

# THE IMPACT OF INTERNAL CONTROL SYSTEM ACCORDING TO(COSO) MODEL ON THE INSTITUTIONAL PERFORMANCE: ANALYTICAL & COMPARATIVE STUDY IN JORDAN BANKS

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**ABSTRACT:** *This study endeavors to evaluate the influence of the internal control system, based on the COSO model and its core components, on institutional performance in Jordanian commercial banks. The assessment encompasses perspectives from both internal and external stakeholders. A comprehensive set of performance indicators is employed to gauge the effectiveness of the internal control system within business organizations. Data collection involved the administration of a researcher-designed questionnaire and subsequent statistical analysis to interpret the findings and validate hypotheses. The study's results establish a positive impact of internal control systems aligned with the COSO model on institutional performance in Jordan's commercial banks. Based on these findings, the study recommends that official institutions take steps to formulate robust governance systems, enforce banking sector regulations, enhance information and communication infrastructure, and develop monitoring mechanisms to proactively identify and address potential threats and deficiencies.*

**Keywords:** COSO, Institutional Performance, Internal Control, Key Performance Indicators, Jordan commercial banks.

## 1. INTRODUCTION

The internal control system serves as the primary line of defense and a key indicator for evaluating institutional performance in business organizations. It plays a crucial role in overseeing administrative and professional practices, ensuring the adherence to IFRS and international audit standards, as well as corporate governance policies and laws. The internal control system encompasses all of management's efforts to guarantee efficiency, effectiveness, compliance, and reliability in business transactions and communications. This system also provides a reflection of the framework that manages strengths, weaknesses, threats, and opportunities in the business environment. Its primary goal is to achieve and maintain the desired results while upholding the ethical values of the organization. It guides all activities towards achieving an optimal balance.

Regarding the concept of internal control, it has been developed conceptually and practically in parallel. In 1992, the Committee of Sponsoring Organizations of the Treadway Commission (COSO) presented an integrated framework for internal control that gained general acceptance and has become the most widely used internal control framework in the world. This has significantly enhanced and improved the efficiency and effectiveness of accounting information systems and corporate governance. Additionally, the updates developed in 2013 related to the original integrated internal control framework have contributed to many improvements in internal control systems. These updates emphasize the goals of non-financial reporting, focusing on the increasing importance of information technology and assessing business risks [1, 2, 3, 4, 5]

On the other hand, the banking sector serves as the foundation for various aspects of life and is the cornerstone of a country's economy. Through a comprehensive review of various studies and reports in the field of research, the researcher noted several problems related to the efficiency and effectiveness of internal control systems. This is especially crucial in light of significant developments in various fields and the challenges posed by rapid advancements in information systems and communication technology. The researcher believes that one of the primary

reasons behind institutional failures in strategic management is that senior administrators invest substantial effort in preparing SWOT analyses, formulating strategic plans, and creating action plans. However, they often fall short when it comes to designing a robust control process and ensuring its alignment with the developed plans to achieve the institution's strategic objectives. Furthermore, the researcher observed a lack of sufficient studies that delve into the nature of the relationship between internal control systems and the performance of business organizations in the Hashemite Kingdom of Jordan. This perspective highlights a research gap in this area [2, 3].

The researcher noted that the relationship between the level of institutional performance and the internal control system has not been studied before. Therefore, the significance of this study is derived from the role played by internal control systems, along with their main components, in helping the administration identify its objectives, establish its operational activities, evaluate operational performance, and ensure operations align with the developed plans to reach the strategic objectives of the institution. The researcher conducted this study as an attempt to measure the impact of the internal control system, based on the COSO model, on the institutional performance of commercial banks in Jordan and to determine the nature of the relationship between them.

## 2. CONCEPTUAL FRAME AND LITERATURE REVIEW

### 2.1. THE CONCEPT OF INTERNAL CONTROL ACCORDING TO THE (COSO) MODEL

The Committee of Sponsoring Organizations of the Treadway (COSO) has defined internal control as follows: "A process influenced by the board of directors of an organization, executive management, and other individuals, designed to provide reasonable assurance regarding the organization's achievement of its goals related to operational processes and reporting compliance" [6].

Generally, the internal control framework, as per the COSO model updated in 2013, consists of five main elements as outlined below:

**CONTROL ENVIRONMENT:** The oversight environment forms the foundation for internal oversight in business organizations, encompassing aspects such as organizational transparency, commitment to integrity, ethical values, and standards that enable the Board of Directors to fulfill its supervisory and governance responsibilities. This element also includes considerations of organizational structure and operational manuals.

**RISK ASSESSMENT:** This is an ongoing, dynamic, and iterative process for identifying and evaluating risks associated with achieving objectives and assessing the potential impact of external and internal changes on business organizations.

**CONTROL ACTIVITIES:** This category comprises all policies and procedures implemented by the organization to ensure that administrative directives are executed effectively, thereby mitigating risks associated with goal attainment.

**INFORMATION AND COMMUNICATION:** Information, in all its forms, is vital for organizations to carry out their internal control responsibilities and achieve their objectives. Communication is a continual and frequent process involving the provision, sharing, and acquisition of necessary information.

**MONITORING ACTIVITIES:** Monitoring activities involve ongoing assessment processes to ensure that all five internal control components are being executed appropriately. [7].

