

European Journal of Business and Management
ISSN 2222-1905 (Paper) ISSN 2222-2839 (Online)
Vol.5, No.7, 2013

www.iiste.org



The importance of Professional specialty of External Auditor in Accounting Information Systems for providing Auditing Services in Information Technology Environment – A field Study in the Jordanian Banks

Dr. Reem okab

Assistant Professor, Department of
Financial & Administrative Sciences

AL-Huson University College, AL-Balqa' Applied University, Jordan, P. O. Box 676, AL-Huson, 21510, Jordan,
medoheart2000@yahoo.com

Abstract

This study aims at identifying the role and importance of the Professional specialty in information technology when audit services are provided and at identifying to which extent the auditor understands the concept and the benefits of the Professional specialty. Furthermore, it aims at analyzing the importance of Professional specialty in information technology for the auditor in light of using increasingly information technology techniques in different sectors. It also aims at identifying to which extent the Professional specialty of the auditor in information technology contributes to improve the quality level of the Professional performance related to audit services provided in the banking sector. This study indicated that the external auditor understands highly the concept of the Professional specialty in information technology when he/ she provides audit services in the Jordanian banks; and it found that the Professional specialty achieves highly the benefits the Jordanian banks desire and improves the quality level of audit services provided by the Jordanian banks.

Key words: the specialty of the auditor, Information Technology, Auditing, Professional Audit

1-1 Introduction

Auditing Professional is affected by the conditions and developments surrounding it. Among of them is using electronic systems specifically via internet for performing its operations and providing its services. The use of these systems reflects on the nature of accounting systems as well as the methods and procedures of an internal control. It also exposes on the auditor a certain level of scientific and practical knowledge of information and communication technology. Therefore, the Professional specialty of audit companies is one of the means that enables the auditor to improve a quality level of audit. In light of the above mentioned, using and applying information technology systems are developing despite of a high level of the embedded risks which represented by disability of auditor for discovering substantial distortions of financial statements. This is due to a difference of the nature of data processing and exchanging as well as the difference of the methods of the internal electronic control systems in particular protection and confidentiality systems of data and risks related to the ability of administration for using the electronic systems for distorting substantially the data. In order to enable the auditor to perform audit missions at a high level of quality and decrease a risk level of audit pertaining to information technology, he / she must have scientific and practical knowledge of information technology. Furthermore, he/ she must be able to use the electronic programs for performing audit operations, evaluating the internal control systems, and implementing control tests in particular the tests of security, confidentiality and electronic processing 's safety as well as the substantial tests of financial data at the level of balances and operations. It can be called "the Professional specialty of information technology" that the auditor seeks to reach through developing the scientific knowledge, which can be promoted by viewing periodicals and attending training courses of information technology. This study aims at identifying the role and importance of the Professional specialty of external auditor in information technology for improving the quality level of the external audit services provided in one of the most important economic sectors, banking sector. It uses and applies frequently information and communication technology programs for performing its works.

2-1 The problem of the study:

Professional specialty is one of the modernist fields used for developing audit occupation. It is also one of the most

important methods audit offices can use to confront the growing competition in banking sector in light of globalization, opening up the markets, using electronic banks, and relying on information network in order to provide banking services via electronic sites. Therefore, audit standards indicate that auditor shall understand establishment's nature and environment and have a proper scientific qualification, which helps him/her to perform audit services. Based on the above mentioned, this study seeks to answer the following questions:

- What is the importance of Professional specialty of the external auditor in information technology for improving audit services provided in the Jordanian banks?
- Does the Professional specialty of external auditor in information technology contribute to improve the Professional performance level of audit services provided in the Jordanian banks?
- Does the Professional specialty of the external auditor in information technology achieve the benefits desired from the external audit process conducted in the Jordanian banks?

3-1 The purposes of The study:

This study aims at achieving the following purposes:

- Identifying the concept of the Professional specialty of the external auditor in information technology and its fields.
- Analyzing and stating the importance of the Professional specialty of the external auditor in information technology in light of using information technology techniques in different business sectors.
- Identifying to which extent the Professional specialty of the external auditor in information technology contributes to improve the Professional quality level of audit services provided in the banking sector.
- Identifying the most important factors that affect the use of the entry of the Professional specialty of the external auditor in information technology in the field of providing audit services in the Jordanian banks.

4-1 The hypotheses of The study:

This study seeks to test the following hypotheses:

- External auditor working in the Jordanian banks does not understand the concept and the fields of the Professional specialty in information technology.
- External auditor working in the Jordanian banks does not understand the importance of the Professional specialty in information technology while audit services are provided.
- Orienting toward the Professional specialty of external auditor in information technology does not achieve the benefits desired when auditing services are provided in the Jordanian banks.
- Professional specialty of the external auditor in information technology does not contribute to improve the quality level of the external audit services provided by the Jordanian banks.

