

Assessing IT governance through internal audit to enhance internal control processes

Evaluer la gouvernance informatique par l'audit interne pour améliorer les processus de contrôle interne

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Abstract: This research investigates how internal auditing has evolved with the rise of governance concepts and the growing influence of information technology in the business sector, culminating in the establishment of IT governance. It delves into how internal auditing interacts with the effective application of IT governance and the enhancement of internal control processes in Algerian banks, based on a survey of employees and executives. The findings reveal that IT governance has become a value-adding function within organizations. Furthermore, evaluating IT governance through internal auditing supports its successful application and strengthens internal control processes.

Keywords : Internal Auditing ; IT Governance ; Internal Control.

Jel Classification Codes: G38; M42

Résumé: Cette recherche explore les changements dans l'audit interne en conséquence de l'apparition des concepts de gouvernance et de l'essor des technologies de l'information (TI). En enquêtant auprès des employés et des dirigeants des banques algériennes, l'étude explore la relation entre l'audit interne, la mise en œuvre de la gouvernance des TI, et l'amélioration des contrôles internes. Les résultats montrent que la gouvernance des TI, désormais une fonction créatrice de valeur, est renforcée par l'évaluation via l'audit interne, ce qui améliore les processus de contrôle interne.

Mots-clés : Audit interne ; Gouvernance des TI ; Contrôle interne.

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1. INTRODUCTION

The internal auditing role has been influenced by changes in the contemporary business landscape, notably with the advent of corporate governance and the increasing significance of information technology (IT).within organizations. IT has become intertwined with all organizational functions due to its critical importance. No longer limited to just a support role, IT now also plays a significant part in risk management and value creation. As a result, IT governance has emerged as a process aimed at optimizing the use of information systems within organizations, ultimately leading to improved control processes. The implementation and establishment of IT governance within an organization is achieved through objective evaluation by internal auditing, which is essential for enhancing control processes and supporting the organization's goals and strategies.

Based on this premise, the following main research question can be posed:

1.1 Research Problem: How does internal auditing contribute to assessing IT governance and enhancing internal control processes?

Sub-questions:

- How does the evaluation of IT governance through internal audit affect its application in banks?
- In what ways does evaluating IT governance via internal auditing influence the enhancement of internal control processes in banks?

1.2 Research Hypotheses:

- A statistically significant positive association exists between assessing IT governance through internal auditing and the improvement of internal control processes.
- Evaluating IT governance via internal auditing has a positive impact on its effective implementation in banks.
- Assessing IT governance via internal auditing contributes to the improvement of internal control processes in banks.

1.3 Objectives of the Research:

- Examine the fundamental principles of internal auditing, IT governance, and internal control systems.

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- Analyze the evolution of internal auditing and its links to governance and IT advancements.
- Understand IT governance and the key international standards that shape its principles.
- Evaluate how the assessment of IT governance via internal auditing influences its implementation in local banks.
- Assess the impact of IT governance assessment on improving internal control processes in local banks.

1.4 Significance of the Study:

The research provides valuable insights into how internal auditing contributes to the objective evaluation of IT governance and its influence on effective execution and improvement of control processes in organizations. Key areas such as internal auditing, governance, information technology, and internal control are of significant importance to the national economy, especially in the banking sector, and underscore their benefits to both the banking system and the broader economy.

1.5 Methodology:

The research adopts a descriptive-analytical approach for the theoretical components and utilizes a case study method for the practical components. A questionnaire is designed and distributed to employees of the banking agencies under study, with the analysis and processing carried out using the SPSS statistical software.

1.6 Previous Studies:

❖ **Study** (Shreeqi's , 2015).

The study seeks to illuminate the role of internal auditing in facilitating effective governance and boosting organizational performance. It concludes that internal auditing serves as a key support function, playing an essential role in both establishing robust governance and enhancing organizational performance.

Study (Abdelwahid , 2017)

The study aims to show how IT governance aligns information systems with organizational goals and how internal auditing assesses this alignment, highlighting the importance of evaluating IT governance through internal auditing.

