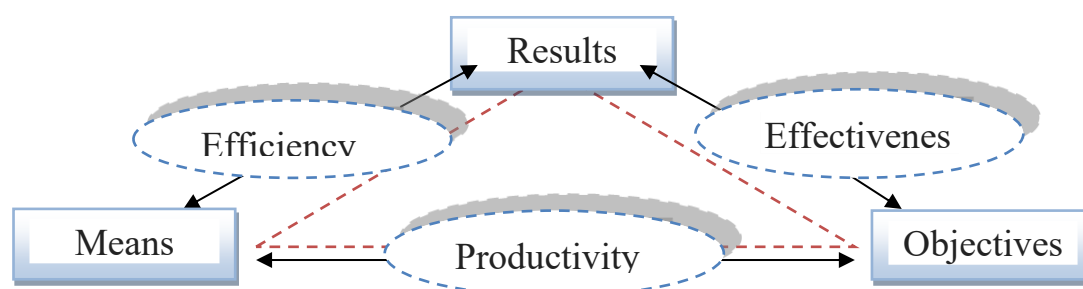
Organizational performance consists of three interrelated dimensions, whose integration contributes to enhancing competitiveness:

Efficiency: Refers to the organization’s ability to perform tasks at the lowest possible cost through the optimal utilization of inputs in order to achieve the maximum possible outputs. It focuses on “doing things right.”

Effectiveness: Refers to the extent to which the organization succeeds in achieving the expected results and the established objectives, regardless of the costs involved. It focuses on “doing the right things.”

Productivity: A quantitative measure that establishes a relationship between the volume of output and the production factors used over a specific period of time. It reflects the organization’s efficiency in utilizing its various resources to achieve the planned return.

Figure No. (02): Dimensions of Performance



Source: Prepared by the researcher.

1. Types of Performance

Organizational performance can be viewed from multiple perspectives based on interrelated criteria, which can be summarized as follows:

Table No. (03): Types of Performance

Criterion	Classification	Description
In terms of comprehensiveness and source	Overall Performance	Reflects the final results of the organization as a whole.
	Partial Performance	Relates to the performance of administrative units and is influenced by internal sources (such as the efficiency of human, technological, and financial resources) and external sources (such as the organization’s interaction with and analysis of environmental variables).
In terms of nature and objectives	Economic Performance	Related to growth, financing, and achieving financial effectiveness.
	Social Performance	Concerns the organization’s responsibility toward society and its employees.
	Technological Performance	Based on innovation and keeping pace with technological developments.
	Political Performance	Links the organization’s objectives to broader strategic orientations.

In terms of operational functions	Procurement and Production	Ensuring the flow of inputs at the lowest possible cost and achieving competitive productivity rates.
	Marketing and Finance	Aimed at gaining market shares, enhancing reputation, and generating sustainable financial flows and profits.
	Human Resources and Research and Development	Developing individuals' capabilities, creating an environment conducive to innovation, and keeping pace with technological developments.

Source: Prepared by the researcher based on: Farida Amzal and Abdelkarim Chenai (2022), *Internal Auditing as a Tool for Improving the Performance of the Economic Enterprise*, *Industrial Economics Journal*, Vol. 12, No. 01, pp. 511–540.

2. Levels of Performance Evaluation

Performance evaluation can be conducted from multiple perspectives to ensure comprehensive coverage of all aspects of the organization. These levels can be classified as follows:

A. Evaluation at the Overall Organizational Level:

This focuses on measuring the organization's overall success through two indicators:

Effectiveness: Measured through the quality and quantity of outputs, adherence to deadlines, profitability levels, and the degree of satisfaction among customers and employees.

Efficiency: Measured through indicators such as return on investment, inventory turnover rates, and achieved productivity in relation to the human and financial resources utilized.

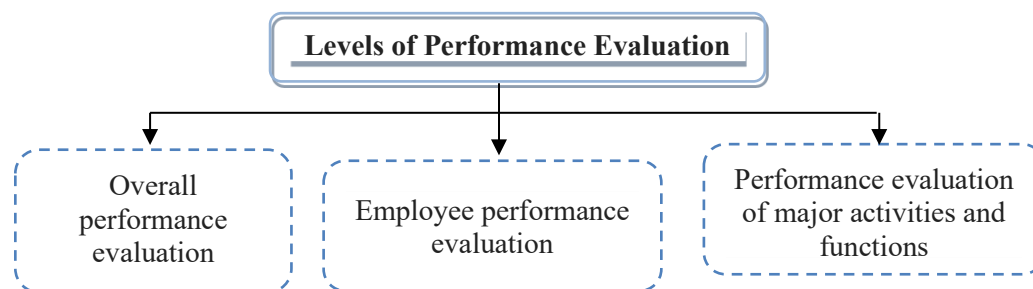
B. Evaluation of the Performance of Major Activities and Functions:

This aims to measure the effectiveness of the organization's key functions, including production, finance, human resources, and marketing. Each function is evaluated according to its contribution to achieving the specific objectives associated with its particular area of activity.

