

The Effect of using Information Technology on Increasing the Efficiency of Internal Auditing Systems in Islamic Banks Operating in Jordan

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Abstract

This study aims to know the extent to how compatible are the opinions of workers in control and internal auditing departments with how the technical and technological environment of information systems on the dangers of operational control, the availability of technical and technological environmental properties of appropriate and sound information systems, the effect of using information technology on the independency and privacy of internal auditing in Islamic banks operating in Jordan in the shadow of globalization, and finally how committed are they with the technological needs for controlling electronic banking activities. The importance of the study stems from the importance of internal auditing in Islamic banks, and of the significance of using information technology in raising the efficiency of internal auditing in Islamic banks operating in Jordan, as it is considered evidence on the speed and accuracy of management completing their reports and displaying them better with more clarity than what was produced by the manual system, that's on one hand, however on the other hand, considering the active role that information technology plays in increasing the efficiency of internal auditing in making sure that tasks are carried out according to plan and that goals have been achieved. The study has found numerous results that show a positive impact of using information technology on the independency and privacy of internal auditing in Islamic banks operating in Jordan in the shadow of globalization, and that it is committed to using the technological needs for controlling its electronic banking activities.

Key words: internal auditing, information technology, Islamic banks operating in Jordan, internal auditing systems.

1- Introduction:

Using information technology in various aspects of life played a role in benefiting various elements on various levels and various areas, as the use of information technology in the field of internal auditing means applying electronic means for the purpose of internal control (Tiittanen, 2001). In the mean time the process of internal control responses witnessed increased to maintain the pace with developments in information technology at those facilities, as a result what's called computerized auditing has emerged (Thneebat, 2003). The wide spread of information technology to serve different fields especially the banking field and that includes Islamic banks operating in Jordan, requires providing vital elements that would help in a wider spread. Financial investment is one of the elements necessary for using information technology, that as well as human rehabilitation and providing a level of knowledge that leads to acceptance of information systems so this technology can be used. (Kadash and Siyam, 2003)

1-1-Significance of the study:

The importance of this study stems from the importance of internal auditing in Islamic banks, and the importance of using information technology in raising the efficiency of internal auditing systems in Islamic banks operating in Jordan, as it is considered evidence on the speed and accuracy of management completing their reports and displaying them better with more clarity than what was produced by the manual system, that's on one hand, however on the other hand, considering the active role that information technology plays in increasing the efficiency of internal auditing in making sure that tasks are carried out according to plan and that goals have been achieved.

1-2-Theoretical background:

The use of information technology within the banking field outlined a number of dangers, especially the dangers regarding safety, protecting banking data, and blocking unauthorized access to physical and logical system components, which requires analyzing and evaluating the risks surrounding the banking field in the process of constructing and developing information systems, and regulatory regimes to prevent errors and irregularities that may result from the risk of control.

The background theory can be formulated based on the following questions:

1- What do workers in control and internal auditing departments think about the impact of the characteristics of

technological environment for information systems on the operational control risks in Islamic banks operating in Jordan?

- 2- What do workers in control and internal inspection departments think about the availability of sound and appropriate characteristics of technological environment for information systems in Islamic banks operating in Jordan?
- 3- Is there an effect for using information technology on the independency and privacy of internal auditing in Islamic banks operating in Jordan in the shadow of globalization?
- 4- Do Islamic banks operating in Jordan have a commitment to the technological needs for controlling their electronic banking activities

1-3-Objectives of the study:

This study seeks to achieve several objectives, and they are as follows:

- 1- Determining what do workers in internal auditing departments think about the impact of the characteristics of technological environment for information systems on the operational control risks in Islamic banks operating in Jordan
- 2- Determining what do workers in internal auditing departments think about the availability of sound and appropriate characteristics of technological environment for information systems in Islamic banks operating in Jordan
- 3- Determining if there is an effect for using information technology on the independency and privacy of internal auditing in Islamic banks operating in Jordan in the shadow of globalization
- 4- Determining if Islamic banks operating in Jordan have a commitment to the technological needs for controlling their electronic banking activities

2- Previous studies:

The Shanti study (2013) aimed to show the importance of accounting information systems in the aid of finding the optimal use of human, technological and financial resources; it also showed the importance of using accounting information systems in improving the efficiency and effectiveness of internal auditing in companies of the Jordanian industrial sector, to reach the reality of applying accounting information systems in the Jordanian industrial sector, and to raise awareness of management and internal auditors about the importance of applying accounting information systems in the Jordanian industrial sector. The study concluded that the application of accounting information systems in the Jordanian industrial sector leads to improving the effectiveness of internal auditing by increasing compliance with preset laws and policies, as well as providing necessary information in time to make decisions.