Study (Hamimsh, 2016)

The study explores how IT auditing supports IT governance by mitigating IT risks and strengthening control over IT systems.

❖ **Study (Bin Said, 2015):**

The study reveals that IT governance enhances the quality and reliability of financial information systems, which is vital for effective management and decision-making.

Theoretical Framework of Study Variables:

2.1 Internal Auditing

Auditing means (almaany, 2024): Auditing involves examining equipment, programs, activities, and procedures to assess their effectiveness and overall performance within the system.

The broad concept of internal auditing encompasses the following aspects: (AL-wardat, 2014, p. 33) " An unbiased and objective consulting and assurance role intended to enhance organizational value by optimizing operations. It helps the organization achieve its objectives through a systematic and thorough evaluation and improvement of risk management, control, and governance processes.

2.1.1 Fundamental Functions of Internal Auditing:

Assessment of Risk Management: Internal auditors assess the efficacy of the organization's risk management practices, ensuring that significant risks are properly identified, evaluated, and managed. (Reding, Sobel, & Anderson, 2013).

• **Evaluation of Internal Controls:** Internal auditors review the sufficiency and performance of internal controls by examining both financial and operational controls to ensure they are functioning properly. (COSO, 2013).

• **Governance Processes:** Internal auditing involves evaluating governance processes within the organization. This includes ensuring that ethical standards and values are upheld, performance management is effective, and accountability is maintained.

- **Compliance with Laws and Regulations:** Internal auditors ensure that the organization adheres to applicable laws and regulations, and internal policies. This helps in preventing legal issues and maintaining the organization's reputation.
- **Consulting Activities:** Besides assurance services, internal auditors provide consulting services aimed at improving organizational processes. This includes advising management on best practices and helping to implement improvements.

2.1.2 Standards and Guidelines

Internal auditing practices are guided by standards from organizations such as the Institute of Internal Auditors (IIA), with the International Standards for the Professional Practice of Internal Auditing providing a framework for their effective and efficient execution. (IIA, 2017):

- **Standard 2110 - Governance:** Internal audit activities should review the organization's governance processes and offer recommendations for enhancements.
 - **Standard 2120 - Risk Management:** Internal audit should evaluate the organization's risks associated with governance, operational processes, and information systems.
- Standard 2130 - Control:** Internal audit must evaluate the effectiveness of control measures in managing risks across governance, operations, and information systems.

2.1.3 Evolution of Internal Auditing Concept:

Internal auditing has evolved significantly from its early focus on detecting fraud and ensuring arithmetic accuracy to a strategic role in governance and risk management. Initially concerned with financial accuracy, (Ajao, Olamide, & Temitop, 2016).the mid-20th century saw internal auditors expanding their scope to encompass operational efficiency and effectiveness, as exemplified by the establishment of the Institute of Internal Auditors (IIA) in 1941 (Ramamoorti, 2003). By the end of the 20th century, the focus shifted to risk-based auditing and assessing governance and compliance. In the 21st century, internal auditors became strategic advisors, integrating advanced technologies such as data analytics and AI to enhance audit effectiveness. Additionally, the scope now includes IT

governance, continuous auditing, and evaluating environmental, social, and governance (ESG) factors, reflecting the increasing complexity of the modern business environment. It addresses this progress by improving the services it provides, as the internal audit function, according to the old concept, included examination and evaluation , but under the modern concept, internal audit includes two main functions (Shreeqi, 2015, pp. 121-135):

- **Assurance Services:** These involve an impartial review of evidence to provide an independent evaluation of the effectiveness and adequacy of risk management, control systems, and governance processes.
- **Consulting Services:** These involve advisory processes provided to organizational units within or outside the company, aimed at adding value and improving operations.

2.2 IT Governance:

IT governance is a key part of corporate governance, overseen by the board and senior management

.2.2.1 Understanding IT Governance:

IT governance, as a facet of corporate governance, involves managing and controlling information technology to ensure it supports the organization's strategic objectives.