C. Employee Performance Evaluation:

Individual performance constitutes a cornerstone of organizational performance. Therefore, this level of evaluation focuses on measuring employees' competence and skills, as well as their compliance with the professional behaviors and ethical standards established within the performance criteria, in order to ensure that available resources are utilized with the highest possible degree of effectiveness.

Figure No. (03): Levels of Performance Evaluation



Source: Prepared by the researcher.

I. The Role of Internal Auditing in Improving the Performance of Economic Institutions

Internal auditing is no longer merely a tool for detecting errors; rather, it has evolved into an advisory and assurance function that directly contributes to enhancing the value of the institution and ensuring its continuity. This role is manifested through the following areas:

A. Measuring and Improving the Efficiency of Operational Processes:

Internal auditing serves as a mirror reflecting the level of efficiency (optimal utilization of resources) and effectiveness

(achievement of established objectives). This is accomplished through (Ali, 2005, p. 123):

Reviewing the reliability of financial and operational information.

Assessing the extent to which actual results conform to planned programs and objectives.

Relying on quantitative and qualitative criteria to examine individual performance, costs, and production quality.

B. Rationalizing and Supporting Managerial Decision-Making:

The internal auditor contributes to supporting decision-makers through reports characterized by accuracy and credibility. The auditor's role has shifted from merely "detecting fraud" to providing "proactive recommendations." Such advisory services assist management in effective planning, avoiding deviations, and allocating financial resources efficiently (Qahf, 1992, p. 138)

C. Evaluating and Activating the Internal Control System:

The internal auditor plays a vital role in testing the extent of compliance with control procedures and identifying the strengths and weaknesses of the system. Through coordination with the Audit Committee, the auditor ensures independence in activating internal controls and protecting the institution's assets from loss or manipulation (Al-Madalli, 2007, p. 88)

D. Risk Management (According to an Integrated Approach):

The relationship between auditing and risk management is considered reciprocal and proceeds through several stages:

Planning: Identifying critical and risk-prone areas.

Implementation and follow-up: Testing the robustness of internal controls and providing solutions to reduce the likelihood of exposure to losses, thereby enhancing the institution's ability to cope with crises.

E. Implementing the Principles of Corporate Governance:

Internal auditing functions as a mechanism for resolving conflicts of interest, in accordance with Agency Theory, between managers and owners. It ensures information symmetry and transparency in financial reporting. It also provides assurance services to the Board of Directors regarding the extent of compliance with sound governance principles, thereby enhancing the institution's reputation and market value.

I. Field Study (An Exploratory Field Study at Annaba Port Company)

Annaba Port Company (EPAN) plays a strategic role in international trade transactions due to its distinguished geographical location on the eastern coast of Algeria. It is considered one of the major and most important enterprises in the Wilaya of Annaba and in Algeria as a whole, owing to its strong economic and social position and its significant role in economic activity.

Annaba Port Company was established on February 29, 1989. It is a joint-stock company (SPA) located southwest of the Gulf of Annaba, near the Seybouse River. It covers a land area of 76 hectares and a water area of 94 hectares, with a share capital amounting to DZD 30,000,000.00. Its service area extends to fourteen (14) wilayas.

1. Population and Sample of the Field Study

The study population consists of the occupational categories directly concerned with the subject of the study, namely internal auditors, financial accountants, managerial executives, and administrative staff. Given the need for the sample to retain the characteristics of the original population in order to ensure the validity and reliability of the results, a sampling method was adopted.

Accordingly, the study sample consisted of 36 individuals, including internal audit professionals, financial accountants, managerial executives, and administrative staff. The study questionnaire was distributed to all members of the sample. Six (06) questionnaires, representing 17% of the total number of distributed questionnaires, were excluded, while the remaining thirty (30) questionnaires were deemed valid for statistical analysis, representing 83%. This response rate reflects the high level of cooperation among the sample members.

The following table presents details of the questionnaire distribution and retrieval process.

Table No. (04): Statistics on the Questionnaire Distribution Process

Distributed Questionnaires	Retrieved Questionnaires	Excluded Questionnaires	Questionnaires	Valid for Analysis	Response Rate
Number	36	36	06	30	83%

Source: Prepared by the researcher based on the results of the questionnaire distribution.

2. Field Study Instrument

The field study relied on the questionnaire as the main instrument for collecting primary data, as it is one of the most important field research tools appropriate to the nature of the study topic. The questionnaire was designed in accordance with the dimensions and variables of the study. It included the independent variable, represented by internal auditing, and the dependent variable, represented by economic performance, following the formulation of the research problem, questions, and hypotheses.