## 2.2. KEY PERFORMANCE INDICATORS (KPI)

Key Performance Indicators (KPI) are essential factors for determining the level of progress made towards an enterprise's objectives. These objectives encompass both financial and non-financial measures designed to ensure that the enterprise successfully attains its goals throughout its strategic journey. Performance indicators are not set in stone; they can vary depending on the organization's specific objectives. Some indicators are directly linked to the organization's strategic plan and objectives, assessing the progress towards achieving the organization's overarching vision. Other indicators pertain to the effectiveness of the human resources department and the organization's capacity to harness its workforce effectively. Additionally, there are indicators associated with information systems and communication technology. These assess the utilization of advanced technology capable of executing various financial, administrative, and accounting operations, as well as establishing clear and efficient communication channels with both internal and external stakeholders. Moreover, there are indicators related to the activation of audit and follow-up committees and internal control systems. These play a crucial role in ensuring that operations flow smoothly in the right direction, ultimately aligning with the institution's goals. Furthermore, some indicators are tied to both the marketing plan and the organization's competitive position. These indicators focus on strategic planning, adaptation to developments, and the enhancement of customer-added value [8, 9, 10]. In fact, an active governance system ensures good governance within the institution by effectively monitoring its operations. It maintains a clear and consistent course, facilitating familiarity with various administrative functions and processes, thereby ensuring the institution's goals are achieved. Furthermore, it equips the institution with the

capability to address various challenges by taking warnings seriously [11].

## 3. PREVIOUS STUDIES

Accounting literature has seen a multitude of applied studies concerning internal control systems and accounting information systems. Therefore, the researcher has reviewed several studies to enhance the content of this study. According to these studies, the internal control system reflects the reality of the framework that manages strengths, weaknesses, threats, and opportunities in the business environment to achieve desired results. It has also been confirmed that the role of the internal control system in monitoring the policies and procedures in place to gain a competitive advantage cannot be underestimated. Moreover, it has been revealed that the components of the internal control system have a positive and significant impact on the operational performance of SMEs and construction companies.

The implementation of internal control according to the COSO framework plays a crucial role in improving financial performance and reducing operational and credit risks. The various components and dimensions of COSO have a significant impact on the analysis and management of risks in commercial banks [12-14, 2, 4, 15].

The application of the internal control system involves a direct interactive relationship between the provisions of corporate governance and the effectiveness of the internal control system. It also entails activating the roles of senior management and the board of directors [16]. Regarding the impact of internal control on financial performance, the commitment to institutional governance concepts has contributed to improvements in return on equity and return on assets. This improvement has occurred despite the limited awareness among banking departments in the Kingdom of Bahrain regarding the importance of adhering to institutional governance concepts and their influence on institutional performance. This lack of awareness has led to the presence of control systems in banks but with weak economic efficiency [17]. From the perspective of employees of industrial banks listed on the Indonesian Stock Exchange, internal control and organizational culture have had a significant positive impact on early warning systems for preventing potential fraud and improving information and communication technology governance [18]. In the context of investigating auditing offices and companies in Jordan, internal control structures' impact on the quality of external audit performance is examined from the viewpoint of external auditors [19], there is a positive correlation between the availability of internal control elements according to COSO and the enhancement of external auditor performance in the West Bank, Palestine [20].

Internal control systems have faced significant challenges in light of globalization and information technologies when preparing financial reports, resulting in a gap in expectations between accounting information systems' performance and stakeholders. The application of the internal control system in accordance with the COSO (Committee of Sponsoring Organizations of the Treadway Commission) framework

reduces the gap in expectations of financial report users [21, 22].

In the field of institutional performance, administrative researchers have pointed out that leaders and boards of directors play a crucial role in directing energies, resources, and performance in alignment with an organization's goals and aspirations. They provide the atmosphere and foundational structures necessary to ensure the best practices for enhancing institutional performance, improving overall organizational output, and fostering a stimulating and encouraging work environment based on transparency and integrity. Management and boards of directors also have an influential role in guiding energies, resources, and performance in line with the strategic thinking, development, innovation, creativity, and organizational practices that organizations focused on performance excellence require [23,8].

According to [24, 25], the organizational environment is influenced by various elements and variables, including an organization's output and its relationship with stakeholders and customers. Having been illustrated above, the researcher believes that what differentiates this study from the ones previously stated is its focus on the differences in variables and the societal context of the study. Previous studies primarily concentrated on measuring the impact when applying the (COSO) framework to various other variables. Additionally, the researcher noted that the relationship between the level of institutional performance and the internal control system has not been studied before. Therefore, this study has been prepared to achieve the goals of the current research, build the theoretical framework, and outline practical analysis procedures. It also aims to provide an applied measurement of the impact of the internal control system, along with its main components based on the (COSO) model, on institutional performance in commercial banks in Jordan.

#### 4. THE STUDY METHODOLOGY

##### 4.1. THE HYPOTHESES OF THE STUDY

Based on the problem and the study's research questions, the hypotheses were formulated as follows:

The first main hypothesis: There is no statistically significant impact ( $\alpha \leq 0.05$ ) of the internal control system, according to the (COSO) model, on institutional performance in commercial banks in Jordan, from the perspective of the two study samples.

##### Sub-Hypotheses are;

**H0-1:** There is no statistically significant impact of the internal control system, as per the (COSO) model, on the working environment of commercial banks in Jordan.

**H0-2:** There is no statistically significant impact of the internal control system, as per the (COSO) model, on risk assessment and goal achievement.

**H0-3:** There is no statistically significant impact of the internal control system, as per the (COSO) model, on operational activities.

**H0-4:** There is no statistically significant impact of the internal control system according to the (COSO) model on information and communication systems.