According to the Information Technology Governance Institute (ITGI), IT governance is defined as: " IT governance is the responsibility of the board of directors and executive management. It is a vital aspect of organizational governance that includes leadership, organizational structures, and processes aimed at ensuring that the organization's information technology aligns with and supports its strategic goals and objectives.." (j & A, 2018, pp. 93-108).

Additionally, the ISO/IEC 38500 standard provides a broader definition, describing IT governance as: " the framework for directing and controlling both current and future use of information technology

(International Organization For Standardization , ISO ,2015).

Implementing good IT governance requires a framework based on three key elements (Raodeo, 2012, pp. 49-59):

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- **Structure:** The organizational framework and decision-making responsibilities.
- **Process:** Procedures for making decisions about IT investments, including proposal, review, and approval stages.
- **Communication:** Methods for monitoring and evaluating outcomes of decisions, and mechanisms for reporting IT investment decisions to various stakeholders, including the board, executive management, business units, IT management, staff, and shareholders.

2.2.2 IT Governance Standards

Several globally recognized standards focus on establishing robust frameworks for IT governance within organizations involves key standards such as:

- COBIT (Control Objectives for Information and Related Technologies **(Linter, 2019, p. 12)**).
- ITIL (Information Technology Infrastructure Library **(AXELOS, 2019, pp. 2-4)**).
- ISO Standards (International Organization for Standardization) **(ISO, 2015)**.
- SOX (Sarbanes-Oxley Act) **(U.S. Congress, 2002)**.

2.3 Internal Control System

- Comprehending Internal Control:

According to the COSO Commission (Committee Of Sponsoring Organizations Of The Treadway Commission, 2013, p. 3)” Internal control involves processes carried out by an organization’s board of directors, management, and staff to ensure reasonable assurance that the organization's objectives are met.”

As stated by the International Federation of Accountants (International Federation of Accountants, 2013, p. 31), Internal control is a fundamental element of both corporate governance and risk management. It is described as a system implemented by the organization’s board of directors, management, and staff to ensure the attainment of the company's objectives.

This system helps in identifying and managing risks, taking advantage of opportunities, and addressing challenges in line in alignment with the organization's risk management strategy and internal control policies.

2.4 The nature of the connection among the variables under investigation:

IT governance and internal control are integral to the organization's governance framework, with internal audit crucially engaging with governance bodies.

The contribution of internal audit to enhancing internal control processes within corporate governance is outlined in Standard 2110 "Governance" from the Institute of Internal Auditors (IIA) (Institute of Internal Auditors (IIA), 2017, p. 85). This standard stipulates that internal audit should:

- Evaluate governance processes and suggest improvements to foster ethics and values.
- Ensure effective performance management and accountability.
- Communicate information about risks and controls.
- Facilitate coordination among the board, external auditors, and management.

Standard 2120 requires internal audit to assess risks and verify that IT governance aligns with organizational objectives.

Additionally, Standard 2130 "Control" mandates internal audit to evaluate The efficiency of control strategies in handling risks, such as assessing the reliability of information, operational efficiency, asset protection, and regulatory compliance.

3.Field Study Framework

3.1 Approach and Techniques

3.1.1 Target population and Specimen: This research on " Assessing IT governance through internal audit to enhance internal control processes " examines a sample of commercial banks in Algeria. Questionnaires were distributed among the sample participants, as detailed in the table below:

Table (1): Distribution of Questionnaires

Description	Distributed	Returned	Not Returned	Valid for Analysis	Invalid
Number	50	35	5	30	5
Percentage	100%	70%	10%	60%	10%

Source: created by the researcher

3.1.2 The Survey Form:

The research utilized a survey form as the main tool for collecting data, aligning with the study's objectives. It was developed after reviewing literature, consulting experts, and analyzing existing questionnaires. The final questionnaire included :

- **Introduction:** Briefly explains the study's purpose, assures confidentiality, and states that data will be used only for research.
- **Section One:** Collects personal information such as educational background, experience, specialization, job role, and relevant training.
- **Section Two:** Contains statements on:
 - **Theme One:** Evaluates IT governance assessment through internal audits (12 statements).
 - **Theme Two:** Assesses the impact of IT governance on improving internal control processes (11 statements).