The study questionnaire consists of 29 statements divided into two sections:

Section One:

This section contains five (05) items addressing the personal characteristics of the study sample, namely: gender, age, educational qualification, years of professional experience, and job position.

Section Two:

This section addresses the study variables and consists of three dimensions, as follows:

Dimension One: Consists of thirteen (13) statements aimed at identifying the current state of internal auditing at Annaba Port Company.

Dimension Two: Consists of twelve (12) statements aimed at measuring the effectiveness of economic performance in the port company.

Dimension Three: Consists of four (04) statements aimed at measuring the extent to which internal auditing contributes to improving the economic performance of the company.

Accordingly, the questionnaire consisted of 29 statements. In order to analyze the responses obtained through the questionnaire, the five-point Likert Scale was used to assign quantitative alternatives to the descriptive responses, thereby making them amenable to statistical analysis. Five (05) weights ranging from 1 to 5 were assigned to the respondents' answers, as illustrated in the following table:

Table No. (05): Five-Point Likert Scale

Classification	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Weight	1	2	3	4	5

Source: Al-Najjar, Fayez Juma'a et al. (2010), *Scientific Research Methods: An Applied Perspective*, Amman, Jordan: Dar Hamed for Publishing and Distribution, p. 661.

Based on Table No. (05), and in order to assign an appropriate meaning to the respondents' answers, the levels of relative importance of the arithmetic mean were adopted for use in the analysis process. The classification expressing the respondents' answers (Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree) represents an ordinal scale, while the corresponding numerical values used in the statistical software represent the following weights: (Strongly Disagree = 1, Disagree = 2, Neutral = 3, Agree = 4, Strongly Agree = 5). The length of each interval is 0.8, which was determined as follows:

Interval Length = (Upper Limit – Lower Limit) / Number of Levels

Given that:

Range = 5 – 1 = 4

and the number of intervals is 5, according to the five-point Likert Scale:

Interval Length = 4 ÷ 5 = 0.8

Accordingly, the weights corresponding to the respondents' answers are presented in the following table:

Table No. (06): Scale for Determining the Relative Importance of the Study Variables

Level of Suitability	1.8 – 1	2.6 – 1.8	3.4 – 2.6	4.2 – 3.4	5 – 4.2
Relative Importance of the Arithmetic Mean	Very Low	Low	Moderate	High	Very High

Source: Prepared by the researcher.

1. Testing the Reliability and Validity of the Questionnaire and the Normality of the Distribution

In order to address the research problem and test its hypotheses, the data collected through the questionnaire were subjected to statistical analysis using the Statistical Package for the Social Sciences (SPSS) as the main tool for

processing and analyzing the data and interpreting the results obtained. To achieve this objective, a set of statistical tests and methods was employed, including both descriptive and inferential statistical techniques.

Before distributing the questionnaire, its validity had to be tested. Questionnaire validity means that the questionnaire adequately represents the population under study, (Al-Taji, 2014, p. 14) which implies that the questionnaire statements actually measure what they were designed to measure. The statistical validity approach (internal consistency validity) was employed by calculating the correlation coefficient for each item with the total score of the items belonging to its respective dimension. For this purpose, the Pearson correlation coefficient was used to determine the strength of the correlation.

Based on the results obtained from the test, all correlation coefficients between the dimensions of the questionnaire and the overall scores of their respective axes were found to be very high. The Pearson correlation coefficients ranged from 0.820 to 0.957, which are values classified within the range of very strong positive direct correlation according to the commonly used classifications of correlation strength. Furthermore, all statistical significance levels were equal to 0.000 (Sig.), which is lower than the significance level ($\alpha = 0.05$). This indicates that these correlations are statistically significant at the 0.05 level and that the probability of obtaining such values by chance is extremely low. Accordingly, the content of each questionnaire axis has a very strong positive relationship with the overall objective of the study. This confirms that the questionnaire is appropriate for measuring what it was designed to measure, namely, the contribution of internal auditing to measuring the economic performance of the economic enterprise, based on the opinions of the study sample.

Questionnaire reliability refers to the extent to which the questionnaire produces the same results if it is administered more than once under the same conditions and circumstances. In other words, questionnaire reliability means the stability of its results and the absence of significant changes when the questionnaire is redistributed to the members of the sample several times over specific periods.

To verify the reliability of the study instrument, Cronbach's Alpha reliability coefficient was calculated. The results for the dimensions of the study instrument and the questionnaire showed that the overall reliability coefficient of the questionnaire was ($\alpha = 0.946$). This represents a very high level of reliability and exceeds the minimum acceptable threshold commonly adopted in statistics for the economic sciences, which is 0.70. This indicates that the study instrument has a high degree of reliability and statistical soundness, making it suitable for use in quantitative analysis and hypothesis testing. Moreover, the fact that the overall reliability coefficient is close to one (1) indicates the clarity of the questionnaire items and the absence of contradictions or ambiguity in their content.