The Hussein study (2005) aimed to recognize the evolution that the field of accounting information systems is experiencing, with demonstrating its effect on internal auditing systems. The background theory was putting together a solid control system that creates a type of security, safety and maintains the safekeeping of accounting data. The study concluded that having a computerized control system results in an enhanced process of inputting, computing and outputting accounting data.

AlKhalidi's study (2003) intended to explain the impact of information technology in raising the efficiency of internal auditing systems in Palestinian banks operating in West Bank and Gaza Strip. The study concluded that interest in training in using modern technologies reduces the chances of manipulation and achieves management's goals.

Duncombe and Heeks study (1999) pointed to numerous reasons that inhibit the spread of information technology that consist of: weakness in available management skills, weakness in developmental programs, and the inability keeping skilled workers in the field of information technology. This study has concluded that one of the main problems of using information technology in companies including control centers is the quick circulation of employees in the field of information technology

The study of Manson and Others (1997) compared inspection companies in the United Kingdom with the ones in the United States in the field of using information technology in the different stages of inspection; the study has shown that information technology is used in both countries however; the level of use varies. United States companies for instance are more advanced than the United Kingdom in this field. The study has also shown that the level of information technology use varies depending on the size of the company; large companies are more advanced than small or medium-sized ones although, that doesn't mean that bigger companies are in harmony when it comes to the inspection process. In addition the study also explained that smaller and mid-sized companies are showing more interest in the field especially when it comes to hiring information technology experts, though most of information technology use is based on simple not complex tasks.

3- The methodology of the study

Researchers will rely on a descriptive analytical method in this research, where obtaining the necessary data for

this study came from the following sources:

3-1- Primary sources

Raw data needed for this research was obtained by a questionnaire that was prepared and distributed to internal auditors in a sample of public shareholding Jordanian industrial companies. The data was then collected and analyzed using a statistical software package for Social Sciences (SPSS), and that was to test the validity of the research hypothesis.

3-2- Secondary sources

Secondary sources related to this research were obtained with reference to books, theses, scientific research, reports, and magazines, in order to build a theoretical framework for this research and achieve its objectives.

4- Theoretical framework

Scandals that huge companies like Enron Corporation and World Com were exposed to in the late 90s of the twentieth century have scared investors away. Questions about how did these companies allow exposure to such scandals, where was the board of directors, the senior management executive, their oversight bodies, and their internal and external inspectors. As a result the largest operation of accounting analysis until then has occurred, followed by massive regulatory reforms. (Cattrysse,2005)

These serious developments have shown the vital role that the board of directors in strengthening the company especially that it is responsible for the internal auditing systems in their companies, while internal auditing departments and what they own technologically help these boards to carry on with their responsibility and improving their efficiency.

4-1- What is internal auditing?

Internal auditing can be defined as: an independent practice that acts as a consultant and it is designed to add value and improve an organization's operations, by helping it achieve multiple goals by using a systematic and a disciplined method, to improve the effectiveness of risk management, and control governance processes. (Gramling & Hermanson, 2006). From that definition of internal auditing, the responsibility of the Board of Directors is identified to ensure the effectiveness of the internal auditing framework in organizations which shows the primary role of internal auditing which becomes an embedded corporate governance of the organization.

The activities of the Board of Directors and senior management increase realizing the importance of auditing, taking the measures for the development of independence and tough auditors, using the findings of the auditors in an effective and timely manor. In addition to maintaining the independency of the Auditing Committee that is related to the Governing Council which should realize that internal and external auditors are important decision makers and that the internal auditor does not work in complete isolation from the administration. (Cattrysse,op cit)

For an internal auditor to be able to add value to an organization, a sound cooperation should be made between management and the auditor, and that can be demonstrated by the reality that internal auditors should take into consideration the risks of auditing or other areas that are related to management while auditing an annual plan.

