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The impact of information technology on the internal audit environment in Jordanian commercial banks

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Abstract

The study aimed to determine the impact of information technology on the internal audit environment through the variable of big data and the variable of computer networks. The study relied on designing a questionnaire to obtain the primary data, and the study population consisted of internal auditors in Jordanian commercial banks. Statistical methods such as mean, standard deviation, Cronbach's alpha test, and one-sample t-test were used. Among the most important results of the study: There is an effect of computer networks on the nature of the tasks and functions of internal audit, with an impact of the use of big data on the work of internal audit. Among the most important recommendations of the study: the necessity of holding scientific conferences specialized in the subject of big data, and these conferences focus on identifying opportunities and challenges of using big data in internal auditing. And the necessity of the internal auditor’s participation in multiple committees in the computerized programs in commercial banks so that he can conduct the audit process in a correct degree

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1. **Introduction**

The Internal Audit Department realizes that its most important needs are the human cadre who possesses the reins of scientific knowledge of the rules and provisions of auditing and the elements of personal competence entrusted to the auditing body. It extends to understanding the components of financial programs and the use of information networks. (Abiola,2014)

All information needs tools in order to transfer it between employees or those who are authorized to receive and deliver that information, and information technology requires the delivery of that information to the relevant people in a timely manner so as not to lose its validity, so the best way to transfer that information is through computer networks, provided that verification of its reliability and relevance to information and information security. (Al-Duwaila, 2017)

Information technology has created large activities and operations, which has increased the importance of internal auditing, and the increase in business and deals has led to the existence of risks represented in the inability of the internal auditor to audit all operations, and this in turn requires increased training of employees in general and those working in internal control in particular (Effiok, 2017)،

Therefore, this study came to study the impact of the use of information technology tools on the work of internal auditing in Jordanian commercial banks, as the commercial banking sector in Jordan represents the most sectors using information technology tools, and it may have created new tasks for internal auditors, and this means the necessity of training and qualifying internal auditors to keep pace with requirements of modern technology.

1.1the study Problem. The profession of internal auditing, like other important professions, started using technology when it began to appear, so I employed it in the accounting system in a way that made the implementation of the accounting cycle a mechanism of speed and accuracy, but despite the advantages of this technology, there are serious negatives that accompanied it, such as the possibility of penetration or manipulation of its inputs and thus obtaining On misleading outputs, and from this point of view, it has become necessary to keep pace with the internal audit systems of this technology and the changes it has brought about on the accounting system, so that it has become a computerized system that lacks some factors of confidence and credibility. Therefore, the problem of the study is to answer the following questions

1- What is the effect of using big data on the internal audit work in Jordanian commercial banks?

2- What is the effect of using computer networks on the work of internal auditing in commercial banks?

1.2 Study hypotheses Based on the study problem, the following hypotheses can be developed

1-There is no statistical significance on the use of big data on the work of internal auditing in Jordanian commercial banks.

2-There is no statistically significant effect on the use of computer networks on the internal audit work in Jordanian commercial banks.

1.3 Importance of studying With the growing use of computers, public shareholding companies and commercial banks have worked to process data electronically, so that information technology has become part of the company's environment, and that information systems continue to affect the operations of different companies and the processing of their data imposes on internal audit keeping pace with these developments.

Information technology has cast a shadow over various aspects of theoretical and practical life, in terms of storing large data, and this has increased the importance of internal auditors to carry out their work of analyzing that data; To develop a neutral technical opinion for it that is commensurate with the nature of the work volume in the company in general. And big data results from information that can be important in making decisions and preparing plans, and increases reliability in the audit process and is affected by audit risks. Do it better and identify the risks and issues involved.

1.4 Objectives of the study The study seeks to achieve the following objectives

1- Identifying the most important new developments in the internal audit work environment in commercial banks
2- Identifying the impact of using big data and computer networks on the internal audit work environment.
3- Identifying the new tasks and functions that the internal auditor must know in order to be able to keep pace with the use of information technology tools.