Regarding the distribution of the data obtained, the Kolmogorov-Smirnov normality test was employed to determine whether the study data follow a normal distribution. This test examines the following two hypotheses:

H_0 : The study data follow a normal distribution.

H_1 : The study data do not follow a normal distribution.

The null hypothesis is accepted and the alternative hypothesis is rejected when the significance probability (Sig.) is greater than the significance level adopted in the study.

Based on the results obtained from this test, the significance levels (Sig.) for the three questionnaire axes, respectively, were 0.247, 0.391, and 0.227. These values are greater than the adopted significance level ($\alpha = 0.05$). Therefore, the null hypothesis (H_0), stating that the study data follow a normal distribution, is accepted, while the alternative hypothesis (H_1), stating that the study data do not follow a normal distribution, is rejected. Accordingly, parametric statistical tests will be used in this study.

1. Presentation and Analysis of the Field Study Results

This section aims to present and analyze the statistical results obtained from the field study conducted at the Annaba Port Corporation (EPAN), based on descriptive and inferential statistical analysis tools to test the study hypotheses. It also seeks to interpret these findings in light of the theoretical framework, with the aim of assessing the current state of internal auditing and the extent to which it contributes to improving economic performance within the organization.

The analysis also relies on descriptive statistical indicators, particularly the arithmetic mean to determine the trends of respondents' answers and the standard deviation to measure the degree of dispersion or homogeneity of opinions. In addition, relative importance is used to rank the items and dimensions according to the degree of agreement among the sample members, based on the five-point Likert scale.

1.4. Presentation and Analysis of the Responses of the Study Sample to the Statements of the First Dimension

~~This dimension aims to assess the current state of internal auditing at the Annaba Port Corporation from the~~

perspective of the study sample. A total of thirteen (13) statements were formulated and presented to the respondents in order to determine their opinions regarding them. The results obtained are presented in the following table:

Table No. (07): Results of the Responses of the Study Sample to the Statements of the First Dimension

Statements	Arithmetic Mean	Standard Deviation	Relative Importance	Degree of Agreement	Rank
1-There is an audit committee that contributes to supporting and organizing the internal audit function within the Annaba Port Corporation.	2.93	1.04	0.58	Moderate	11
2-There is a dedicated internal audit department at the Annaba Port.	3.30	1.05	0.66	Moderate	10
3-Internal auditing enjoys independence within the port.	3.26	1.31	0.65	Moderate	13
4- Internal audit activities are performed on a regular basis.	3.63	0.85	0.72	Good	5
5- Port management relies on internal audit reports.	3.60	0.93	0.72	Good	6
6- Internal auditing effectively participates in identifying and assessing risks that may hinder the achievement of the organization's objectives.	3.33	1.09	0.66	Moderate	9
7- Audit activities contribute to examining the adequacy of the procedures adopted to mitigate financial and operational risks.	3.43	1.16	0.68	Good	8
8- Internal auditing provides management with reasonable assurance regarding the soundness of systems against fraud and embezzlement.	3.73	0.86	0.74	Good	2
9- The internal audit department has an annual plan based on prioritizing areas that are most exposed to risks.	3.43	0.89	0.68	Good	7

10- Internal auditing monitors the extent to which all departments comply with laws, internal regulations, and professional standards.	3.66	0.84	0.73	Good	4
11- Auditing contributes to strengthening the principles of accountability and transparency within the organization's organizational structure.	3.73	0.78	0.74	Good	1
12- Internal auditing acts as a link that ensures the flow of accurate information between executive management and the board of directors or the supervisory authority.	3.70	0.87	0.74	Good	3
13- Internal auditing ensures that policies and procedures are updated to remain consistent with new legal and regulatory developments.	3.26	1.08	0.65	Moderate	12
Total	3.46	0.15	0.69	Agree	—

Source: Prepared by the researcher based on the outputs of SPSS Version 26.

Based on Table (07), it can be observed that the overall level of internal auditing at the Annaba Port Company was assessed as “Good”, with variations among the items in terms of the strength of respondents’ agreement.

Overall Level of the Dimension:

The overall arithmetic mean of the items comprising the first dimension was 3.46, with a standard deviation of 0.15 and a relative importance of 0.69. This value falls within the “Good” assessment category according to the five-point Likert scale and the interpretation of the relative importance index, which ranges from 0.60 to 0.80. This indicates that the respondents generally tend to evaluate the state of internal auditing at Annaba Port positively, while there remains room for improvement in certain organizational and structural aspects.