The demand for this job arose because of the demand to providing an independent investigation to limit frauds and mistakes in the accounting documents of a company therefore to protect the companies. Researchers showed that the existence of it could be traced back to 6000 ago were there is an evidence of documentation around that era near the lower east. (SOCPA 2004 ·P.105)

An interest in internal auditing began increasing in Europe in the 18th century due to numerous cases of manipulation and cheating in companies

With the transition of European, American and other western countries' systems to accounting, auditing and the growth of business operations, the actual necessity of having an independent auditing department in a company. And because managements' interest in protecting the roots of a company, keeping accurate financial records, following policies, and limiting manipulation this job is looked at as an extension of external auditing.

This narrow approach to this field and auditors' sort of work led to the focus on financial aspects of a company's activities; therefore the internal auditor played a limited role in the operations of the company, as there was no need for a private practice in the shape of a department for internal auditing within the executive structure of a company.

The rapid growth of business activities and the big size of business operations in a company led management to increase their interest in auditing so an auditing job is necessary considering it an independent internal control that helps management with auditing efficiently and that's by documenting how well protocols followed and testing that operational processes are completed, as well as the efficiency and the secretariat of the staff, which makes this job vital in the financial and operational view of a company.

Due to several cases of bankruptcy in American companies in the 40s of the past century, the direction of recognizing internal auditing as a job that has components that enables it to achieve its goals, therefore the IIA

Complex was formed in the united states in 1941 to improve this field.

4-2- The nature of internal auditing

The nature of internal auditing is determined by the role it provides in supporting management, the importance of that is clear from the growing interest lately which calls for better internal auditing in management. This growing interest is because of three factors that are as follows: (Saadani, 2005)

- Increased corporate failures and bankruptcy
- A change in corporate ownership patterns.
- Changes in the regulatory environment in which companies operate in

It has been noted lately that huge companies are failing, especially in the United States of America, this drew the attention of investors, regulators, researchers and others interested in the fields of Business. A lot of studies discussed reasons for such failures, the main reason was found to be the lack of independence in boards of directors, as well as the low quality of auditing or the absence of internal auditing in these companies, on the other hand important changes in corporate ownership patterns, especially joint-stock companies due to the fact of share ownership shifting from individual investors to institutional investors like investment funds and banks, this led to putting ownership in the hands of a small number of investors who became an active influence on the corporate governance. These investors began calling for the need for change in the specifications administrative and regulatory procedures and methods used by companies in order to achieve the required protection for their interests.

4-3- Internal Auditing and Information Technology

Internal auditing under the use of information technology is looked at as a process of collecting and evaluating to determine whether the use of computers contributes to protecting the assets of a company, confirms the safety of its data, achieves their goals effectively, and uses resources efficiently, where it is clear that the process of internal auditing using of information technology does not differ in goals from manual auditing in terms of opinion, and service. Internal auditing using IT includes all components of the computer system which are hardware, software and database (Jomaa and Others, 2003). Auditors face a number of challenges with the advancing of technology which requires them to master the different aspects of this environment, some of the aspects that should be included are:

- Keeping accounting data and records in computer management.
- Difficulties in tracking operations.

4-4- The impact of using information technology on internal auditing

The effects of using information technology on the efficiency of internal auditing can be illustrated by: documenting the time of auditing procedures, the impact of some characteristics of internal auditing that already exist with manual auditing, the possibility that some of the workers manipulate data from other sites without being caught, the specifications and properties of a computer which can be vital to auditors these properties take shape as follows: (Alsahn ,1998)

- 1) Systematic and continuous performance
- 2) Separate records
- 3) Updating accounts and files instantly and at the same time

Banks in general seek to achieve fiscal and monetary stability in their systems through the organization of work, ensuring the safety of their financial statuses, and its commitment to implementing technological standards in accordance with international standards on one hand and in terms of the standards set by the local regulatory authorities on the other.

Our study about using technology and its effect in raising the efficiency of internal auditing in Islamic banks operating in Jordan represents a main factor for some accountants and auditors, where internal auditing in Islamic banks involves the various auditing services and operations in other banks.