**H0-5:** There is no statistically significant impact of the internal control system according to the (COSO) model on monitoring and follow-up.

**The second main hypothesis is as follows:** There are no statistically significant differences between the views of the two study samples regarding the impact of the internal control system according to the COSO model on the working environment of commercial banks in Jordan.

#### 5. STUDY VARIABLES:

Based on the assumptions outlined in the preceding section, the study variables are as follows:

Independent Variable: Internal Control System according to the (COSO) model.

Dependent Variables: Institutional Performance in Commercial Banks, with sub variables including Working Environment, Risk Assessment & Achievement of Goals, Operational Activities, Information & Communication System, and Organizational Monitoring & Follow-up.

#### 6. DATA COLLECTION METHOD:

In addition to referencing relevant literature, this research relied on the practical aspect, employing the questionnaire method to collect primary and secondary data for the study. The questionnaire was designed by the researcher based on previous studies and the updated version of the (COSO) model from 2013, as it represents an international framework for internal control. The study's participant pool comprised two samples: (S1) employees in the internal control and internal audit departments of commercial banks in Jordan and (S2) external audit offices. The researcher distributed a total of (240) questionnaires to the study's participants, maintaining a ratio of 1:2, and received (210) valid questionnaires for statistical analysis.

#### 7. DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLES:

Analysis of the relative frequency distribution (RFD) for data pertaining to the demographic characteristics of both samples revealed that the respondents possessed high levels of scientific and professional qualifications and practical experience. These qualifications enabled them to comprehend and respond to the questionnaire's questions effectively, ensuring the study's findings' objective attributes were met.

**8 STATISTICAL TOOLS**

Cronbach's Alpha & Kolmogorov-Smirnov Test (K-S): In order to test the validity and reliability of the study instruments and their suitability for the research purposes, the researcher sought a double review of the study instrument. An external peer review was also conducted, where it was presented to a panel of specialists and university professors. Additionally, the researcher calculated Cronbach's Alpha, with the total value of all the study items being (0.885). Furthermore, the results of the K-S test indicated that the study data follow a normal distribution. Moreover, the sample size of the study is large, which confirms the normal distribution of data.

The mean and standard deviation were used to present the study findings, describe responses, and test the hypotheses by calculating the mean and standard deviation. This was done in comparison to a five-point Likert scale, which was used to determine the relative importance of each item in the questionnaire. The cutoff point was employed to interpret the findings and make decisions regarding the acceptance or rejection of the hypotheses.

The First Main Hypothesis: There is no statistically significant impact ( $\alpha \leq 0.05$ ) of the internal control system, as per the (COSO) model, on institutional performance in commercial banks in Jordan, as perceived by the two study samples.

Table (1) presents a summary of the main and sub-hypothesis results for both samples. The mean score for the total responses regarding the impact of implementing the (COSO) model on institutional performance in Jordanian commercial banks is high, at 3.62 and 3.75, respectively, on the Likert quintet scale. Additionally, the standard deviation for the total responses is 0.70 and 0.74, confirming the existence of an impact resulting from the implementation of the internal control system according to the (COSO) model on the institutional performance of commercial banks in Jordan.

**9. RESULTS AND DISCUSSION**

**Table 1: Summary of hypotheses**

|                              | S 1   |          | S 2   |          | Test Results  |
|------------------------------|-------|----------|-------|----------|---|
|                              | $\mu$ | $\Delta$ | $\mu$ | $\delta$ |   |
| Control environment          | 3.44  | 0.76     | 3.67  | 0.75     | high degree of significance exceeding the average the hypothesis of the study according to the Likert quintet Scale |
| Risk assessment              | 3.74  | 0.67     | 3.76  | 0.67     |   |
| Control activities           | 3.68  | 0.74     | 3.73  | 0.78     |   |
| Information & Communications | 3.55  | 0.65     | 3.77  | 0.73     |   |
| Monitoring                   | 3.71  | 0.78     | 3.79  | 0.75     |   |
| Institutional performance    | 3.62  | 0.70     | 3.75  | 0.74     |   |

**The First Sub-Hypothesis: There is no significant statistical impact of the internal control system according to the COSO model on the working environment.**

Table (2): Displays axes numbered from 1 to 5, representing the extent to which the application of the internal control system, in accordance with the COSO model, contributes to enhancing values such as integrity and moral values, the independence of the Board of Directors and its control role, the identification of appropriate authorities and responsibilities to achieve goals, the commitment to attract, develop, and retain qualified individuals, the assessment of

performance, and holding individuals accountable for their responsibilities. The mean of the participants' responses for both samples was 3.44 and 3.67, respectively. These values indicate a high level of significance beyond the hypothetical average for the study according to the Likert Scale. The standard deviation of the total responses was 0.76 and 0.75, respectively. This clearly suggests that the application of the internal control system, as per the COSO model, has an impact on the work environment in commercial banks in Jordan. Consequently, we reject the null hypothesis and accept the alternative one.