1.5 Terminology of study Internal audit: It is "an independent and objective confirmatory and advisory activity designed to enrich and develop the management's operations by helping it achieve its objectives in a systematic and organized manner to evaluate and develop the effectiveness of its risk management, controls and institutional procedures." (Shrouda, 2015(

Information technology: a set of tools, methodologies, processes and equipment that are used to collect, process and store information. Examples of these tools are: coding, programming, storage, retrieval, analysis, systems control, and data transformation. Information technology also includes: office automation, communications, and media. Multiple. (Henderson, 2014)

Computer networks: It is a system for linking two or more devices using one of the communication systems technologies in order to exchange information, resources and data between them that are available for the network, such as a printer or application programs of any kind, as well as allowing direct communication between users. (Alsharairi, 2017)

Big data: data that is difficult for normal storage and retrieval tools to deal with; Due to its largeness, the multiplicity of its sources and its differing opinions, and it needs large databases to deal with it in terms of sorting the data, identifying the useful ones, and converting it into useful data for decision-making. (Aldweileh, 2021)

1.6 Previous studies Al-Masrawy study (2019) “The role of the internal auditor in the era of big data.”

The study aimed to introduce big data and its development and analysis factors. It also aimed to show the role of the internal auditor in auditing the combined data at the stage of knowing the data sources and their transformation into big data. The study relied on books and references with a proposal for the role of the internal auditor in dealing with big data through three stages: the stage of emergence of big data, the stage of big data, the stage of auditing big data and how it affects the credibility of financial statements. Among the most important results of the study: that there are new roles for internal auditors represented in acquiring new skills in dealing with social communication tools and jobs related to the reliability of computer networks and the presence of special skills in dealing with information technology tools, and one of its results is that the internal audit process requires all the data received by the company in exchange for regardless of its source. Among its most important results: the necessity of providing internal auditors with special skills in dealing with big data, and one of its most important recommendations is the necessity of employing big data to achieve the objectives of the facility and linking strategies to the presence of big data.

Abed Farqad's study (2017) entitled: "The Role of the External Auditor in Reducing Audit Risks in Jordanian Commercial Banks."

The study aimed to clarify the role of the external auditor in reducing audit risks in Jordanian commercial banks, through: Assessing the role of the external auditor in reducing discovery risks, inherent risks, and control risks such as audit risks in Jordanian commercial banks. The descriptive survey method was used, being The appropriate approach for the purposes of this study is to analyze the data of the study. A simple random sample of external auditors in commercial banks and audit offices was selected. The study reached results, including the study showed the role of the external auditor in reducing the risks of discovery and control risks as one of the audit risks in Jordanian commercial banks. And there are differences in the role of the external auditor in reducing audit risks (total degree, the role of the external auditor in reducing discovery risks as one of the audit risks in Jordanian commercial banks). Among its most important recommendations: The necessity of linking operational risks with audit risks and big data risks

Bendine study (2018) “The impact of the use of technology on internal auditing in Algeria”

The study aimed to show the importance of using modern technology on the efficiency of the internal auditor in the economic sectors in Algeria. The study population consisted of internal auditors in the economic sector in Algeria. The use of the questionnaire was used to obtain data and information for the study. Among the most important results, there is an effect of a medium degree to the use of computerized information transfer tools between employees. Among its most important recommendations: the need to develop the use of information technology tools to benefit from them in raising the efficiency of internal auditing.

Nackaee Study, 2018 "The Impact of Information Technology on Increasing the Efficiency of Internal Audit"

The study aimed to find the effect of using information technology tools on increasing the effectiveness of internal auditing in the industrial sector in Iran. The questionnaire was used as a tool to obtain primary information. The study sample consisted of 120 employees in the internal control department. Statistical analysis tools were used to analyze the resolution. Among the most important results of the study: There is an effect of using information technology tools on the efficiency of internal auditing. Among its most important recommendations: The necessity of having special standards regulating the work of internal auditing in the information technology environment

1.6.1 The current study differs from previous studies

-This study applies to the commercial banking sector in Jordan, which is considered one of the sectors that most apply information technology tools.

It is based on focusing on the impact of variables not mentioned in previous studies, such as big data, computer networks, and the use of electronic evidence.

2.Theoretical framework for the study

٢,١Introduction Because of the increase in the use of modern technology in banks or the banking sector in general, especially in recent years, which aims primarily to increase efficiency, reduce uncertainty and achieve efficiency in completing operations and achieving corporate goals in general, information technology reduces the red tape in the company and achieves Services to customers easily and conveniently. Information technology has also restructured the methods of data processing and extracting reports, and in return there are risks facing organizations that adopt information technology, so it must be monitored well to identify the characteristics of control that must be applied to them.