3.1.3 The Scale Used

We used the "Five-Point Likert Scale" was used to evaluate the study sample's responses to the survey items, providing a detailed ranking of their answers, as illustrated in the following table is provided:

Table (2): Five-Point Likert Rating Scale

Rating Scale	Strongly Oppose	Oppose	Neutral	Support	Strongly Support
Score	1	2	3	4	5

Reference: (Khair & Abu Zaid, 2010)

3.1.4 Statistical Processing Methods

To perform the statistical analysis for our study, we utilized a set of methods as follows (Al-Qahtani, 2015, p. 119) :

- **Arithmetic Mean:** Used to measure the sum of the values divided by the total count of values.
- **Measure of Variability:** Used to measure the square root of the variance and assess the extent of data dispersion from the mean."
- **Univariate Linear Regression:** Used to study the causal relationship between the evaluation of IT governance and internal control.
- **Pearson Correlation Coefficient (r):** Used to measure the linear bivariate relationship between two variables, which is a quantitative descriptive indicator ranging between (+1) and (-1), where a positive value denotes a direct association between the variables, and a negative value signifies an inverse connection between them (Dudin, 2013, p. 137)
- **Kolmogorov-Smirnov Test:** Used to test whether the data follows a normal distribution or not.
- **Statistical Analysis Software (SPSS):** Used to analyze the survey data and identify trends and patterns., and test the validity of the hypotheses after statistical processing.

3.2. Results and Discussion

3.2.1. Details of the Study Sample Features

To highlight the findings, the table below outlines Details of the Study Sample Features

Table (3): Study Sample Overview

Variables	Levels	Frequenc y	Percenta ge %
Educational Qualification	Bachelor's Degree	19	54.29
	Higher Degrees	5	14.29
	Computer Engineering	5	14.29
	Other	6	17.14
Total		35	100.00
Field of Study	Accounting	16	45.71
	Finance	11	31.43
	Business Administration	4	11.43
	Computer Science	4	11.43
Total		35	100.00
Job Title	Manager	4	11.43
	Internal Auditor	3	8.57
	Head of Department	3	8.57
	Employee	25	71.43
Total		35	100.00
period of knowledge	Under 5 Years	6	17.14
	5 to 10 Years	10	28.57
	10 to 15 Years	8	22.86
	Beyond 15 Years	11	31.43
Total		35	100.00
Training Field	Accounting	12	34.29
	Auditing	9	25.71
	Computer Technology	14	40.00
Total		35	100.00
Number of Training Courses	One Course	28	80.00
	More than One Course	7	20.00
Total		35	100.00

Source: created by the researcher based on Excel results.

Analysis: The table details the study sample, showing that most participants have a Bachelor's degree, with backgrounds in accounting and computer

technology. Most are experienced employees (over five years) who have attended at least one training course, mainly in computer technology and accounting.

3.2.2 *Psychometric Characteristics of the Instrument:*

- **Internal Consistency of the Instrument:** This assesses how well each questionnaire item aligns with its domain, measured by the correlation between items and the domain's overall score.
- **First Dimension:** Evaluation of IT Governance through Internal Audit in the Bank.