Highest-Rated Items:

It is noteworthy that the highest arithmetic means were recorded for the items reflecting the control and governance dimensions of the internal audit function. The item stating that “Internal auditing contributes to strengthening the principles of accountability and transparency within the organizational structure of the company” ranked first, with a mean of 3.73, a relative importance of 0.74, and a “Good” level of agreement. Likewise, the item “Internal auditing provides management with reasonable assurance regarding the soundness of systems against fraud and embezzlement” recorded a mean of 3.73 and a relative importance of 0.74, ranking second. The item “Internal auditing acts as a communication link that ensures the flow of accurate information between executive management and the Board of Directors or the supervisory authority” ranked third, with a mean of 3.70 and a relative importance of 0.74. These findings reflect a strong awareness among the sample members of the importance of the control and communication roles of internal auditing in supporting governance and transparency within the port.

§ Items with a Good Rating:

The items related to the performance of internal audit tasks and compliance monitoring showed that internal auditing plays a relatively effective role. The statement “Internal audit tasks are performed regularly” achieved a mean of 3.63 and a relative importance of 0.72. Similarly, the item “Port management relies on internal audit reports” recorded a mean of 3.60 and a relative importance of 0.72, with both items receiving a “Good” level of agreement. In addition, the item “Internal auditing monitors the extent to which all departments comply with laws, internal regulations, and professional standards” achieved a mean of 3.66 and a relative importance of 0.73. Meanwhile, the items concerning assessing the adequacy of procedures for mitigating risks and preparing an annual risk-based audit plan recorded mean values ranging from 3.43 to 3.46, with a “Good” level of agreement. This indicates the existence of structured internal audit practices, although they have not yet reached an excellent level.

Moderately Rated Items:

In contrast, the items related to organizational structure and independence were assessed at “Moderate” levels. For example, the item “There is an audit committee that contributes to supporting and organizing the internal audit function within Annaba Port Company” recorded a mean of 2.93 and a relative importance of 0.58, ranking eleventh. This suggests that the existence or effectiveness of the audit committee may not be at the required level. Similarly, the item “There is a dedicated internal audit department at Annaba Port” recorded a mean of 3.30 and a relative importance of 0.66. Furthermore, the items “Internal auditing enjoys independence within the port” and “Internal auditing ensures that policies and procedures are updated in line with new legal and regulatory developments” both recorded a mean of 3.26 and a relative importance of 0.65, with “Moderate” levels of agreement, placing them among the lowest-ranked items. This indicates that organizational structure, independence, and policy updating remain areas requiring further strengthening compared with the control and communication aspects, which received higher evaluations.

Based on the foregoing, the results indicate that the state of internal auditing at the Annaba Port Corporation is assessed as “good” by the respondents. The findings reveal a clear strength in its role in enhancing transparency, controlling risks, and supporting communication across managerial levels. However, some relative weaknesses remain, particularly with regard to organizational independence, the existence of an effective audit committee, the updating of policies and procedures, and the development of internal auditing practices. Accordingly, the internal audit function at the port can be considered established and to have a positive impact; nevertheless, it requires further development in terms of organizational structure and governance in order to achieve a higher level of effectiveness.

2.4. Presentation and Analysis of the Study Sample Respondents’ Answers to the Statements of the Second Dimension

This dimension aims to measure the effectiveness of economic performance at the Annaba Port Corporation in terms of efficiency, productivity, and the economic dimension, based on the opinions of the study sample. A set of twelve (12) statements was developed and presented to the respondents to determine their views regarding these statements. The results are presented in the following table:

Table No. (08): Results of the Study Sample Respondents’ Answers to the Statements of the Second Dimension

Statements	Arithmetic Mean	Standard Deviation	Relative Importance	Degree of Agreement	Rank
Efficiency Dimension					
14- Annaba Port Corporation achieves the annual objectives set out in its strategic plan.	3.16	0.98	0.63	Moderate	4
15- The port services provided, including loading, unloading, and storage, contribute to achieving customer and economic operators’ satisfaction.	3.30	1.02	0.66	Moderate	3
16- The corporation is committed to applying	3.80	0.96	0.76	Good	1

international quality and safety standards in all its operational processes.					
17- The results actually achieved reflect the aspirations of senior management and the supervising ministry.	3.33	1.02	0.66	Moderate	2
Total	3.40	0.03	0.68	Good	–
Productivity Dimension					
18- The corporation rationally utilizes its available material and human resources in a manner that prevents waste.	3.46	1.00	0.69	Good	2
19- The speed of handling containers and ships contributes to increasing the port's overall productivity.	3.06	0.98	0.61	Moderate	4
20- Tasks and responsibilities are distributed among departments in a manner that ensures smooth workflow and avoids duplication.	3.36	0.96	0.67	Moderate	3
21- The corporation relies on modern digital systems that contribute to reducing the effort and time required to complete tasks.	3.53	0.89	0.70	Good	1
Total	3.35	0.04	0.67	Moderate	–
Economic Dimension					
22- The corporation ensures that its equipment and spare-part requirements are procured at the best prices and with high quality.	3.53	1.10	0.70	Good	1
23- The control system contributes to reducing financial losses resulting from procedural errors or negligence.	3.43	0.85	0.68	Good	2
24- The corporation generates financial surpluses (profits) that enable it to self-finance its expansion projects.	3.36	0.96	0.67	Good	3
25- Management is committed to reducing unnecessary operating costs	3.30	0.95	0.66	Moderate	4

in a manner that improves the corporation's financial position.					
Total	3.40	0.10	0.68	Good	–
Overall Total	3.38	0.06	0.76	Moderate	–

Source: Prepared by the researcher based on the outputs of SPSS Version 26.