2.2Information Technology It is based on the use of computers and other advanced means to process the data that is obtained and to achieve speed in its processing, storage, retrieval and transformation into reliable and reliable information in making decisions in a timely manner. (Akinley, 2019)

2.3IT Audit It is based on the use of computer equipment and networks in order to provide the information required for auditing and use it as a tool, and helps in understanding the purpose of working with automated accounting systems, in addition to understanding the environment in which modern technology operates, and the need to keep pace with recent discoveries of the ability to deal with it. It is also based on the use of modern technologies in the field of auditing with the aim of using them as an audit tool, as well as with the aim of assisting the management of the facility in understanding the environment in which the company operates in order to assess the risks and opportunities of these modern technologies and their impact on achieving the objectives of the company and providing the information necessary to make decisions in a timely manner. (Alrefae, 2013)

2.4The impact of the use of computer networks on the internal audit environment Computer networks play a key role in distributing information and achieving office functions without making a great effort to organize. The great development in the world of communications and the accompanying development in the world of computers and their technologies has theoretically created the possibility of obtaining infinite power from the computer, starting from data entry to obtaining outputs. Through computer processing operations. (Zaqout, 2016(

It is important for the internal control system in companies to audit the reliability of computer networks, as the audit of computer network technology is constantly changing, either to the desire of management, or according to work requirements, or as changes to information technology or the circumstances surrounding the company, which means that IT auditors must be proficient in network auditing. The computer by directing some questions to the technical specialists in the company, in addition to the presence of some basic concepts of computer networks, which helps computer technology auditors to keep abreast of changes and help the administration to ensure the reliability of those networks. (Ahmed, 2011)

Therefore, the success of the audit of computer networks depends on the level of technical knowledge possessed by the IT auditor, and that acquiring that knowledge is not an easy thing, especially if the training budget is limited, and without detailed knowledge of computer networks and their components, it is difficult for the auditor to carry out the audit process in terms of maintenance and treatment. The data and information owned by the networks and how they are communicated to their beneficiaries.

The role of the internal auditor about the components of computer networks is as follows: (Olofemi, 2019

- Determining the main components in computer networks and ensuring the presence of these components in the company's warehouses.
- Confirming the actual existence of the components and making sure that access to these components is only for the employees authorized to access those components.
- Determine whether these components comply with published standards for networks, evaluate the process of developing those networks, and ensure that there is strong oversight over them.
- Knowing where the maintenance process takes place inside or outside the company؟

The review of the above matters by the IT auditor gives an indication that the basic components of computer networks are protected against emergency and intentional threats, and that the networks are able to adapt to the emergency conditions surrounding the company

٢,٥The role of big data on internal audit Big data is defined as the huge amount of structured data and unstructured data that is produced within the company and is modified daily, and what is important in the topic of big data is how to use all of the data to achieve full benefit to achieve the company’s goals (Daladine, 2019.)

2.5.1The importance of big data on auditing financial reports

The presence of big data has a pivotal role that led to the following (Al-Masrawy, 2019)

-It led to an increase in the quality of the financial statements through the presence of many data that contributed to the degree of credibility of the financial statements

-Big data has contributed to increasing the degree of accounting disclosure in the financial statements to a degree that helps stakeholders take appropriate decisions

-Contributed to supporting the accounting methods and policies used in preparing the financial statements

-Contributed to increasing the degree of integration in administrative brainstorming with huge databases

-Big data contributed to obtaining degrees of integration in accounting information in terms of its reliability and source

2.5.2Areas of use of big data by the internal auditor The use of big data by the external auditor achieves the following (Cao, 2015(

1- Transition to the era of accounting data analysis, risk management and electronic report writing using information technology tools
2- Get more training opportunities for accountants on how to deal with big data and achieve auditing and accounting objectives
3- Specializing in cloud accounting, which depends on the era of informatics and big data

2.5.3The impact of big data on the internal audit process The presence of big data contributed to the audit process with the following (Sarense, 2017, 32(

-Helping accountants obtain a greater amount of information, which helped accountants obtain a comprehensive view of the financial statements

Through big data analysis and control testing, auditors can track the documentation processes of documents, record pending transactions, and verify them through the presence of big data.

The possibility of using information technology tools to determine the size of audit samples and expand audit tests, and this helped increase the credibility of the audit report

Increasing information for auditors, increasing their skills and acquiring skills in knowing the quality of data useful for the audit process

3. Statistical analysis of the study

٣،١Introduction This chapter included a detailed description of the methodology used in this study, the study population and its sample, the study tool that was used and how it was developed, the procedures used to verify the validity and reliability of the study tool, and the statistical procedures and methods that were used to analyze the data in order to reach the results of this study.