5- Scientific Side

5-1- Hypotheses of the study

This research is based on the following nihilistic hypotheses:

- 1) There is no agreement between workers in internal auditing departments about the impact of the characteristics of technological environment for information systems on the operational control risks in Islamic banks operating in Jordan
- 2) There is no agreement between workers in internal auditing departments about the availability of sound and appropriate characteristics of technological environment
- 3) There is no positive impact for using information technology on the independency and privacy of internal auditing in Islamic banks operating in Jordan in the shadow of globalization
- 4) Islamic banks operating in Jordan do not have a commitment to the technological needs for controlling their electronic banking activities

5-2- Society and samples of the study

The study's society consists of all of the Islamic banks operating in Jordan that are licensed by the Central Bank of Jordan (Dubai Islamic Bank, Al Rajhi Bank, Jordan Islamic Bank, Islamic International Arab Bank). Fifty questionnaires were distributed directly to internal auditing departments, forty eight questioners were used and turned back in directly which makes a good percentage of participants

5-3- Description of the study sample

Questionnaires were distributed to oversight and internal auditing departments, their demographic results are in table (1):

Table No. 1: The study sample according to demographic properties

Percentage	Frequency	Variable	
%56.3	27	Male	Gender
%43.8	21	Female	
%100	48	Total	
%45.8	22	Younger than 30 years old	Age
%41.7	20	31 to 40 years old	
%8.3	4	41 to 50 years old	
%4.2	2	Older than 50	
%100	48	total	
%29.2	14	Accounting	Academic Major
%20.8	10	Management	
%50	24	Banking and Financial Sciences	
-	-	Computer	
%100	48	Total	
%12.5	6	Less Than 5 Years	Years Of Experience
%54.2	26	5 to 10 Years	
%33.3	16	More Than 10	
%100	48	Total	

It's noted from table (1), 56.3% of the sample are males, 45.8% are less than 30 years of age which shows that the majority of the sample are youth, and that 50% hold degrees in Banking and Financial Sciences, while participants with 5 to 10 years of experience represent 54.2% of the sample, with experiences gained in that time period is close to the information technology age we live in.

5-4- a display of the results of the study:

Results in table no. 2 represent evaluation of the study sample

Table number 2: arithmetic mean and standard deviation for using information technology in the efficiency of internal auditing:

Standard Deviation	Arithmetic Mean	Articles	Article Number
0.71428	3.4792	A work manual that contains specific procedures for all operations is available at the bank	1
0.79448	3.4167	Work manual that contains detailed channels of communication between different departments and sections.	2
0.58346	3.5000	The work manual helps banks to apply the responsibility accounting system	3
1.04147	3.0208	Various departments and divisions can enjoy sufficient and appropriate independence to perform the tasks assigned to them.	4
0.95627	2.3542	Misusing power that is delegated to executive management	5
1.19988	2.4167	There are interventions by senior management in implementation of activities and processes.	6
1.12908	2.9583	Tasks and powers are concentrated with specific people in the bank.	7
0.76724	3.0833	Senior management is keen to establish a bank specialized regulatory departments and activate its role.	8
0.81187	3.0208	Senior management is to raise the level of scientific and practical qualifications for those working in the bank through continuous training.	9
0.42474	3.2292	Senior management follows the banking business ethics.	10
0.35480	3.0417	Information technology systems applied in the bank's auditing departments include sufficient protection for the physical components of the system and to prevent vandalism.	11
0.35667	3.1458	Information technology systems applied in the bank's auditing departments include sufficient protection for the logical system components.	12
0.64102	3.1875	Information technology systems have passwords and protection to block unauthorized access to confidential data.	13
0.54415	3.2917	Information technology systems applied in banks contain sufficient controls to ensure the accuracy and integrity of electronic data running through regulatory procedures that is appropriate for, Inputs, processes, and outputs	14
0.66844	3.2500	Banks have the appropriate infrastructure for using electronic banking activities.	15
0.55504	3.1042	Banks use sophisticated systems that suits electronic banking activities	16
0.71923	3.3125	The banking system provides high-speed access to its electronic operations.	17
0.92157	3.2917	Current software allows auditing periodically and continuously.	18

It is noted that the third article that states "work manual helps banks to apply the responsibility accounting system" came in first place with an arithmetic mean of 3.5 and a standard deviation of 0.58346, which means the necessity of increasing administration's interest of making an efficient work manual that has to be used by internal auditing departments insure the good application of the accounting system within the information technology used.