5-1 The importance of the study:

This study derives its importance from its subject, the Professional specialty. It is a new dimension of audit occupation and contributes to achieve audit quality in information technology environment. This is due to the high level of risks related to audit process conducted in information technology environment. These risks can be represented by (1) a failure of auditor of discovering the complicated use of electronic systems conducted by administration in order to fraud and cheat as well as distort substantially the financial statements, and (2) a failure of auditor of reaching adequate evidences related to these electronic operations. This modern environment of accounting work is a challenge the auditor faces. Therefore, the auditor must have the scientific and practical qualification acquired by the continuous and specialized training of the fields of the information technology.

2 – Previous Studies

There are many studies examining the Professional specialty and the quality level audit. Okeefe 's study (1994) is one of the oldest studies that test the relationship between an industrial specialty of audit company and the quality level of audit. The study showed that audit quality is a measure of performing audit service market and that audit process conducted by a specified company of industry is one of the important factors, which identify the quality level of audit. Finally, it has concluded that there is a positive relationship between the Professional specialty of audit office and audit quality, and that audit offices, which have many clients working in the same industry, are more subjected to audit risks related to this sector. Owoso, Messier& Lunch's study showed that the specialty in audit occupation affects positively auditor's abilities of discovering the faults occurred in the financial statements. This has been stated by choosing two hypothetical cases of audit including a set of accounting faults; these faults are classified into specialized accounting faults related to an activity of a certain sector and general faults which do not related to a class of a sector without the other. This study found that the specialized auditor is able to discover more

number of the specialized faults in comparison with non-specialized auditor because non-specialized auditor does not have the capabilities, which enable him/ her to discover both types of faults. Layla Aziz Salib' s study (2003) aimed at identifying to which extent the Egyptian market accepts the specialty of auditor 's work, and to which extent the respective parties understand the importance of the specialty and discuss the importance of specialty during the stage of forming auditor's opinion. This study concluded that there is no dispute between auditors' opinions about the conviction of the specialty of auditor work and the effect of this specialty on reducing the risk of the audit, if the factors, which hinder the specialty, are overcome. These factors are represented by (1) a high cost of specialty, and (2) a size of audit office. Low's study (2004) aimed at choosing a role of the industrial specialty of the auditor for improving an efficiency of the concerned performance of the external audit and examining its effect on the accuracy of the estimates. It concluded that accuracy's degree of estimates of the expected risks that may occur in audit operations conducted by the specialized auditor in a certain sector is higher than that of estimates conducted by non-specialized auditor. Furthermore, it concluded that the strategy of the Professional specialty in a certain sector plays an important role in (1) promoting an efficiency of the Professional specialty of the external auditor including estimates' accuracy of the expected risks, and the quality of decisions related to audit operations, (2) detecting and confronting financial fraud and cheat cases as well as the methods of administrating the accounting net income, and (3) narrowing a gap of the expectations existed in the external audit occupation's reality. Khalid Mohammad Abd Al-Mun'am Labib 's study (2005) aimed at examining analytically a nature of the Professional specialty's role and its quality in improving the efficiency of the Professional performance of the external audit. This purpose has been achieved by (1) analyzing the role of specialty in improving the external auditor's abilities related to the accuracy of estimates of inevitable risks and the quality of decisions of planning audit operations, (2) detecting and confronting financial fraud and cheat cases as well as the methods of administrating the accounting net income, and (3) narrowing a gap of the expectations existed in the external audit occupation's reality. The study found that the Professional specialty plays an important role in promoting the efficiency of the Professional performance of the external audit when the abilities of auditor, which include the accuracy of the inevitable risks and the quality of the decisions of planning audit operations, are promoted.

Ahmad Zaki Hussein Mutwali 's study (2006) aimed at assessing the Professional specialty of audit establishments and setting an intellectual frame used for explaining the variables which affect the process of measuring the role of the Professional specialty of the auditor in administrating audit missions and explaining them. These missions are represented by (1) the effect of the Professional specialty on assessing the risks conducted by the auditor, (2) the role of specialty in increasing the quality of audit, and (3) the relation between the specialty and amending the report. Furthermore, the study examined the Professional specialty of the audit as one of determinants of the external audit fees and it also illustrated the reflections of the Professional specialty on administrating the quality of accounting profits as well as developing auditor performance related to the confirmed services stemming from a perspective of the Professional specialty. The study concluded that there is a field and practical evidence illustrating the importance of the Professional specialty of the auditor and that there is a different influential relation of applying the Professional specialty of the auditor; it is illustrated through the role of the Professional specialty in assessing the different types of risks and its affect on the quality level of the audit. This study also found that the Professional specialty of the auditor contributes to eliminate the risks of cheat and fraud cases, promotes audit process until it reaches to the required quality level, removes the gap of the expectation, and increases the degree of relying on the confirmed services.