This chapter also included identifying the study sample members, how to choose them, and the tools used to collect data from the study sample members, and then presenting the procedures for applying the study tool in the field side, including statistical treatment, according to the following:

3.2 The methodology used The study relied on the descriptive-analytical approach, which is defined as a method of research that deals with existing and available events, phenomena and practices for study, and measuring them as they are without the researcher's intervention in its course. Information on the internal audit work environment, as the data was studied and analyzed by transforming qualitative variables into measurable quantitative variables, with the aim of dealing with them in testing hypotheses and stating the results and recommendations of the study.

3.3 study community The population of this study consisted of the internal auditors in the 13 Jordanian commercial banks, where the number of auditors in the commercial banks reached 165 internal auditors, where 115 questionnaires were distributed to the auditors in those banks, where 92 questionnaires were retrieved from them, and 8 questionnaires were canceled due to their inability to work. So that the number of questionnaires that were statistically analyzed became 84. The response rate (92/115) was 80%.

3.4study sample The study sample consisted of (84) questionnaires distributed to internal auditors in Jordanian commercial banks, bearing in mind that the type of sample used is the target sample for internal auditors in commercial banks.

Table (1) Distribution of study sample members according to demographical data

Variable	Title	Frequencies	Percentages
Years of Experience	Less than 5 years	٣٥	٤٢
	5-less than 10 years	٢٤	٢٨
	10 years and more	١٥	٣٠
	Total	٨٤	١٠٠

Educational level	Bachelor	٥٥	٦٤
	Master	٢٠	٢٤
	Ph.D.	٩	١٢
	Total	٨٤	١٠٠

Notes from the previous table

1- The years of experience for the majority of the study sample of those with less than five years of experience (42%), followed by a category greater than 10 years (30%). This means that there is an appropriate experience to a moderate degree for the study sample

2- The majority of the study sample, according to the educational qualification variable, is from a bachelor’s degree by 64%, and this may be normal because commercial banks do not appoint an internal auditor less than a bachelor’s degree in general.

3.5 Data collection sources The researcher relied on two types of information sources: secondary sources and primary sources, which are:

secondary sources They are the sources of available data and information collected for other purposes from library sources and literature references such as previous studies. These data have contributed to enriching the theoretical aspect of this study. These data are as follows:

- Master's theses and doctoral theses that discuss the topic of study.
- References and books that are related to the topic of research related to internal auditing and information technology

- Information available on various websites that dealt with the subject of the study.

Primary sources The primary sources are all the data that the researcher relied on through the design of the questionnaire to serve this study, as it covered all aspects on which the hypotheses were built, and were addressed in the theoretical framework, and the questionnaire was distributed to the study sample by the researcher.

٣،٦ study tool In order to obtain the necessary data to reach the required results from the study, the researcher designed the study questionnaire (because it is an appropriate tool for measuring the required effect from the researcher’s point of view), after referring to a number of Arab and foreign studies related to the subject of the current study, where this questionnaire was formed It consisted of two parts: the first part included personal and functional variables, and the second part included the dimensions and paragraphs of the subject of the study, and it was as follows:

The first section (general information): This section aims to collect data on the personal and demographic variables of the respondents, including: educational level, and years of experience.

The second part (dimensions and paragraphs of the field of study and its variables): This part included the study questions that aim to study the impact of information technology on the work of the internal audit.

4.statistical analysis

Introduction After completing the theoretical framework of the research, the study's questionnaire was analyzed using the statistical analysis program SPSS, where the Cronbach alpha test was used to find the credibility and stability of the study tool.

4.1 Testing the validity and reliability of the study Cronbach's alpha test was used for the study tool (a measure to determine the degree of internal consistency of the answers of the study sample about the paragraphs of the questionnaire), and the value of the Cronbach alpha test was 82% for resolution in general, and this means that it is a good percentage for generalizing the results and recommendations of the study, and this percentage is higher than the minimum acceptable Which is 70%. The value of Cronbach's alpha for the computer networks variable was 87%, and the big data variable was 81%. And all of those percentages are higher than the minimum acceptable statistically, which is 70%, and this means that there is credibility and stability of the study tool.

4.2 decision-making base The five-factor Likert system was used to design the questionnaire, which consisted of five options for each paragraph of the questionnaire. For the purposes of statistical analysis, the options coding system was used so that the following symbols were given:

A very high score was given with the symbol 5

A high score was given with the symbol 4

An average score was given with the symbol 3.

A low score was given with the symbol 2.