While the fifth article that states "Misusing power that is delegated to executive management" in last place with an arithmetic average of 2.3542 an a standard deviation of 0.95627

5-5- Stability test:

The test (Cronbach's alpha) was used to measure the accuracy of the measurement device, were alpha was measured at 66.14% which is an accepted result because it is higher than 60%

5-6- Hypotheses testing:

First hypothesis: There is no agreement between workers in internal auditing departments about the impact of the characteristics of technological environment for information systems on the operational control risks in Islamic

banks operating in Jordan

Table (3) Test results of the first hypothesis test

Result of nihilism hypothesis	T SIG	Original T value	Calculated T value
Rejected	0.00	2.0117	10.608

According to table number 3 and by using **ONE SAMPLE T- TEST** it is found that the calculated value of T (10.608) is larger than the original value, and since the decision rule is accepting the nihilistic hypothesis (HO) if the calculated value was less than the original value, and not accepting the nihilistic hypothesis (HO) if the calculated value was larger than the original value the alternative hypothesis (Ha) is accepted, which means that there is an agreement between workers in internal auditing departments about the impact of the characteristics of technological environment for information systems on the operational control risks in Islamic banks operating in Jordan

Second Hypothesis: There is no agreement between workers in internal auditing departments about the availability of sound and appropriate characteristics of technological environment.

Table (4) Test results of the second hypothesis test

Result of nihilism hypothesis	T SIG	Original T value	Calculated T value
Rejected	0.00	2.0117	5.901

According to table number 4 and by using **ONE SAMPLE T- TEST** it is found that the calculated value of T (5.901) is larger than the original value, and since the decision rule is accepting the nihilistic hypothesis (HO) if the calculated value was less than the original value, and not accepting the nihilistic hypothesis (HO) if the calculated value was larger than the original value the alternative hypothesis (Ha) is accepted, which means that there is an agreement between workers in internal auditing departments about the availability of sound and appropriate characteristics of technological environment.

Third Hypothesis: There is no positive impact for using information technology on the independency and privacy of internal auditing in Islamic banks operating in Jordan in the shadow of globalization

Table (5) Test results of the third hypothesis test:

Result of nihilism hypothesis	T SIG	Original T value	Calculated T value
Rejected	0.00	2.0117	11.166

According to table number 5 and by using **ONE SAMPLE T- TEST** it is found that the calculated value of T (11.166) is larger than the original value, and since the decision rule is accepting the nihilistic hypothesis (HO) if the calculated value was less than the original value, and not accepting the nihilistic hypothesis (HO) if the calculated value was larger than the original value the alternative hypothesis (Ha) is accepted, which means that There is a positive impact for using information technology on the independency and privacy of internal auditing in Islamic banks operating in Jordan in the shadow of globalization.

Fourth Hypothesis: Islamic banks operating in Jordan do not have a commitment to the technological needs for controlling their electronic banking activities.

Table (6) Test results of the fourth hypothesis test:

Result of nihilism hypothesis	T SIG	Original T value	Calculated T value
Rejected	0.00	2.0117	11.182

According to table number 6 and by using **ONE SAMPLE T- TEST** it is found that the calculated value of T (11.182) is larger than the original value, and since the decision rule is accepting the nihilistic hypothesis (HO) if the calculated value was less than the original value, and not accepting the nihilistic hypothesis (HO) if the calculated value was larger than the original value the alternative hypothesis (Ha) is accepted, Islamic banks operating in Jordan have a commitment to the technological needs for controlling their electronic banking activities.

Results:

- There is an agreement between workers in internal auditing departments about the impact of the characteristics of technological environment for information systems on the operational control risks in Islamic banks operating in Jordan.
- There is an agreement between workers in internal auditing departments about the availability of sound and appropriate characteristics of technological environment.
- There is a positive impact for using information technology on the independency and privacy of internal auditing in Islamic banks operating in Jordan in the shadow of globalization.
- Islamic banks operating in Jordan have a commitment to the technological needs for controlling their electronic banking activities.

Recommendations:

- Coordinating first-time banking operations between management and internal auditing departments to prevent errors from being encountered in the future
- Containing all aspects of banking activities, to develop a regulatory plan for transactions to enable auditing departments to control any changes in any banking operations
- Improving the currently available accounting system in the Jordanian Islamic banks to feed sufficient information to all parties involved in the auditing process
- Holding events and seminars about auditing using computers to raise awareness about the auditing field and what computers bring to this service.

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