| Applying (COSO) model impacts the work environment by: |   | S 1   |          | S 2   |          |
|--|---|-------|----------|-------|----------|
|  |   | $\mu$ | $\delta$ | $\mu$ | $\delta$ |
| 1  | Promoting integrity and ethical values at the top of management's interests.                            | 3.22  | 0.85     | 3.46  | 0.74     |
| 2  | Obvious and specific criteria for behavioral commitment and ethical values.                             | 3.30  | 0.78     | 3.62  | 0.66     |
| 3  | Assessing compliance with behavioral and ethical values.  | 3.13  | 0.84     | 3.57  | 0.79     |
| 4  | Handling behavioral deviations on time.   | 3.33  | 0.96     | 3.87  | 0.80     |
| Average: Transparency and ethical values               |   | 3.24  | 0.86     | 3.63  | 0.75     |
| 5  | Ensuring that the board of directors has a high level of independence.                                  | 3.32  | 0.84     | 3.62  | 0.92     |
| 6  | The board is to have a high level of scientific and professional experience.                            | 3.61  | 0.83     | 3.48  | 0.58     |
| 7  | Defining the responsibilities of the board of directors and its controlling role.                       | 3.12  | 0.86     | 3.72  | 0.77     |
| 8  | Enables the board of directors to verify the control components   | 3.26  | 0.74     | 3.59  | 0.69     |
| Average: Board independence and controlling role       |   | 3.33  | 0.82     | 3.60  | 0.74     |
| 9  | An organizational structure appropriately suits the size and the nature of work.                        | 3.74  | 0.67     | 3.71  | 0.73     |
| 10   | A working guide clarifying communication channels between the administrative different levels.          | 3.70  | 0.63     | 3.68  | 0.79     |
| 11   | A working guide clarifies the powers and responsibilities.  | 3.66  | 0.66     | 3.73  | 0.68     |
| Average: Authorities and responsibility                |   | 3.70  | 0.69     | 3.71  | 0.73     |
| 12   | A working guide that suits policies and practices for each activity.                                    | 3.19  | 0.87     | 3.74  | 0.88     |
| 13   | Obvious recruitment policies to mobilize and maintain competencies.                                     | 3.24  | 0.74     | 3.58  | 0.67     |
| 14   | Policies and designing programs to mobilize professional competencies.                                  | 3.15  | 0.68     | 3.67  | 0.84     |
| 15   | Programs to train and maintain employees.   | 3.47  | 0.71     | 3.77  | 0.86     |
| Average: Employees                                     |   | 3.26  | 0.75     | 3.69  | 0.81     |
| 16   | Identifying accountability procedures through organization structures.                                  | 3.63  | 0.70     | 3.72  | 0.74     |
| 17   | Creating obvious and specific performance assessment criteria.  | 3.72  | 0.70     | 3.80  | 0.66     |
| 18   | Using incentives and rewards to encourage employees and develop their performance.                      | 3.64  | 0.68     | 3.76  | 0.76     |
| 19   | Taking into consideration the work pressure and the different circumstances when assessing performance. | 3.75  | 0.72     | 3.60  | 0.59     |
| 20   | Obvious and specific disciplinary procedures when assessing performance.                                | 3.61  | 0.66     | 3.74  | 0.74     |
| Average: Assessing individuals                         |   | 3.67  | 0.69     | 3.73  | 0.70     |
| Average (1- 20)  |   | 3.44  | 0.76     | 3.67  | 0.75     |

**The Second Sub-Hypothesis: T Cindy Pearl M. Quitahere is no significant statistical impact of the internal control system, according to the COSO model, on risk assessment and goal achievement.**

Table (3) displays the responses related to axes (6-9). The implementation of the internal control system in accordance with the COSO model contributes to a clear identification of objectives. This, in turn, assists the organization in identifying and evaluating the risks associated with these objectives, aligning external financial and non-financial reporting with accounting standards and legal requirements, as well as conforming to professional legislation and

corporate governance laws. It also aids in identifying and analyzing all activities and processes, ultimately enhancing the capacity of the risk management system.

In general, the mean of the total responses from both samples was (3.74) and (3.76), indicating high statistical significance. Therefore, these means exceed the hypothetical mean of the study according to the Likert Scale. The standard deviation of the total responses was (0.67) and (0.61). This suggests that the application of the COSO model has a significant impact on the assessment of risks and the achievement of goals in commercial banks in Jordan. Consequently, it is advisable to reject the null hypothesis and accept the alternative one.

**Table (3) Risk Assessment and Achieving Goals**

| Applying (COSO) model affects the assessment of risks and the achievement goals by:              |   | S 1   |          | S 2   |          |
|--|---|-------|----------|-------|----------|
|  |   | $\mu$ | $\delta$ | $\mu$ | $\delta$ |
| 6. Clearly set targets to help the organization identify and assess the risks associated with it |   |       |          |       |          |
| 6-1 Operating objectives   |   |       |          |       |          |
| 21   | Operating objectives reflect management options.  | 3.81  | 0.68     | 3.72  | 0.77     |
| 22   | Operating objectives to take into account the risk tolerance.                                 | 3.72  | 0.66     | 3.48  | 0.56     |
| 23   | Defining operation goals and financial performance.   | 3.79  | 0.68     | 3.67  | 0.92     |
| 24   | Operating objectives are the basis for measuring its success in managing available resources. | 3.74  | 0.64     | 3.54  | 0.71     |
| Average  |   | 3.77  | 0.67     | 3.60  | 0.74     |
| 6-2 External financial reporting objectives  |   |       |          |       |          |
| 25   | Are in line with applicable accounting standards.   | 3.74  | 0.70     | 3.79  | 0.71     |
| 26   | Take into account the relative importance of data presentation.                               | 3.73  | 0.68     | 3.65  | 0.69     |
| 27   | Clearly reflected the activities of the organization.   | 3.71  | 0.68     | 3.69  | 0.60     |
| Average  |   | 3.72  | 0.69     | 3.69  | 0.64     |
| 6-3 External and non - financial reporting objectives  |   |       |          |       |          |
| 28   | Correspond to the standards and frameworks adopted.   | 3.64  | 0.66     | 3.76  | 0.72     |
| 29   | Defining accurately.  | 3.74  | 0.69     | 3.78  | 0.65     |
| 30   | Reflect the organization activities.  | 3.72  | 0.66     | 3.70  | 0.66     |
| Average  |   | 3.70  | 0.67     | 3.74  | 0.66     |