Kwon, lim, & Tan 's study (2007) aimed at examining the Professional specialty of the auditor in its global frame and testing whether the Professional specialty of the auditor affects the quality level of the accounting profits in light of the legal environment or not. The study found that audit's clients connected with audit offices specified in a certain sector have low values of profit administration levels whereas they have high values of wisdom adjustments in comparing with those clients who connected with non-specified audit offices. Moreover, it indicated that the Professional specialty of the auditor affects positively the quality of profits despite of a weak legal environment. In general, the results of this study stated that the necessity of using specified auditors increases if the legal environment is weak. As a result, the scope of audit will expand greater in the industries linked to cases of litigating the auditor than those linked to the low levels of litigation.

Lim & Tan 's study (2008) aimed at identifying whether providing services other than auditing weakens auditor 's independence and the quality of audit or not. This study conducted because the results of the previous studies related to the field of the Professional specialty of auditor were variable. Furthermore, the fees of specified auditor

who provides services other than auditing are high; this encourages the financial analyzers and the users of financial statements to use the specialized auditors who do not provide only the auditing service but also a set of other different services including consulting service. The results of the study showed that the financial analyzers trust more in audit process conducted by the specialized auditors than that conducted by non- specialized auditors. Furthermore, the specialized auditor of a certain industry has an ability to obtain a benefit from an outflowing knowledge of that industry; this leads to provide not only audit services but also other than services at a high level of quality. Thus, the specialty helps the auditor to maintain explicitly or implicitly his / her independence.

In light of those studies, the researcher mentioned above, it is stated that the researchers are increasingly interested in examining the importance of the Professional specialty of the auditor. This is due to the complexity of work environment and using the electronic systems in order to process accounting data.

3- Theoretical Frame

This section of the study consists of subjects pertaining to the Professional specialty of the auditor specifically in information technology. It examines (1) the concept of the Professional specialty and its fields, (2) its importance in the field of the information technology, (3) audit standards related to the Professional specialty of information technology environment, and (4) the role of occupation specialty of information technology in improving the quality level of audit operation. These subjects are discussed below:

1-3 The concept of the Professional specialty of the auditor in information technology and its fields:

Although there is a general trend towards the Professional specialty, it is difficult to identify the concept of Professional specialty related to audit services. The researchers examined many entries of the Professional specialty's concept; one of them is market share, which considers that audit company possesses the largest market share. Solomon and others (1999) defined the specialized auditor as "the auditor who trains and obtains a practical experience of different fields. Regarding the Professional specialty, Labib (2002) stated that the audit company must be able to obtain at least 20 % of the total number of the companies belonging to the sector or 20 % of the auditing fees at the level of the sector. Sooyoun Kwn defined the Professional specialty of the auditor as "possessing an extending scope of practical knowledge and skill of a certain field" whereas Awad (2006) defined it as "audit services provided by the auditor to the clients belonging to a certain sector or activity including the similarity of the nature of the operations conducted by the establishments existed in the same sector and the possibility of obtaining the knowledge and experience related to the nature of that operations.

Based on the above mentioned, it can be said that the Professional specialty is the organized and specialized knowledge of a certain field. Here, audit companies invest in employee training in order to develop their skills of a certain field. From the perspective of information and communication technology, the Professional specialty is defined as "the ability to improve the skills and the knowledge of the auditor in the field of information and communication technology and their effects on the accounting and internal control systems, and to develop his/her skills and knowledge of providing audit services by using information technology. Such investments in training the auditor and developing his/ her skills and knowledge of information technology reinforce the quality of auditing services; they also help audit companies to be characterized among other companies.

2- 3 Fields of the Professional specialty of the external auditor in information technology

Fields of the Professional specialty of the external auditor in information technology can be outlined as follows:

- 1- Organized knowledge specialized in the effect of information technology on the accounting system including data documents and files, electronic data processing, data storing and retrieving, and accounting system development.
- 2- Knowledge specialized in internal control standards. Here, it is worthy to mention that we must distinguish the following (1) traditional electronic internal control standards used in the accounting systems, (2) internal control standards related to the electronic sites, (3) using the local nets for exchanging information, and (4) the ability of the auditor of evaluating control's standards concerning the security and the confidentiality of data exchange.
- 3- Knowledge specialized in the effect of information technology on the nature of evidence and the method of obtaining the electronic evidence, sending the electronic coincidences, and documenting audit process.
- 4- Knowledge specialized in (1) the effect of using the electronic sites on the financial operations (the so-called electronic trade), (2) auditor's responsibility of auditing the electronic trade operations, and (3) providing internal control standards related to the safety of electronic sites' security and confidentiality whether for commercial establishments or banks through the electronic banks.