A very low score was given with the code 1

Therefore, the hypothetical average for accepting or rejecting the paragraph or hypothesis will be with the hypothetical mean of 3 and it was obtained by using the summation of the symbols and dividing them by the number of options, i.e. (5 + 4 + 3 + 2 + 1)/5 is equal to 3. Therefore, if the mean of the paragraph or hypothesis is greater than Or equal to the number 3, it means acceptance of the paragraph or hypothesis, and the higher that mean, the greater the degree of acceptance and confirmation from the members of the study sample with the presence of that variable, and on the other hand, whenever the middle of the paragraph or hypothesis is less than the number 3, it means that the members of the study sample tend to lack the paragraph in reality. The practical and the greater the difference from the hypothetical mean, the greater the confirmation of the study sample members that there is no effect of that variable in the bank in which the study sample members.

4.3 Discussing the statistical results with the study variables

Table (2) The opinions of the study sample with the big data variable

No	Paragraph	Average	Standard deviation	Rank	Level
1	**Big data is based on increasing the role of the internal auditor in the degree of quality in the financial statements through the presence of many data that contributed to the degree of credibility of the financial statements**	٣,٩١	٠,٧٧	٢	**High**
2	**Big data helps increase the role of the internal auditor in increasing the degree of accounting disclosure in the financial statements**	٣,٨٩	٠,٨٠	٣	**High**
3	**Big data contribute to activating the work of the internal auditor in obtaining degrees**	٣,٨٥	٠,٧٩	٥	**High**

	of integration in accounting information in terms of its reliability and source				
4	**Information technology tools affect access to more training opportunities for internal auditors on how to deal with big data and achieve internal audit objectives**	٣,٩٥	٠,٨٨	١	**High**
5	**Big data helps internal auditors to get a greater amount of information to get a comprehensive view of the financial statements**	٣,٨٦	٠,٨٥	٤	**High**
6	**Big data helps auditors increase information, increase their skills, and acquire skills in knowing what kind of data is useful for the audit process**	٣,٨٢	٠,٨٩	٦	**High**
7	**Big data helps to find new internal audit tasks related to determining the quality of big data and determining its suitability for decision-making**	٣,٧٨	٠,٨٥	٧	**High**
Total average		**3.87**	٠,٨٣		

It is noted from the previous table that all the paragraphs have a high level of answers, and this indicates that the answers of the study sample confirm the agreeing and strongly agreeing paragraphs. It is also noted that the fourth paragraph represents the highest average of 3.95, which is represented by the impact of information technology tools in obtaining more training opportunities for internal auditors on how to deal with big data and achieve internal audit goals, and this means that there are training courses of a new type for internal auditors represented in how to deal with big data And how to determine the source of that data and determine its impact on the validity of the data or the financial statements. It is also noted that the first paragraph represents the second degree of acceptance with an average of 3.91 represented by the impact of big data on increasing the role of the internal auditor in the degree of quality in the financial statements through the presence of many data that contributed to the degree of credibility of the lists Financial, and this means that big data has a positive impact on the degree of credibility of the financial statements and also gives an indication of the honest representation of the financial statements about the nature of the financial events that took place in commercial banks. It is also noted that the second paragraph represents the third degree of acceptance represented by the help of big data to increase the role of the internal auditor in increasing the degree of accounting disclosure in the financial statements, and this means that the use of big data has a positive role in auditing accounting disclosure in the financial statements and determining the degree of its positive impact on decision-making in Jordanian commercial banks. It is also noted that the rest of the paragraphs have an impact on the nature of the functions and functions of internal auditing in commercial banks. It is also noted that the standard deviation of all items is less than 1, and this indicates that there is no dispersion in the answers of the study sample members to the items of this variable. It is also noted that the average hypothesis is 3.87, which is a high degree, and this indicates the existence of an impact of big data on the internal audit work environment in Jordanian commercial banks.

Table (3) The opinions of the study sample on the variable of computer networks

No	Paragraph	Average	Standard deviation	Rank	Level

1	**Computer networks help internal auditors understand the nature of computerized accounting information**	٣,٦٤	٠,٧٨	٣	**Medium**
2	**Computer networks help internal auditors quickly assess risks related to the audit of financial statements**	٣,٦٩	٠,٧٤	١	**High**
3	**Computer networks help internal auditors to easily distribute tasks and duties related to the accounting system and quickly deliver information in a timely manner**	٣,٦٤	٠,٧٤	٢	**Medium**
4	**Computer networks have created new functions for internal auditors, which is how to ensure the reliability of computer networks and the reliability of financial statements**	٣,٦٤	٠,٨١	٤	**Medium**
5	**internal auditor helps identify the major components in computer networks and ensure that these components are present in the bank**	٣,٥٥	٠,٧٤	٦	**Medium**
6	**Computer networks have helped reduce financial data breaches in commercial banks**	٣,٥٧	٠,٦٥	٥	**Medium**
	Total average	**3.62**	**0.72**		