Based on Table No. (08), it is evident that the level of economic performance effectiveness at the Annaba Port Enterprise falls within the range of “moderate, tending toward good,” with some dimensions showing relatively stronger performance than others.

Overall Effectiveness of Economic Performance:

The overall total of the dimensions of economic performance effectiveness shows that the overall arithmetic mean reached 3.38, with a standard deviation of 0.06 and a relative importance of 0.76. This value falls within the “Moderate” agreement category on the five-point Likert scale, while being relatively close to the upper limit of this category. This indicates that the sample respondents perceive the port's economic performance as “acceptable to good,” but not yet at a “very high” or “excellent” level, particularly when compared with the benchmark standards adopted by studies addressing the performance of port enterprises.

3.4. Presentation and Analysis of the Study Sample Respondents' Answers to the Statements of the Third Dimension

This dimension aims to measure the extent to which internal auditing contributes to improving economic performance at the Annaba Port Enterprise, based on the opinions of the study sample. Four (04) statements were formulated and presented to the respondents in order to determine their opinions regarding them. The results are presented in the following table:

Table No. (09): Results of the Responses of the Study Sample Members to the Statements of the Third Dimension

Items	Arithmetic Mean	Standard Deviation	Relative Importance	Degree of Agreement	Rank
26- Internal audit recommendations contribute to providing practical solutions to the operational problems faced by the institution.	3.63	0.88	0.72	Good	1
27- Audit reports assist senior management in making managerial decisions based on accurate and objective data.	3.43	0.85	0.68	Good	3
28- Internal audit identifies areas of resource wastage and proposes ways to improve their utilization.	3.46	1.00	0.69	Good	2
29- Audited departments perceive a noticeable improvement in their work procedures after implementing the internal auditor's observations.	3.40	0.93	0.68	Good	4

Total	3.48	0.06	0.69	Good	–
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Source: Prepared by the researcher based on the outputs of SPSS Version 26.

Based on Table No. (09), the respondents consider that internal auditing makes a “good” contribution to improving the institution’s performance, particularly through its recommendations and the rationalization of resource utilization.

Overall Level of the Dimension:

The overall results of the statements constituting the third dimension show that the arithmetic mean reached 3.48, with a standard deviation of 0.06 and a relative importance of 0.69. This value falls within the “Good” level of agreement on the five-point Likert scale. This indicates that the study sample members agree to a considerable extent that internal auditing plays a positive and tangible role in improving performance within the Annaba Port Authority, which is consistent with studies emphasizing the relationship between effective internal auditing and improved organizational performance.

Highest-Rated Items:

The statement “Internal audit recommendations contribute to providing practical solutions to the operational problems faced by the institution” ranked first, with an arithmetic mean of 3.63, a standard deviation of 0.88, a relative importance of 0.72, and a “Good” degree of agreement. This indicates that the respondents clearly recognize the practical nature of internal audit recommendations and their ability to address operational deficiencies. This is consistent with the literature that considers recommendations to be among the most important outputs of internal auditing in supporting the continuous improvement of processes.

The statement “Internal audit identifies areas of resource wastage and proposes ways to improve their utilization” ranked second, with an arithmetic mean of 3.46, a relative importance of 0.69, and a “Good” degree of agreement. This reflects the contribution of internal auditing to the rationalization of resources and the enhancement of economic efficiency.

Other Items in the Dimension:

The statement concerning “the role of audit reports in supporting senior management decisions” recorded an arithmetic mean of 3.43, a standard deviation of 0.85, a relative importance of 0.68, and a “Good” degree of agreement. This indicates that such reports constitute an important reference for making decisions based on accurate and objective information, which is consistent with studies that regard internal auditing as a tool for providing reliable information to decision-makers.

As for the statement “Audited departments perceive a noticeable improvement in their work procedures after implementing the internal auditor’s observations,” it recorded a mean of 3.40, a relative importance of 0.68, and a “Good” degree of agreement. This means that the implementation of internal audit findings effectively translates into improvements in work procedures within the audited departments.