5- Knowledge specialized in using the tools of information technology in order to coordinate audit operations and collect the evidences.

6- Knowledge specialized in audit risks of information technology structure; these risks which relate to the internal control 's standards may include the following : (1) penetrating and stealing the data, (2) destroying them, and resorting to fraud and cheat through using information technology while the financial statements based on the substantial definition are prepared.

3-3 The importance of the Professional specialty of the external auditor in information technology

From researcher's point of view, there is a set of factors leading to examine increasingly the occupation specialty of external auditor in information technology; these factors are as follows:

1- Rapid development of using and applying information and communication technology in the financial systems. Different sectors use widely information technology in order to process their transactions and provide the services as well as production. They trend recently to use the digital organization through the electronic sites. This new environment of electronic transactions adds new missions the auditor must do. In such case, the auditor needs to the Professional specialty in order to perform these missions, seize the competitive opportunity, and deal permanently with the all threats occurred in different types of organizations.

2- Increasing the competition occurred in audit occupation; the organizations do not compete only on price and the quality of service but also on ability of providing services at a high level of development which suit new work environment. As a result, work organization including audit offices must have the ability to compete in light of the rapid change; this can be achieved by the Professional specialty which develops the characteristic of the permanent competition, by promoting the resources and the abilities of audit offices in the fields of information technology, and by obtaining the knowledge which considers a competitive feature in term of the ability to provide new services and develop the recent operations of audit. Here, the research found that the previous factors add new requirements the auditor shall meet. Furthermore, the auditor must know the subjects and the risks of information technology, the requirements of internal control, as well as security and confidentiality of data related to the service provided by the auditor. The costs of obtaining knowledge and training are huge; it is worthy to mention that the auditor may subject to many risks if he/ she undertakes audit missions without an adequate knowledge about information technology and security and control's requirements; this is due to disability of discovering the distortions linked to the financial statements.

The importance of the Professional specialty of the auditor is illustrated by the following points (O'Reilly, 2002) :

1- Professional specialty of auditor contributes to form the structure of knowledge and experiences in a certain industry. Consequently, the services are provided at a high level of quality and efficiency. The Professional specialty of information technology needs to form knowledge and experiences, which include all axes of information technology. This type of knowledge enables the auditor to perform effectively his/ her services, to collect the evidence, and to evaluate internal control systems in technology environment.

2- Professional specialty of the auditor provides an accurate and comprehensive knowledge of the accounting policies and methods applied in this industry. Here, the auditor is not specialized only in providing the services to the recent company but also attracting other companies of the same sectors. In information technology environment, the Professional specialty helps to identify the risks and the expected distortions that may occur if information technology systems are applied in a certain sector.

3- Professional specialty helps the specialized audit offices to distribute the costs of training and development on a large number of clients. This is because the specialty of information technology including training and learning the methods of using information technology systems as well as auditing in information technology environment needs high costs.

4- Professional specialty simplifies audit mission required in processes and procedures in information technology environment, which based on the personal estimation. Then, possibilities and opportunities which do not contribute to discover the substantial faults of financial statement are identified.

5- Professional specialty achieves better revenue in favor of audit company because it meets distinctively clients' needs. As a result, it helps audit company to obtain the largest market share of the facilities working in the field of information technology.

6- Occupation specialty of information technology enhances audit office's reputation in term of providing variable and distinct services and expanding the scope of audit and confirmation services.

7- Occupation specialty of information technology improves the ability of auditor to evaluate effectively the risks that may occur in this sector.

8- Professional specialty of auditor strengthens office 's competitive center among other audit offices and increases office 's profits by obtaining new clients with maintaining the previous clients. As a result, high financial revenues will be obtained by providing audit services in the field of industrial specialty.

4-3 The role of audit standards of orienting audit occupation toward the Professional specialty:

Professional specialty of the auditor is one of contemporary trends that seek to develop such an occupation. Although there is no a specialized standard of audit illustrates a necessity of the Professional specialty of the auditor, there are many standards require understanding the nature of the industry which considers work scope of the establishment. This is an initial necessity which helps the auditor to figure out the risks occur in that sector and to plan auditing process. International standards of auditing and American standards have agreed that the auditor must know the nature of client's work and activity because this considers an important part of planning for audit process. Furthermore, the auditor must be able to identify the risks occur in this sector and estimate the substantial deviations. International audit standard, 312 showed that the auditor shall study establishment's environment, the risks of the substantial faults in order to accept the mission. The American society of certified accountants indicated that the Professional specialty is one of the important issues audit occupation faces. Audit standard issued by the organization of information systems' auditing which identifies the responsibilities of the auditor in information technology environment indicated that the auditor in information technology environment has to plan and perform audit's missions in information technology environment; this can be done by (1) estimating accurately audit's risks that may occur in information technology environment, (2) understanding the nature of establishment activity and information technology systems it uses, and (3) understanding internal control standards related to the electronic services.