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Table (4): Pearson Correlation Coefficients Between Each Item of the Dimension " IT Governance Assessment for the Bank " and the Overall Dimension Score

Item Number	Statement	Pearson Correlation	p-value (Sig)
01	The bank has an IT master plan that considers its strategies.	0.640	0.001
02	The bank has an IT engineering and construction unit that monitors, follows up, and arbitrates.	0.920	0.000
03	The bank has IT resources, including material, software, and human resources.	0.550	0.002
04	All resources necessary to achieve the expected program results are documented.	0.460	0.003
05	The internal auditor identifies the types of risks the bank faces, whether technological or human.	0.780	0.000
06	The internal auditor objectively manages information risks.	0.420	0.007
07	The bank's management sets a reference plan for managing information risks.	0.550	0.002
08	The internal auditor informs the bank's management about the risks, allowing them to make well-informed decisions.	0.360	0.015
09	The bank's management uses performance indicators.	0.530	0.001
10	The bank ensures conscious and committed leadership.	0.410	0.005
11	Communications are based on crisis reporting plans and the evaluation of crisis-related publications and reports.	0.320	0.030
12	The internal auditor evaluates IT systems through best practices in governance, value management, and investment portfolios.	0.580	0.000

Source: created by the researcher based on SPSS results.

table (4) reveals high Pearson correlation coefficients (0.320 to 0.920) at $\alpha \geq 0.05$, indicating strong alignment and high internal consistency of the measurement tool.

-Dimension Two: Improving Internal Control Processes

Table (5): presents the Pearson correlation coefficients for each item within the dimension of internal control effectiveness, relative to the overall dimension score.

Item No.	Statement	Pearson Correlation	Significance Value (Sig)
01	Evaluating IT governance helps the bank promote adherence to integrity and ethical values.	0.800	0.000
02	Evaluating IT governance helps board members clarify their independence from management and oversee internal control development and performance.	0.320	0.039
03	Evaluating IT governance assists the bank in achieving its objectives.	0.550	0.001
04	Evaluating IT governance helps the bank attract, develop, and retain skilled employees in line with achieving objectives.	0.660	0.000
05	Evaluating IT governance helps the bank define responsibilities in internal control.	0.490	0.001
06	Evaluating IT governance helps the bank establish clear objectives for identifying and assessing risks associated with those objectives.	0.480	0.002
07	Evaluating IT governance aids the bank in managing risks.	0.420	0.005
08	Evaluating IT governance helps the bank choose and develop control activities that mitigate risks.	0.440	0.004
09	Evaluating IT governance assists the bank in selecting and developing IT control	0.310	0.041

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	activities.		
10	Evaluating IT governance helps the bank obtain and deliver relevant, high-quality information to internal and external parties for internal control.	0.600	0.000
11	Evaluating IT governance enables the bank detect and report internal control deficiencies for timely corrective action.	0.380	0.008

Source: created by the researcher based on SPSS results.

Analysis: Table (5) shows Pearson correlation coefficients between 0.310 and 0.800, all significant at $\alpha \leq 0.05$, indicating strong alignment and high internal consistency of the measurement tool.

- Questionnaire Reliability :

Reliability gauges a questionnaire's consistency over repeated uses.

Table (6): Cronbach's Alpha for the Scale

Num ber	Dimension	Number of Items	Cronbac h's Alpha
01	Evaluation of IT Governance through Internal Audit in the Bank	12	0.718
02	Improving Internal Control Processes	11	0.644

Source: created by the researcher based on SPSS results.

The revised Cronbach's alpha values (0.718 and 0.644) confirm the questionnaire's strong internal consistency and reliability, ensuring its Validity as an analytical tool for data.

- Test of Normality :

Table (7): Test for Normal Distribution"

Number	Dimension	Z- Score	P- Value
01	Evaluation of IT Governance through Internal Audit in the Bank	1.937	0.048
02	Improving Internal Control Processes	2.149	0.033

Source: created by the researcher based on SPSS results.

The Kolmogorov-Smirnov test showed p-values below 0.05, indicating non-normal data distribution, so non-parametric tests were used for analysis.