|   |  |      |      |      |      |
|---|--|------|------|------|------|
| 6-4 Internal reporting objectives   |  |      |      |      |      |
| 31  | Defining the organization’s goals, to reveal the different management options.                   | 3.71 | 0.65 | 3.59 | 0.76 |
| 32  | Correspond to the standards and frameworks adopted   | 3.74 | 0.66 | 3.63 | 0.64 |
| 33  | Define the activities of the organization accurately.  | 3.79 | 0.72 | 3.65 | 0.83 |
| Average   |  | 3.74 | 0.66 | 3.64 | 0.74 |
| 6-5 Compliance objectives   |  |      |      |      |      |
| 34  | Corresponds with the law, professional legislation, and corporate governance laws.               | 3.77 | 0.66 | 3.74 | 0.87 |
| 35  | Defining the organization’s goals, bearing unkind the tolerance against risks.                   | 3.76 | 0.72 | 3.77 | 0.94 |
| Average   |  | 3.76 | 0.69 | 3.81 | 0.75 |
| Average 6 - (21-35)   |  | 3.97 | 0.66 | 3.77 | 0.85 |
| 7. Identify and analyze risks as a basis for determining how to manage risks.                 |  |      |      |      |      |
| 36  | Cope with all activities and operations for all levels of certain administration                 | 3.69 | 0.71 | 3.76 | 0.80 |
| 37  | Identifying and analyzing internal and external risks factors.                                   | 3.74 | 0.70 | 3.79 | 0.79 |
| 38  | The risk management system takes estimates of the importance of the risks potential.             | 3.66 | 0.60 | 3.83 | 0.57 |
| 39  | Determine how to respond to potential risks.   | 3.62 | 0.62 | 3.77 | 0.75 |
| Average   |  | 3.91 | 0.62 | 3.79 | 0.72 |
| 8. Determining the possibility of cheating in assessing risks                                 |  |      |      |      |      |
| 40  | Identifying the various types of fraud that threaten achieving goals.                            | 3.63 | 0.61 | 3.78 | 0.78 |
| 41  | Identifying mechanisms for assessing challenges and pressures which threaten attaining goals.    | 3.63 | 0.59 | 3.71 | 0.69 |
| 42  | Identifying mechanisms for assessing opportunities that might contribute in obtaining the goals. | 3.65 | 0.61 | 3.70 | 0.94 |
| 43  | Defining the mechanisms for assessing the positions and justifications given for doing business. | 3.68 | 0.66 | 3.77 | 0.97 |
| Average   |  | 3.65 | 0.62 | 3.74 | 0.85 |
| 9. Identifying and assessing the changes that importantly impact the internal control system. |  |      |      |      |      |
| 44  | Assessing external environment.  | 3.64 | 0.66 | 3.82 | 0.62 |
| 45  | Assessing changes in business model and the internal environment.                                | 3.67 | 0.67 | 3.64 | 0.61 |
| 46  | Assessing the changes in administrative leadership.  | 3.66 | 0.65 | 3.71 | 0.73 |
| Average   |  | 3.66 | 0.66 | 3.72 | 0.65 |
| Average (21 – 46)   |  | 3.74 | 0.67 | 3.76 | 0.61 |

**The Third Sub-Hypothesis: There is no significant statistical impact of the internal control system according to the (COSO) model on operational activities.**

Table (4) shows the responses of the study sample on the scale of 10-12. This scale assesses the application of the internal control system in accordance with the (COSO) model, which contributes to the selection and development of control activities aimed at mitigating risks to achieve objectives. It also identifies the relationship between the use of ICT (Information and Communication Technology) in commercial processes and general ICT controls. Furthermore, it contributes to the development of policies and procedures to support administrative directives, determine responsibilities and accountability for policy and procedure implementation, and ensure the timely execution

of work using highly qualified staff. Additionally, it involves the re-evaluation of policies and procedures, as well as corrective actions.

In general, the mean of the total responses for both samples is 3.68 and 3.73, respectively, indicating a high level of significance beyond what was expected according to the Likert Scale. The standard deviation for both responses is 0.74 and 0.78, respectively.

Clearly, applying the internal control system according to the adopted model has a significant impact on operational activities in commercial banks in Jordan. Therefore, it is necessary to reject the null hypothesis and accept the alternative hypothesis.