4-Field study:

1-4 The methodology of the study

Analytical descriptive approach which based on studying phenomenon as it is in reality has been used. It describes accurately and expresses qualitatively and quantitatively the phenomenon under studying. In order to collect the data require, it depends on two types of resources; they are as follows:

Secondary Resources:

They consist of literatures including books, periodicals, reaches, reports, Arabic and English bulletins related to the subject of this study as well as the perspective governmental documents, laws, and regulations; these resources cover the theoretical part of this study.

Primary resources:

They consist of a questionnaire designed by the researcher and it distributes on the employees of audit departments existing in the Jordanian banks.

2-4 Instrument of the study:

After viewing the theoretical part of this study, a questionnaire has been designed in order to collect the required data for achieving the purposes of the study. Designing the questionnaire has been based on some studies related to the subject such as Okeefe 's study (1994), and Low's study (2004). Then, it, the questionnaire, has been viewed by subject's professor in order to arbitrate it and ensure its validity and comprehensiveness which lead to achieve the purposes of the study. Five-likert scale has been used for determining the degrees of respondents' approval regarding each item of the questionnaire, and transferring them to digital data which can be measured and described statistically. These degrees are as follows (strongly agree, agree, neutral, disagree, and strongly disagree). Furthermore, the scales given ranges from 1-5, respectively.

3-4 The population and sample of the study:

The population of this study consists of the banks listed in Amman stock exchange and they are 15. The sample consists of the external auditors of the commercial banks. In order to collect the required data, 3 questionnaires have been distributed in each of 15 banks. A report issued by Amman stock exchange's electronic site (www.jsc.gov.jo) in September has stated the banks listed in Amman stock exchange (Appendix 1). Thus, 45 questionnaires have been distributed on the external auditors working in the Jordanian banks listed in Amman stock exchange. but 39 valid questionnaires have been returned back i.e 86.67 % of the total number of questionnaires.

4-4 Tests of the instrument of the study

A- **Validity:** it means that the tool of the study i.e a questionnaire, measures actually the thing which must be measured. In order to test questionnaire validity, it has been viewed by subject's professor for arbitrating and reviewing it.

B- **Reliability:** it means that the same results shall occur if the study is repeated under the same conditions. Tool's reliability has been measured by internal consistency variable, Cronbach Alpha. This value is considered weak if it is less than 60 %, acceptable if it ranges from 61 % to 71 %, and good if it is 80 % or more. Internal consistency variable of each field of study has been extracted. Then, internal consistency variable of each item of questionnaire has been extracted as shown in table 1.

Table (1) shows that Alpha value is good and refers to the reliability of study's instrument and its internal consistency of study axes; Alfa value ranges from (0.80) at its minimum level to (0.85) at its maximum level. Furthermore, Alpha value of study 's overall instrument and of its items indicate that the degree of reliability and consistency is good; it reaches to (0.81 %).

5-4 Statistical Methods used in data analysis

Statistical Package for Social Sciences- SPSS has been used for analyzing, and testing the hypotheses, these statistical methods have been as follows:

- 1- Alpha Cronbach's test which aims at ensuring the internal consistency of measurement instrument and its reliability.
- 2- Arithmetic means which identify the response level of respondents who answered questionnaire's items.
- 3- Standard deviations for measuring the degree of absolute dispersion of reponses' values.
- 4- One sample T-Test for testing the hypotheses of the study

Table (2) shows the standard of analysis measure standard where the analysis bases on the values of arithmetic mean.

5- Analysis of the data and test of the hypotheses of the study

This section of the study shows the results the field study reached and it discusses these results in light of the purposes, the hypotheses of the study. The first part of this section tests the hypotheses of this study:

1-5 Testing the hypotheses of the study

According to study's axes, the hypotheses have been tested and discussed.

First Hypothesis: External auditor working in the Jordanian banks does not understand the concept and the fields of the Professional specialty in information technology.

To check validity of this hypothesis, means and standard deviations of items related to the first hypothesis have been extracted. Table below outlines the results:

Table (3) shows arithmetical means and standard deviations of the items related to the first hypothesis. Arithmetical means range from 3.64 to 4.38; item 1 stating that " The concept of the Professional specialty of information technology refers to develop auditor's skills of information and communication technology and their effect on the accounting systems and internal control systems " at the first rank and its Arithmetical mean reaches to 4.38 whereas item 9 stating " The specialized and deepened knowledge related to the nature of the effect of information and communication technology on the methods of registering and preparing the financial statements in information technology environment is one of the Professional specialty's fields" at the last rank and its arithmetical mean reaches to 3.64; the overall arithmetical mean reaches to 4.13

Furthermore, arithmetic mean has been compared with the standard mark (3)- the acceptance standard of the hypotheses- by using (t) test as shown in table (4).