Based on these results, it can be concluded that internal auditing at the Annaba Port Authority is perceived by the study sample members as a relatively effective mechanism for improving performance through the provision of practical recommendations, the rationalization of resource utilization, support for managerial decision-making, and the improvement of work procedures within audited departments. This finding is consistent with applied studies conducted in economic and port institutions, which associate the independence and competence of the internal audit function with its ability to mitigate risks and improve the institution’s financial and operational performance.

1. Testing the Study Hypotheses

To test the study hypotheses, the One-Sample T-Test was used, and the results were as follows:

1.4. First Hypothesis

The first hypothesis: Internal auditing at the Annaba Port Company is characterized by a well-organized structure, marked by independence, and contributes to enhancing accountability, transparency, and compliance with laws and regulations, thereby making it a fundamental pillar of the company's organizational structure, at a significance level of ($\alpha = 0.05$).

H₀: Internal auditing at the Annaba Port Company is not characterized by a well-organized structure, does not demonstrate independence, and does not contribute to enhancing accountability, transparency, and compliance with laws and regulations, and therefore does not constitute a fundamental pillar of the company's organizational structure, at a significance level of ($\alpha = 0.05$).

H₁: Internal auditing at the Annaba Port Company is characterized by a well-organized structure, demonstrates independence, and contributes to enhancing accountability, transparency, and compliance with laws and regulations, thereby making it a fundamental pillar of the company's organizational structure, at a significance level of ($\alpha = 0.05$).

Table No. (10): Results of Testing the First Hypothesis

Calculated T	Sig.	Degrees of Freedom	Mean	Standard Deviation	Confidence Interval of the Test	
					Lower Bound	Upper Bound
31.093	0.000	29	3.464	0.610	3.236	3.691

Source: Prepared by the researcher based on the outputs of SPSS V26.

Based on Table No. (10), the results show that the significance level for the first axis, "The Reality of Internal Auditing at the Annaba Port Company," was (Sig. = 0.000), which is lower than the significance level ($\alpha = 0.05$). Accordingly, the alternative hypothesis H₁ is accepted, stating that internal auditing at the Annaba Port Company is characterized by a well-organized structure, demonstrates independence, and contributes to enhancing accountability, transparency, and compliance with laws and regulations, thereby making it a fundamental pillar of the company's organizational structure, at a significance level of ($\alpha = 0.05$).

Consequently, the null hypothesis H₀ is rejected, which states that internal auditing at the Annaba Port Company is not characterized by a well-organized structure, does not demonstrate independence, and does not contribute to enhancing accountability, transparency, and compliance with laws and regulations, and therefore does not constitute a fundamental pillar of the company's organizational structure, at a significance level of ($\alpha = 0.05$).

This finding is further supported by the results of the analysis of the study sample members' responses to the statements of the first axis, presented in Table No. (07), which indicate that internal auditing at the Annaba Port Company is rated as "good" by the members of the study sample.

2.4. Second Hypothesis

The second hypothesis: Economic performance at the Annaba Port Company is characterized by effectiveness in terms of efficiency, productivity, and the economic dimension, at a significance level of ($\alpha = 0.05$).

H₀: Economic performance at the Annaba Port Company is not characterized by effectiveness in terms of efficiency, productivity, and the economic dimension, at a significance level of ($\alpha = 0.05$).

H₁: Economic performance at the Annaba Port Company is characterized by effectiveness in terms of efficiency, productivity, and the economic dimension, at a significance level of ($\alpha = 0.05$).

Table 11: Results of the Second Hypothesis Test

Calculated T	Sig.	Degrees of Freedom	Mean	Standard Deviation	Confidence Interval of the Test	
					Lower Bound	Upper Bound
27.271	0.000	29	3.388	0.680	3.134	3.643

Source: Prepared by the researcher based on the outputs of SPSS V26.

As shown in Table 11, the results indicate that the significance level for the first dimension, "Effectiveness of Economic Performance at the Annaba Port Company," was (Sig. = 0.000), which is lower than the significance level ($\alpha = 0.05$). Accordingly, the alternative hypothesis H₁ is accepted, stating that economic performance at the Annaba Port Company is characterized by effectiveness in terms of efficiency, productivity, and the economic dimension, at a significance level of ($\alpha = 0.05$).

Consequently, the null hypothesis H₀, which states that economic performance at the Annaba Port Company is not characterized by effectiveness in terms of efficiency, productivity, and the economic dimension, at a significance level of ($\alpha = 0.05$), is rejected.

This finding is further supported by the results of the analysis of the responses of the study sample members to the statements of the second dimension, presented in Table 08. These results showed that the effectiveness of economic performance at the Annaba Port Company was assessed by the sample members at a "moderate level tending toward good."

3.4. Third Hypothesis

The internal audit function contributes to improving economic performance at the Annaba Port Company at a significance level of ($\alpha = 0.05$).

H0: The internal audit function does not contribute to improving economic performance at the Annaba Port Company at a significance level of ($\alpha = 0.05$).