**Table (4) Control Activities**

|  |   | S 1  |      | S2   |      |
|--|---|------|------|------|------|
|  |   | μ    | δ    | μ    | δ    |
| 10.  | Applying (COSO) model adopted affects operational activities by Selecting and developing monitoring activities that helps mitigate the risks to achieving the objectives. |      |      |      |      |
| 47   | Achieving integrating with risk assessment.   | 3.64 | 0.67 | 3.60 | 0.74 |
| 48   | Considering of the internal factors of the organization.  | 3.75 | 0.66 | 3.75 | 0.71 |
| 49   | Contribute in identifying related business operations.  | 3.79 | 0.68 | 3.82 | 0.87 |
| 50   | Identifying the level at which the activities are done.   | 3.36 | 0.70 | 3.57 | 0.79 |
| 51   | Identifying activities that contribute in separating duties and responsibilities.   | 3.64 | 0.68 | 3.72 | 0.71 |
| Average  |   | 3.62 | 0.69 | 3.69 | 0.75 |
| 11. Selecting and developing Appropriateness technology to control activities to support obtaining objectives. |   |      |      |      |      |
| 52   | Enables to determine the relationship between the use of technology and the general controls of information systems, and communication technology.                        | 3.78 | 0.74 | 3.75 | 0.83 |
| 53   | Monitoring activities support information and communications technology infrastructure.   | 3.76 | 0.65 | 3.70 | 0.62 |
| 54   | Monitoring activities helps in establish security management process monitoring activities.   | 3.69 | 0.60 | 3.73 | 0.68 |
| 55   | Monitoring activities support to the establishment of activities related to the acquisition, development and maintenance of technology.                                   | 3.71 | 0.69 | 3.68 | 0.77 |
| Average  |   | 3.71 | 0.67 | 3.72 | 0.73 |
| 12. Determining the monitoring activities through the essential policies and procedures.                       |   |      |      |      |      |
| 56   | Monitoring activities contributes in developing policies and procedures to support administrative directives.   | 3.69 | 0.61 | 3.78 | 0.79 |
| 57   | Monitoring activities enable to determine responsibility for doing policies and procedures.   | 3.79 | 0.67 | 3.74 | 0.72 |
| 58   | Monitoring activities help implement the business in a timely manner.   | 3.73 | 0.68 | 3.67 | 0.58 |
| 59   | Monitoring activities that contribute in taking corrective actions.   | 3.68 | 0.63 | 3.65 | 0.69 |
| 60   | Monitoring activities contribute in carrying out the business using qualified employees.  | 3.71 | 0.66 | 3.88 | 0.73 |

|                   |  |      |      |      |      |
|-------------------|--|------|------|------|------|
| 61                | Monitoring activities help reassess policies and procedures. | 3.74 | 0.68 | 3.78 | 0.88 |
| Average           |  | 3.72 | 0.66 | 3.77 | 0.87 |
| Average (47 – 61) |  | 3.68 | 0.74 | 3.73 | 0.78 |

**The fourth Sub-Hypothesis: There is no significant statistical impact of the internal control system according to the (COSO) model on information and communication.**

Table (5) displays the study sample's responses in relation to axes (13-15). The implementation of the internal control system in accordance with the (COSO) model is shown to contribute significantly to the provision of relevant and high-quality information. It also aids in identifying information requirements within the information system, particularly regarding the identification of internal and external data sources and data processing. This contributes to maintaining data quality throughout all processing stages, all while considering the associated costs and benefits of information and communication systems. Furthermore, it enhances the organization's ability to communicate with external parties on

matters affecting internal control performance and facilitates separate lines of communication within the organization's communication channels, ensuring clarity and ease of information transmission.

In summary, the mean of the total responses for both samples is (3.55) and (3.77), respectively, indicating a high level of significance exceeding the expected hypothetical average of the study according to the Likert Scale. The standard deviation for both samples is (0.65) and (0.73), respectively. These statistics confirm that the application of the internal control system according to the (COSO) model has a significant impact on the information and communication systems in commercial banks in Jordan. Consequently, the null hypothesis should be rejected in favor of the alternative hypothesis.

**Table (5) Information and Communication**

|   |  | S 1   |          | S 2   |          |
|---|--|-------|----------|-------|----------|
| Applying (COSO) model impacts the information and communication systems in commercial by:   |  | $\mu$ | $\delta$ | $\mu$ | $\delta$ |
| 13. Providing relevant information of good quality or generating and using it to support the performance of other elements of internal control        |  |       |          |       |          |
| 62  | Identifying requirements of information system.  | 3.79  | 0.67     | 3.78  | 0.74     |
| 63  | Identifying internal and external data sources.  | 3.83  | 0.65     | 3.76  | 0.65     |
| 64  | Improve data processing within the information system.   | 3.67  | 0.67     | 3.69  | 0.60     |
| 65  | Maintains quality in all stages of processing.   | 3.78  | 0.69     | 3.71  | 0.69     |
| 66  | Reducing costs and maximizing benefits.  | 3.79  | 0.71     | 3.71  | 0.67     |
| Average   |  | 3.77  | 0.68     | 3.73  | 0.67     |
| 14. Communicating with internal parties within the framework of objectives to support the performance of the multiple components of internal control. |  |       |          |       |          |
| 67  | Conveying information within the communication channels in the institution simply and obviously.   | 3.80  | 0.67     | 3.94  | 0.76     |
| 68  | Defining the channels of communication with the Board of Directors in order to contribute in following up the internal control responsibilities. | 3.67  | 0.58     | 3.70  | 0.62     |
| 69  | Communicating with the Board of Directors throughout separate and specified channels of communication.   | 3.80  | 0.54     | 3.73  | 0.68     |
| Average   |  | 3.77  | 0.64     | 3.76  | 0.71     |
| 15. Communicating with external parties on issues affecting the performance of internal control.  |  |       |          |       |          |
| 70  |  |       |          |       |          |
| 71  | Communicating with internal and external parties within the organization's communication channels simply and obviously.                          | 3.83  | 0.65     | 3.79  | 0.73     |
| 72  | Communicating with internal and external parties through separate and specific channels of communication.  | 3.67  | 0.69     | 3.72  | 0.86     |
| 73  | Enhancing the ability of the institution's communication system to provide separate channels of communication.                                   | 3.78  | 0.71     | 3.88  | 0.77     |
| Average   |  | 3.77  | 0.68     | 3.81  | 0.82     |
| Average (62 – 73)   |  | 3.55  | 0.65     | 3.77  | 0.73     |