Table shows that there are statistically significant differences ($0.05 \geq a$) between arithmetical mean and standard mark (3) where the "T" value has reached to 64.41; and the statistical significance has reached to (0.000). As a result, this hypothesis has been refused.

Second hypothesis: External auditor working in the Jordanian banks does not understand the importance of the Professional specialty of information technology while audit services are provided.

To check validity of this hypothesis, means and standard deviations of items related to the second hypothesis have been extracted. Table below outlines the results.

Table (5) shows arithmetical means and standard deviations of the items related to the second hypothesis.

Arithmetical means range from 3.64 to 4.41; first item stating that " The development of information technology used in the Jordanian banks contributes to orient toward the Professional specialty of the external auditor in information technology" and second items stating that " The Professional specialty of the external auditor in information technology increases the efficiency of evaluating the internal control systems existing in the Jordanian banks" have occupied the first rank and arithmetic mean has reached to 4.41 whereas the item stating that " The Professional specialty of audit's offices in information technology promotes audit occupation in light of the contemporary developments" has occupied the last rank and the arithmetic mean has reached to 3.64. Overall arithmetic mean of the importance of the Professional specialty in information technology has reached to 4.14.

Furthermore, arithmetic mean has been compared with the standard mark (3)- the acceptance standard of the hypothesis- by using T- test as shown in table (6).

Table shows that there are statistically significant differences ($0.05 \geq \alpha$) between arithmetical mean and standard mark (3) where the "T" value has reached to 66.27; and the statistical significance has reached to (0.000). As a result, this hypothesis has been refused.

Third hypothesis: orienting toward the Professional specialty of the external auditor in information technology does not achieve the benefits desired when audit services are provided in the Jordanian banks.

To check validity of this hypothesis, arithmetic means and standard deviations of items related to the third hypothesis have been extracted.

Table (7) shows arithmetical means and standard deviations of the items related to the third hypothesis. Arithmetical means range from 3.23 to 4.30; item stating that " Applying the Professional specialty of information technology improves the efficiency of the auditor to identify the risks' areas existing in the electrical systems" has occupied the first ranks and the arithmetic mean has reached to 4.30 whereas the item stating that " Applying the Professional specialty of information technology contributes to increase the level of external audit 's fees" has occupied the last ranks and the arithmetic mean has reached to 3,23. the overall arithmetic mean has reached to 3.66, and it is a high percentage.

Furthermore, arithmetic mean has been compared with the standard mark (3)- the acceptance standard of the hypothesis- by using T- test as shown in table (8).

Table shows that there are statistically significant differences ($0.05 \geq \alpha$) between arithmetical mean and standard mark (3) where the "T" value has reached to 53.58; and the statistical significance has reached to (0.000). As a result, this hypothesis has been refused.

Fourth hypothesis: Professional specialty of the external auditor in information technology does not contribute to improve the quality level of external audit services provided the Jordanian banks.

To check validity of this hypothesis, means and standard deviations of items related to the second hypothesis have been extracted. Table (9) shows arithmetical means and standard deviations of the items related to the fourth hypothesis. Arithmetical means range from 3.64 to 4.38; item stating that " Providing the scientific and practical knowledge specialized in the accounting information systems as well as the ability of using this knowledge for preparing a report helps the auditor to increase the quality level of the Professional performance of audit services" has occupied the first rank and the arithmetic mean has reached to 4.38 whereas the item stating that "Providing the scientific and practical knowledge specialized in the electronic control systems as well as the ability of using this knowledge to plan audit 's process helps the auditor to improve the quality level of the Professional performance related to the audit services submitted" has occupied the last rank and the arithmetic mean has reached to 3.64. The overall arithmetic mean of improving the quality level of the external audit services has reached to 4.13, and it is a high percentage.

Furthermore, arithmetic mean has been compared with the standard mark (3)- the acceptance standard of the hypothesis- by using T- test as shown in table (10).

shows that there are statistically significant differences ($0.05 \geq \alpha$) between arithmetical mean and standard mark (3) where the "T" value has reached to 64.41; and the statistical significance has reached to (0.000). As a result, this hypothesis has been refused.