3.3 Presentation, Discussion, and Interpretation of Survey Results

3.3.1 Presentation, Discussion, and Interpretation of Results for the First Dimension:

Table (8): Means and Standard Deviations for the Dimension of Evaluating IT Governance in Banks

Statement Number	Statement	Mean	Standard Deviation	Rank
01	The bank has a guideline for information systems that considers its strategies.	4.08	0.446	3
02	The bank has a unit for designing and developing information systems that handles monitoring, follow-up, and arbitration.	4.25	0.488	1
03	The bank has physical, software, and human resources for information systems.	3.65	0.570	10
04	All resources needed to achieve the bank's expected work program results are documented.	3.85	0.340	6
05	The internal auditor assesses the different types of risks the bank encounters, including both technological and human factors	4.05	0.258	4
06	The internal auditor manages IT risks objectively.	3.55	0.590	11
07	The bank's management develops a reference plan for managing IT risks.	3.80	0.530	9
08	The internal auditor alerts the bank's management to the identified risks, allowing them to make well-informed decisions..	4.00	0.620	5
09	The bank's management uses performance indicators.	4.20	0.570	2

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10	The bank ensures informed and committed leadership.	3.85	0.510	7
11	Communications are based on plans for reporting in case of crises and evaluating crisis-related publications and reports.	3.90	0.860	8
12	The internal auditor evaluates information systems using best practices in value governance and investment and portfolio management.	3.50	0.760	12
Overall Evaluation of IT Governance in Banks		3.91	0.160	

Reference: Developed by the researcher based on the findings from SPSS. The table reveals that the highest average score is (4.25) is for having a unit dedicated to information systems development, indicating strong performance. The lowest mean score (3.50) concerns the use of best practices by internal auditors, highlighting areas for improvement. Overall, the mean score of 3.8926 reflects a generally positive view of IT governance in banks.

3.3.2 Presentation, Discussion, and Interpretation of Results for the Second Dimension:

Table (9): Means and Standard Deviations for the Dimension of Improving Internal Control Processes

Statement Number	Statement	Mean	Standard Deviation	Rank
01	Evaluating IT governance helps the bank clarify its commitment to integrity and ethical values.	3.42	0.658	11
02	IT governance ensures board members stay independent and oversee internal controls.	3.65	0.760	10
03	Evaluating IT governance helps the bank achieve its objectives.	4.18	0.663	2

04	Evaluating IT governance helps the bank attract, develop, and retain skilled employees in alignment with achieving goals.	3.87	0.606	7
05	Evaluating IT governance helps the bank define responsibilities in internal control.	4.14	0.598	3
06	Evaluating IT governance aids the bank in setting clear objectives and identifying and assessing associated risks.	3.80	0.742	9
07	Evaluating IT governance helps the bank manage risks.	3.85	0.545	8
08	Evaluating IT governance helps the bank select and develop control activities that mitigate risks.	4.05	0.644	6
09	Evaluating IT governance helps the bank select and develop IT control activities.	4.10	0.538	4
10	Evaluating IT governance ensures the bank obtains and shares high-quality information for effective internal control.	4.08	0.790	5
11	Evaluating IT governance helps the bank identify and report weaknesses in internal control in a timely manner for corrective action.	4.20	0.640	1
Overall Improvement in Internal Control Processes		3.94	0.160	

Source: created by the researcher based on SPSS results.

Discussion and Interpretation: The dimension assesses how evaluating IT governance through internal auditing improves internal control processes. Table 9 shows high mean values (3.42 to 4.20) for most statements, indicating a positive impact. The standard deviations, ranging from 0.53 to 0.79, suggest some variability, with the highest in statement 10. The overall mean of 3.94 and a low standard deviation of 0.16 reflect a significant and consistent positive effect on internal control processes.

3.4 Presentation and Analysis of Results from Hypothesis Testing

3.4.1 The initial research hypothesis:

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- **H0:** The assessment of IT governance through internal audit negatively affects its application in banks.
- **H1:** The evaluation of IT governance through internal audit positively affects its application in banks.