**The Fifth Sub-Hypothesis: There is no significant statistical impact of the internal control system according to the (COSO) model on monitoring and follow-up activities.**

Table (6) shows the results of the survey sample's responses to axes 16 and 17. The application of the internal control system in accordance with the (COSO) model contributes to the identification of mechanisms for the ongoing and independent assessment of whether internal control elements are present and effective. It is important to note that this assessment involves both current and separate evaluations, and the process is conducted by staff with appropriate qualifications and experience within the scope of their work,

in a specific and objective manner, free from bias and personal relationships. Additionally, this contributes to assessing the shortcomings of internal control and communicating them in a timely manner to the parties responsible for corrective action.

As a result, the participants' responses for both samples indicate high scores of 3.71 and 3.79 on the Likert Scale, which exceed the hypothetical study average. Furthermore, the standard deviation of the total answers for both samples is 0.78 and 0.75, respectively. These values support the notion that applying the (COSO) model may indeed have an effect. This leads us to reject the null hypothesis and accept the alternative one.

**Table (6) Monitoring Activities**

|   |   | S 1   |          | S 2   |          |
|---|---|-------|----------|-------|----------|
| Applying (COSO) model impact on controlling and follow-up activities by:  |   | $\mu$ | $\delta$ | $\mu$ | $\delta$ |
| 16. Implementing ongoing and independent assessments to make sure that whether the elements of internal control are in place and effectiveness. |   |       |          |       |          |
| 75  | Evaluation mechanisms take into account a combination of ongoing and separate evaluation.                   | 3.69  | 0.72     | 3.77  | 0.64     |
| 76  | Assessing process should be carried out form employees who hold appropriate qualifications and experiences. | 3.65  | 0.60     | 3.73  | 0.78     |
| 77  | Identifying the mechanisms of assessment to have integration with the commercial operations attained.       | 3.76  | 0.65     | 3.71  | 0.76     |
| 78  | Identifying the mechanisms of assessment within the scope of work.  | 3.70  | 0.66     | 3.80  | 0.92     |
| 79  | Identifying the mechanisms of assessment objectively, away from bias and personal relationships.            | 3.57  | 0.59     | 3.77  | 0.87     |
| Average   |   | 3.69  | 0.66     | 3.77  | 0.76     |
| 17. Assessing deficiencies in internal control and communicating on time to the parties who are responsible for taking corrective actions.      |   |       |          |       |          |
| 80  | Identifying mechanisms to do ongoing and independent internal control assessments.                          | 3.71  | 0.67     | 3.76  | 0.74     |
| 81  | Informing the responsible parties about any deficiencies of internal control on time.                       | 3.74  | 0.70     | 3.81  | 0.68     |
| 82  | Informing the responsible parties about the required corrective actions.                                    | 3.91  | 0.67     | 3.89  | 0.79     |
| 83  | Monitoring the corrective actions to handle deficiencies and guaranteeing that they are done accurately.    | 3.67  | 0.63     | 3.74  | 0.72     |
| Average   |   | 3.76  | 0.67     | 3.80  | 0.73     |
| Average (75 – 83)   |   | 3.71  | 0.78     | 3.79  | 0.75     |

**10. HYPOTHESES TESTING**

**10.1. Independent Sample t-Test**

The researcher conducted an independent sample t-test to investigate the first main hypothesis. The results are presented in Table 7. The t-value was found to be 7.986 and 8.561, both of which are statistically significant at the indicated level, with p-values of 0.000. Consequently, we decided to reject the null hypothesis, which stated, "There is no statistically significant impact ( $\alpha \leq 0.05$ ) of the internal control system according to the (COSO) model on institutional performance in commercial banks in Jordan, as perceived by the two study samples." This decision supports the alternative hypothesis, which posits, "There is a

statistically significant impact ( $\alpha \leq 0.05$ ) of the internal control system according to the (COSO) model on institutional performance in commercial banks in Jordan, as perceived by the two study samples."

Regarding the second main hypothesis, the results also indicate statistically significant differences in the views of the two study samples concerning the impact of the internal control system according to the COSO model on the working environment of commercial banks in Jordan. Therefore, we rejected the null hypothesis and aligned with the alternative hypothesis.

|     | No. | $\mu$ | $\Delta$ | t-test | P – Value | Sig.   | Test result                 |
|-----|-----|-------|----------|--------|-----------|--|-----------------------------|
| S 1 | 140 | 3.62  | 0.70     | 7.986  | 0.000     | statistical significance at the level ( $\alpha \leq 0.01$ ) | Rejecting Ho & Accepting H1 |
| S 2 | 70  | 3.75  | 0.74     | 8.561  | 0.000     |  |                             |

**10.2 The Nature of the Relationships between Variables (Pearson’s correlation).**

Table (8) displays the results of the analysis of Pearson's correlation coefficients and the nature of the relationships between variables. We

conclude that there is a strong and statistically significant positive relationship between the internal control system, as defined by the COSO model and its main components, and the level of institutional performance in commercial banks in Jordan, as perceived by the two study samples. This relationship holds at the  $\leq 0.01$  significance level.