It is noted from the previous table that the answers of the study sample are within the average level in most of them, and it is also noted that the second paragraph represents the highest degree of confirmation with an average of 3.69, represented by the help of computer networks for internal auditors to quickly assess the risks related to the audit of financial statements, and this means that the internal auditor is based on identifying the priorities of risks Auditing the financial statements in commercial banks and this has a positive impact on the process of planning risks and how to deal with them. It also notes that the third paragraph represents the second rank with an average of 3.64, represented by the help of computer networks for internal auditors to facilitate the distribution of tasks and duties related to the accounting system and the speed of delivery of information in a timely manner. The computer reduces the conflict in the distribution of tasks between internal auditors, and this has a positive effect on reducing the efforts and time of the internal audit process. It is also noted that the average variable of computer networks is 3.62, and this indicates that computer networks have an impact on the internal audit work environment in commercial banks.

4.4 Hypothesis Test The first hypothesis: "There is no statistical significance on the use of big data on the work of internal auditing in Jordanian commercial banks".

The One Way T-Test was used for the first hypothesis and the test results were according to the following table:

Table No. (4) Results of the first hypothesis test

Calculated T	Schedule T	Significant	The result of the null hypothesis H0	Average
12.27	1.977	0	Rejected	3.87

It is noted from Table No. (4) that the decision rule is to accept the null hypothesis (H0) if the calculated value is less than the tabular value, and reject the null hypothesis (H0) if the calculated value is greater than the tabular value. Thus, we reject the null hypothesis and accept the alternative hypothesis, which states that "there is statistical significance on the use of big data on the work of internal auditing in Jordanian commercial banks".

The results of the second hypothesis test of the study

Second hypothesis "there is no statistically significant effect on the use of computer networks on the work of internal auditing in Jordanian commercial banks".

The One Way Sample T-Test was used for the second hypothesis and the test results were according to the following table:

Table No. (5) Results of the second hypothesis test

Calculated T	Schedule T	Significant	The result of the null hypothesis H0	Average
9.53	1.977	0	Rejected	3.62

It is noted from Table No. (5), based on the rule written in the first hypothesis. Thus, we reject the null hypothesis and accept the alternative hypothesis that there is a statistically significant effect on the use of computer networks on the work of internal auditing in Jordanian commercial banks.

4.5 Study results and recommendations

4.5.1 The study reached the following results

1- The presence of big data has an impact on the work of internal auditors in Jordanian commercial banks through

- There are specialized training courses for internal auditors on how to deal with big data and determine its source and importance

-There is a greater disclosure process in the quality of the financial statements, and it has a positive role in applying the principle of comprehensive disclosure, including the community's opinion on those statements.

-The existence of a social role for big data on auditing financial statements by reviewing big data from various social media, and this means the existence of a new work represented in taking community observations honestly and fairness of financial statements

-The internal auditor has become one of his tasks to know the quality of big data, determine its risks, and determine the reliability of its sources, which helps to have a participatory view in auditing and preparing financial statements.

2- There is an impact of computer networks on the internal audit environment in Jordanian commercial banks through

The internal auditor verifies the reliability of computer networks and the correctness of the accounting information that is stored in computer devices and networks.

- The internal auditor has a role in determining the physical components in computer networks, and this has increased the internal audit tasks represented in technical knowledge of those components and ensuring their validity and presence in the market.

4.5.2 Study recommendations Based on the results of the study, the researcher recommends the following: The need to pay attention to the information on social media tools, to verify the source of that information, and to determine the impact of that data on the financial statements and their quality

- The necessity of holding scientific conferences specialized in the subject of big data, and these conferences focus on identifying the opportunities and challenges of using big data in internal auditing.

- The necessity of the participation of the internal auditor in multiple committees in the computerized programs in commercial banks so that he can conduct the audit process in a correct degree
- The necessity of having a technical knowledge of computer networks and their components among internal auditors during the recruitment process in commercial banks

- Conducting similar studies on internal auditors and financial managers to find the degree of integration and comprehensive vision about the impact of computer networks and big data on commercial banks and determine how to deal with them from all parties

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