H1: The internal audit function contributes to improving economic performance at the Annaba Port Company at a significance level of ($\alpha = 0.05$).

Table 12: Results of the Third Hypothesis Test

Calculated T	Sig.	Degrees of Freedom	Mean	Standard Deviation	Confidence Interval of the Test	
					Lower Bound	Upper Bound
26.647	0.000	29	3.483	0.715	3.215	3.750

Source: Prepared by the researcher based on the outputs of SPSS V26.

Based on Table (12), the results showed that the significance level for the first axis, entitled “The Contribution of Internal Auditing to Improving Performance at the Annaba Port Company,” was (Sig. = 0.000), which is lower than the significance level ($\alpha = 0.05$). Accordingly, the alternative hypothesis H1, stating that the internal audit function contributes to improving economic performance at the Annaba Port Company, is accepted at the significance level ($\alpha = 0.05$). Conversely, the null hypothesis H0, stating that the internal audit function does not contribute to improving economic performance at the Annaba Port Company, is rejected at the significance level ($\alpha = 0.05$).

This finding is further supported by the results of the analysis of the responses of the study sample to the statements of the third axis, presented in Table (09), which revealed that internal auditing at the Annaba Port Company is perceived by the sample members as a relatively effective mechanism for improving performance through providing practical recommendations, rationalizing the use of resources, supporting managerial decision-making, and improving work procedures within the audited departments.

Accordingly, when the results of the hypothesis tests are linked to the study axes, a degree of consistency among the findings becomes evident. The first axis revealed a generally good reality of internal auditing, with strengths emerging in the areas of transparency and control, in contrast to some relative weaknesses related to independence and organizational structure.

The second and third axes also demonstrated that the level of economic performance and the contribution of internal auditing to its improvement are at a moderate level tending toward good. Thus, the findings of the study support the theoretical perspective that considers internal auditing to be one of the fundamental pillars for improving economic performance in port companies. However, maximizing this role requires strengthening independence, developing professional competencies, and continuously aligning practices with international professional standards.

Conclusion

The concept of internal auditing has undergone a qualitative and fundamental transformation. It has evolved from being a classical control tool focused on detecting errors and relying primarily on subsequent corrective action into a strategic advisory function aimed at adding value (Value Added) and protecting the organization's assets through risk management and the activation of internal control systems. At the same time, economic performance has emerged as a paramount objective pursued by organizations through careful balancing within the “efficiency triangle”: effectiveness in achieving objectives, efficiency in utilizing available resources, and economy in controlling costs.

The results of the study demonstrated that internal auditing plays a fundamental role in enhancing the values of transparency, consolidating the principle of accountability, and supporting administrative communication channels within the organization. Conversely, the diagnostic assessment revealed certain relative shortcomings, particularly with regard to organizational independence and the absence of an effective audit committee in the full institutional sense.

With regard to economic performance, the company recorded a moderate level tending toward good, with clear strengths emerging in the areas of compliance with quality standards and the adoption of digitalization in operational management. However, a relative weakness was observed in the speed of container handling, in addition to systematic

pressure on operating costs.

The results of the hypothesis tests also confirmed that internal auditing constitutes an effective tool for diagnosing deviations, rationalizing costs, and improving economic performance indicators, thereby reinforcing its position as a central element in supporting the company's economic performance.

The study yielded the following findings:

§ Independence and Strategic Position:

Internal auditing enjoys strong organizational independence due to its direct reporting relationship with the Audit Committee emanating from the Board of Directors. This provides auditors with the necessary protection and objectivity when presenting facts and enables them to overcome pressures exerted by executive management.

Transition toward an advisory role: The findings indicate that the internal audit function has adopted the modern approach to auditing. It no longer focuses solely on identifying deviations; rather, it provides practical solutions and recommendations that contribute to addressing operational problems within the institution.

Achieving the efficiency of the “Efficiency Triangle”: Internal auditing contributes effectively to rationalizing operating costs and reducing financial and material waste, thereby improving the institution's efficiency and productivity indicators.

Impact of digitalization and information systems: The study demonstrated that the institution's adoption of advanced software for billing and vessel management has enhanced the audit function's capacity to conduct real-time auditing (Online Audit), thereby reducing the time required to detect and address errors.

Proactive risk management: Internal auditing has successfully shifted from the retrospective treatment of problems toward anticipating risks—financial, logistical, and security-related—and establishing preventive controls to mitigate or prevent their occurrence.

Compliance with professional standards and transparency: The Audit Department follows a rigorous professional process encompassing planning, execution, reporting, and follow-up, which has strengthened a culture of transparency and accountability across the various departments and services.

Contribution to service quality: By improving work procedures and reducing deviations, internal auditing indirectly contributes to accelerating container handling and vessel turnaround, thereby enhancing the port's image among economic operators.

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