6 - Results and Recommendations

1-6 The results of the study

Based on the analysis and discussion of the results of the study, the most important results are outlined as follows:

1. The study found that the external auditor understands highly the concept of the Professional specialty of information technology when he/ she provides audit services in the Jordanian banks; the arithmetic means has reached to 4.13.
 2. The study found that the external auditor understands highly the importance of the Professional specialty of information technology when he/ she provides audit services in the Jordanian banks; the arithmetic means has reached to 4.14.
 3. The study found that the Professional specialty achieves highly the benefits desired by the Jordanian banks; the arithmetic means has reached to 3.66.
 4. The study found that the Professional specialty of the external auditor in information technology contributes to improve highly the quality level of audit services provided in the Jordanian banks the arithmetic means has reached to 4.13
- According to the above mentioned, the results of this study agree with the results of Okeefe 's study (1994), Low 's Low (2004), and Carcello & Nagy 's study (2002).

2-6 Recommendations

In light of the results this study has reached, the researcher recommends the following:

- 1- She recommends that the Jordanian banks shall be encouraged for establishing a department of audit specialized in information technology and conducting training courses to qualify practically and Professionally the working stuff.
- 2- She recommends that the strategy of the Professional specialty in information technology shall be applied for increasing the efficiency of the auditor of using the electronic techniques for performing audit operations.
- 3- She recommends that accounting information technology shall be taught as one of university's courses due to its importance in work market; and this step will provide the Professional qualified stuffs the market requires.

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Table (1)
Internal consistency Variable Cronbach' Alpha of Dimensions and Overall Instrument

Field	Number of items	Internal consistency	Level of Internal consistency
The concept and importance of the Professional specialty of information technology of the external auditors working in the Jordanian banks	9	0.81	Good
The importance of the Professional specialty of information technology in the Jordanian banks	11	0.83	Good
Achieving the benefits desired from the Professional specialty of information technology of the external auditor working in the Jordanian banks	9	0.85	Good
Contributing the Professional specialty of information technology of the external auditor to improve and administer audit operations in the Jordanian banks	9	0.80	Good
Overall tool (all questions)	38	0.81	Good

Table (2)
Analysis Measure Standard

Arithmetic Mean	Degree
1- 2,49	Low
Higher than 2,49- 3,49	Middle
Higher than 3,49- 5	High

Table (3)

Arithmetic means and Standard deviations of Items related to the First hypothesis

Items	Arithmetical mean	Standard deviation
The concept of the Professional specialty of information technology refers to develop auditor's skills of information and communication technology and their effect on the accounting systems and internal control systems.	4.38	.54
The concept of the Professional specialty of information technology refers to develop auditor's knowledge of information and communication technology and its effect on the accounting systems and internal control systems.	4.38	.54
The concept of the Professional specialty of information technology refers to develop auditor's skills of providing audit services by using information technology.	4.30	.65
The concept of the Professional specialty of information technology refers to develop auditor's knowledge of providing audit services by using information technology.	4.25	.63
The specialized knowledge the auditor have in using information technology for coordinating audit operations and collecting the evidences of information technology from different fields of the Professional specialty.	4.15	.74
The specialized and deepened knowledge of internal control standards in information technology is one of the Professional specialty's fields.	4.15	.74
The specialized and deepened knowledge of information technology's risks in information technology is one of the Professional specialty's fields.	3.94	.55
The specialized knowledge related to the effect of information technology on the nature of the evidences and the method of obtaining the electronic evidences, sending the electronic coincidences, and documenting audit operation in information technology environment is one of the Professional specialty fields.	3.92	.62
The specialized and deepened knowledge related to the nature of the effect of information and communication technology on the methods of registering and preparing the financial statements in information technology environment is one of the Professional specialty's fields.	3.64	.73
ALL	4.13	.40

Table (4)

Arithmetical means, standard deviations and "T" test for the items in comparison with standard (3)

The concept and importance of the Professional specialty	No.	Arithmetical mean	Standard deviation	T value	Degrees of freedom	Significance level
	39	4.13	40.	64.41	38	000.

Table (5)

Arithmetic means and standard deviations of items related to the second hypothesis

Items	Arithmetical mean	Standard deviation
The development of information technology used in the Jordanian banks contributes to orient toward the Professional specialty of the external auditor in information technology.	4.41	.55
The Professional specialty of the external auditor in information technology increases the efficiency of evaluating the internal control systems existing in the Jordanian banks.	4.41	.55
The Professional specialty helps audit offices to achieve the competition.	4.30	.65
The structure of knowledge and experiences, which includes all axes of information technology, enables the auditor to perform effectively his/ her	4.30	.65

services and collect the evidences existing in information technology environment.		
The Professional specialty of the auditor in information technology improves the ability of evaluating the risks related to use and apply information technology in the Jordanian banks.	4.28	.64
The Professional specialty helps audit offices to distribute the costs of train and development related to information technology on greater number of the clients.	4.17	.75
The Professional specialty of the auditor in information technology improves the ability of estimating the financial fraud and cheat's risks resulting by the use of the electronic systems	4.17	.75
The Professional specialty of information technology helps audit offices to provide distinctively the clients all services.	4.00	.56
The Professional specialty of the auditor in information technology improves the ability of estimating the financial fraud and cheat's risks resulting by the use of the electronic systems.	4.00	.56
The Professional specialty of audit offices in information technology decreases the necessity of using experts of electrical systems.	3.92	.62
The Professional specialty of audit offices in information technology promotes audit occupation in light of the contemporary developments.	3.64	.70
The importance of the Professional specialty in information technology	4.14	.39

Table (6)
Arithmetical means, standard deviations and "T" test for the items in comparison with standard (3)

The importance of the Professional specialty of information technology in providing audit services	No.	Arithmetical mean	Standard deviation	T value	Degrees of freedom	Significance level
	39	4.15	39.	66.27	38	000.