Table (10): "T" Test for a Single Sample to Determine the Impact of IT Governance Evaluation in the Banks Under Study

Dimen sion	Numbe r of Particip ants	Hypoth etical Mean	Act ual Me an	Stand ard Devia tion	T- Val ue	Degr ees of Freed om (df)	Statistic al Signific ance (P)	Decis ion
IT Governance	45	36	46.25	2.05	36.29	44	0.000	Significant at 0.05

Source: created by the researcher based on (SPSS) results

Analysis and Discussion: Table (10) shows a T-value of 36.29 with a significance level of 0.000, indicating a significant difference between the actual mean (46.25) and the hypothetical mean (36). This suggests that evaluating IT governance through internal auditing positively this influences its implementation in banks. As a result, the alternative hypothesis is supported, and the null hypothesis is dismissed, validating the effectiveness of this assessment in improving internal control and overall bank performance.

3.4.2 Second Research Hypothesis:

- **H0:** The assessment of IT governance has a detrimental impact on the enhancement of internal control processes in banks..
- **H1:** Evaluating IT governance has a positive impact on improving internal control processes in banks.

Table (11): Impact of IT Governance Evaluation on Improving Internal Control Processes

Correlation Coefficient	0.398
Coefficient of Determination (R ²)	0.158
Adjusted Coefficient of Determination	0.138

• **Analysis of Variance (ANOVA)**

Model	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance
Regression	0.5530	1	0.5530	8.092	0.007b
Residual	2.978	43	0.0692		
Total	3.531	44			

• **Regression Coefficients**

Model	Coefficients	Standard Error	Standardized Coefficients	t-Value	Significance
Constant	2.688	0.4850		5.546	0.0000
ITGovernance Evaluation	0.368	0.1290	0.3980	2.855	0.0075

Simple Linear Regression Equation: $y = 0.368 + 2.688x$

Source: created by the researcher based on (SPSS) results

Analysis and Discussion: Table (11) shows that 15.8% of the variation in internal control improvement is explained by IT governance evaluation.

The constant term is 2.688, and the IT governance evaluation coefficient is 0.368, with a significance level of 0.008 (less than $\alpha = 0.05$) and a t-value of 5.546 (exceeding the critical value of 2.855). This indicates IT governance evaluation significantly improves internal control processes, supporting the alternative hypothesis.

4. CONCLUSION

Following a comprehensive review of both theoretical and practical components of our study, we will summarize the key findings from the theoretical framework and practical application, including the outcomes of hypothesis testing. Additionally, we will offer

recommendations for enhancing IT governance and internal auditing practices in Algeria banks.

4.1 Theoretical Study Results

- The internal auditing function has evolved in response to advances in corporate governance concepts and the growing role of information technology.
- IT governance has evolved from merely supporting functions in organizations to actively contributing to value creation.
- Information technology is no longer limited to a support function but now includes risk management and value creation.
- Implementing and establishing IT governance within an organization is achieved through an objective evaluation by internal auditing to improve control processes and support organizational goals and strategies.
- Creating a framework to govern information technology ensures its alignment with the bank's strategic goals and internal control objectives.
- IT governance is an essential element of corporate governance.
- The connection between IT governance and the internal control system is highlighted through their role in corporate governance, especially through the internal auditing role in engaging with governance stakeholders.

4.2 Field Study Results

Based on the results obtained from the SPSS software and the statistical methods used", the following conclusions were drawn:

- The first hypothesis has been confirmed, indicating that evaluating IT governance through internal auditing has a positive impact on its effective implementation in banks.
- The second hypothesis has been confirmed, showing that evaluating IT governance through internal auditing has a positive impact on improving internal control processes in banks.

4.3 Recommendations and Suggestions

- Encourage innovation and development in the field of information technology by conducting periodic training sessions to keep up with advancements in this area.

- Promote and raise awareness among all stakeholders in banks about the importance of governance as a framework that protects the interests of all parties involved.
- Keep up with the latest developments, concepts, and frameworks in IT governance and work on meeting their requirements in banks to enhance their value and maximize the benefits from investments in information technology.

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