**Table (8) person's correlation analysis**

|                              | S 1   | S 2   | p- value | Sig.   | Test result                    |
|------------------------------|-------|-------|----------|--|--------------------------------|
|                              | R     |       |          |  |                                |
| Control environment          | 0.864 | 0.935 | 0.000    | statistical significance at the level ( $\alpha \leq 0.01$ ) | Strong & Positive relationship |
| Risk assessment              | 0.873 | 0.844 | 0.000    |  |                                |
| Control activities           | 0.927 | 0.953 | 0.000    |  |                                |
| Information & Communications | 0.914 | 0.967 | 0.000    |  |                                |
| Monitoring                   | 0.838 | 0.852 | 0.000    |  |                                |
| internal control             | 0.817 | 0.932 | 0.000    |  |                                |

**10.3 The Relationship between Study Variables (Simple Regression Analysis).**

Table 9) shows a statistically significant positive effect between the elements of internal control and the level of institutional performance in commercial banks in Jordan, as observed in both study samples. The explanatory value of the

main variables ( $R = 0.623$ ) and the regression coefficient ( $R^2 = 0.388$ ) confirm the presence of a linear correlation between the study variables. Furthermore, the values of (T) and (F) are statistically significant at ( $\alpha \leq 0.01$ ). Therefore, we reject the null hypothesis and confirm alignment with the alternative hypothesis.

**Table (9) simple regression analysis**

| Variables                    | R      | R2    | B     | F      | Sig. F | T     | Sig. T | Test result  |
|------------------------------|--------|-------|-------|--------|--------|-------|--------|--|
| Control environment          | 0..594 | 0.353 | 5.317 | 32.480 | 0.000  | 7.428 | 0.000  | statistical significance at the level ( $\alpha \leq 0.01$ ) |
| Risk assessment              | 0.628  | 0.394 | 5.471 | 27.824 | 0.000  | 7.633 | 0.000  |  |
| Control activities           | 0.609  | 0.371 | 5.218 | 34.674 | 0.000  | 7.118 | 0.000  |  |
| Information & Communications | 0.596  | 0.355 | 5.352 | 29.853 | 0.000  | 7.974 | 0.000  |  |
| Monitoring                   | 0.614  | 0.377 | 5.446 | 26.482 | 0.000  | 7.962 | 0.000  |  |
| Internal control             | 0.623  | 0.388 | 5.409 | 31.216 | 0.000  | 7.746 | 0.000  |  |

**11.FINDINGS, DISCUSSION, AND RECOMMENDATIONS**

Upon reviewing the aforementioned information, the researcher has concluded that the application of the (COSO) model has a positive impact on the work environment. It achieves this by enhancing the transparency of the institution and its commitment to ethical values, the independence of the Board of Directors, the control function, the identification of appropriate authorities, a sense of responsibility in goal attainment, effective human resources management, and performance assessment. These findings align with the results of studies and research reviewed in the theoretical framework of this study, including those by [24, 25, 23, 2, 16].

Additionally, the (COSO) model has a significant impact on risk assessment and the achievement of organizational objectives. It aids institutions in identifying and evaluating risks related to their operations. Moreover, it facilitates the identification and assessment of changes that could substantially affect the internal control system. These findings also correspond with the outcomes of studies and research discussed in the theoretical framework of this study, including the work of [15].

Furthermore, the (COSO) model plays a crucial role in the selection and development of control activities aimed at mitigating risks, thereby contributing to the successful achievement of organizational goals. It aligns control activities with the evolving landscape of technology, thus aiding in goal attainment and the identification of appropriate control measures. The model strengthens the role of information systems by providing relevant, high-quality information or generating it, which in turn supports the performance of other elements within the internal control framework. These findings are consistent with studies and research mentioned in the theoretical framework of this study, including the work of [18, 21, 22].

Lastly, the application of the (COSO) model has a positive impact on monitoring and follow-up activities. It helps in identifying mechanisms for ongoing, independent assessments of internal control and ensures timely communication of findings to responsible parties for remedial actions. These findings align with research and studies discussed in the theoretical framework of this study, including those conducted by [19, 20].

Generally, the COSO model, with its main components (control environment, risk assessment, control activities, information and communications, monitoring and follow-up), contributes to improving the level of institutional performance in commercial banks in Jordan. This improvement is based on its relationship with a group of elements and variables that were measured by the study

instrument as indicators for measuring institutional performance in business institutions. These elements and variables include the work environment, risk assessment and management, operational activities, information and communication systems, monitoring and follow-up activities, elements, and indicators. In summary, the findings of the current study generally align with the overall results of the studies and research reviewed in the theoretical framework of the study. Based on the findings and the data presented in the study, it is evident that participants' main responses average around 60%. Therefore, the researcher recommends the following actions: \* Advocating for official institutions to establish a dynamic governance system and prioritize the enhancement of laws and regulations that strengthen institutional governance within the banking sector. \* Making diligent efforts to improve transparency in the workplace, upholding integrity and moral values, enhancing the role of human resources management, and focusing on ongoing education and training for employees in commercial banks in Jordan. \* Granting a more significant role to risk management by developing control activities that contribute to mitigating potential risks that could jeopardize goal achievement. Additionally, implementing enhanced monitoring activities to assess possible threats and deficiencies, and taking necessary corrective actions \* Formulating strategic plans to enhance information and communication systems and bolstering their role in the operational processes.\* Conducting further applied research studies and utilizing financial and qualitative indicators to measure and evaluate institutional performance in the financial and banking sector

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