Table (7)
Arithmetic means and standard deviations of items related to the third hypothesis

Items	Arithmetical mean	Standard deviation
Applying the Professional specialty of information technology improves the efficiency of the auditor to identify the risks' areas existing in the electrical systems.	4.30	.65
Applying the Professional specialty of information technology improves the level of auditor's skills of amending and developing the procedures of audit in information technology environment.	4.07	.48
Orienting toward the Professional specialty of information technology contributes to provide services at high level of quality.	4.79	.69
Orienting toward the Professional specialty of information technology contributes to achieve the competitive feature for audit company.	3.69	.56
Orienting toward the Professional specialty of information technology contributes to increase the level of trust in the electrical systems and their outputs and to ensure that the administration is not exploited in the financial distortion	3.61	.74
Applying the Professional specialty of information technology increases the level of adhering the auditors to perform the standards of audit operation	3.56	.79
Applying the Professional specialty of information technology contributes to	3.41	.59

improve the efficiency of the auditor to use the electronic techniques for implementing audit operation.		
Applying the Professional specialty of information technology contributes to increase the level of trust when the clients are dealt via electronic sites.	3.30	.52
Applying the Professional specialty of information technology contributes to increase the level of external audit 's fees.	3.23	.53
Benefits desired from orienting toward the occupation specialty	3.66	.42

Table (8)
Arithmetical means, standard deviations and "T" test for the items in comparison with standard (3)

Benefits desired	No.	Arithmetical mean	Standard deviation	T value	Degrees of freedom	Significance level
	39	3.66	.43	53.58	38	.000

Table (9)
Arithmetic means and standard deviations of items related to the second hypothesis

Items	mean	Standard deviation
Providing the scientific and practical knowledge specialized in the accounting information systems as well as the ability of using this knowledge for preparing a report helps the auditor to increase the quality level of the Professional performance of audit services.	4.38	.54
The Professional specialty of information technology helps the external auditor to perform his / her audit mission at high level of quality.	4.38	.54
Providing the scientific and practical knowledge specialized in the accounting information systems as well as the ability of using this knowledge to collect the evidences of audit helps the auditor to improve the quality level of the Professional performance of audit services submitted.	4.30	.65
The Professional specialty of the auditor resulted by updating his/ her scientific and practical knowledge in information technology contributes to improve the quality of audit services.	4.25	.63
Disability of the auditor to discover fraud and cheat processes done by the administration which exploit the electronic systems and to collect the adequate and appropriate evidences decrease the quality level of auditing.	4.15	.74
The Professional specialty of information technology helps the auditor who can use the electronic techniques to provide audit services at high level of quality.	4.15	.74
Providing the scientific and practical knowledge specialized in the accounting information systems as well as the ability of using this knowledge to audit these systems helps the auditor to improve the quality level of the Professional performance.	3.94	.55
Providing the scientific and practical knowledge specialized in the internal electronic control systems as well as the ability of using this knowledge to prepare a report helps the auditor to improve the quality level of the Professional performance related to the audit services submitted.	3.92	.62
Providing the scientific and practical knowledge specialized in the electronic control systems as well as the ability of using this knowledge to plan audit process helps the auditor to improve the quality level of the Professional performance related to the audit services submitted.	3.64	.73
Improving the quality level of the external audit.	4.13	.40

Table (10)
Arithmetical means, standard deviations and "T" test for the items in comparison with standard (3)

Improving the quality level of the external audit	No.	Arithmetical mean	Standard deviation	T value	Degrees of freedom	Significance level
	39	4.13	40.	64.41	38	.000

Appendix 1

Banks listed in Amman Stock Exchange according to the report issued in September /1202

Islamic Jordanian Bank	Jordan Dubai Islamic bank	Cairo Amman Bank
Kuwait Jordan Bank	Al-Ittihad Bank	Bank of Jordan
Commercial Jordan Bank	Arab Banking corporation Bank / Jordan	Societe General Bank – Jordan
Housing bank for trade and finance	Investment bank	Jordan Ahli bank
Arab Jordan investment bank	Capital Bank of Jordan	Arab Bank