

The Role of E-Commerce on the Auditing Practices

Firas A.N Al-Dalabih¹ & Mohammad Enizan Al-Sharairi¹

¹ Irbid National University, Jordan

Correspondence: Firas A.N Al-Dalabih, Irbid National University, Jordan. E-mail: nabudalbouh@gmail.com

Received: January 21, 2019

Accepted: March 5, 2019

Online Published: March 15, 2019

doi:10.5539/ijef.v11n4p49

URL: <https://doi.org/10.5539/ijef.v11n4p49>

Abstract

This study aims to identify the role of E-commerce on the auditing practices in the Jordanian banking sector.

The sample of this study consisted of 120 selected from five banks in the north region in Jordan. These banks are: The Housing Bank for Trade and Finance, Union Bank, National Bank of Jordan, Arab Bank and Capital Bank, whereas a questionnaire was designed and distributed to them. A total of (100) questionnaire was retrieved that are valid for statistical analysis formed about 83.3% of overall distributed questionnaires; and the questionnaires have been analyzed using SPSS statistical software.

The results of the study indicate that there is a significant role of E-commerce in auditing process in the Jordanian commercial banks, beside that it was revealed that Jordanian commercial banks face many types of E-commerce risks associated with auditing, and the most risk that they faced was the lack of the auditors knowledge on the concepts of information technology and how they are used in auditing.

This study recommended the Jordanian commercial banks to conduct training courses for their auditors regarding the concepts of information technology, how to use them in auditing and the nature of the websites and how it design.

Keywords: E-commerce, auditing practices, Jordanian banking sector

1. Introduction

Currently, the organization relies on sophisticated electronic data processing (EDP) system to manage the business transactions and perform accounting records to win the business competition. The use of EDP systems in almost all organizations, of course, has an change impact not only in the accounting field, but also the auditing field (Ariyani & Maria, 2014).

The evolution of e-commerce, using a public network like the internet as a technological infra-structure to support the implementation of the information and communication channel, has produced a huge impact on what concerns the implementation of internal control systems and the information systems' auditing practices, when the commercial transactions are done electronically (Naseer & Azad, 2016).

Electronic commerce is a new concept describes the process of the sale or purchase or exchange of products and services and information through computerized networks including the Internet (Saputra, 2016).

Regarding the banking sector, it has witnessed significant progress in allowing customers to carry out many banking operations through electronic communications networks, such as providing online innovative services through electronic communication networks. It is expected that the use of these operations will increase widely in the coming period, especially in the light of the growing development in the field of banking technology, which will increase the burden on accountants and auditors alike. Accordingly, this study tries to highlight the impact of commerce in auditing process in the Jordanian commercial banks.

2. Statement of Problem

The problem of the study is representing in the risks that may arise from the practice of electronic commerce, which in turn affected the process of auditing the data, especially in commercial banks, which constitute the most important financial institutions in the state economy. With the ongoing of technological developments, commercial banks must cope with these developments in line with the speed of Banking service delivery and expansion it internationally through the different means of electronic commerce.

As a result, commercial banks may be exposed to many electronic risks regarding the various financial data,

particularly if there is no effective audit system in line with modern digital systems. Therefore, there are major challenges facing the auditing profession, such as the ways in which accounting systems are designed, and the level of development of internal control systems in commercial banks.

Based on the mentioned above, this study attempts to find answers to the following questions:

- 1) What is the role of E-commerce in auditing process in the Jordanian commercial banks?
- 2) Do the Jordanian commercial banks have a role in dealing with the E-commerce factors (accounting information security, electronic data interchange, electronic signature and electronic payment) that affect the audit criteria?
- 3) What are the types of E-commerce risks associated with auditing in the Jordanian commercial banks?

3. Importance of the Study

The importance of this study representing in the importance of developing the audit profession in its methods to maintain the accuracy and integrity of financial information, as well as protect it from the dangers of manipulation and theft. With the advent and spread of electronic commerce in various sectors and fields, effective auditing systems that are in line with technological and electronic changes are became essential.

Since commercial banks constitute the most important aspect of a country's economy due to the large volume of its banking and financial transactions that executed domestically and internationally, it is necessary to examine the importance of electronic commerce and its impact on the accounting profession in this sector, beside the examining of surrounded risks associated with audit profession; to avoid those risks and to maintain the electronic accounting data and information from exposure to such risks, and so to ensure the efficiency and effectiveness of the operation of the accounting system used by commercial banks.

4. Study Objectives

This research aim to achieve the following objectives:

- 1) Illustrate the role of E-commerce in auditing process in the Jordanian commercial banks.
- 2) Determining the role of Jordanian commercial banks in dealing with the E-commerce factors (accounting information security, electronic data interchange, electronic signature and electronic payment) that affect the audit criteria.
- 3) Acknowledge the types of E-commerce risks associated with auditing in the Jordanian commercial banks.

5. Hypotheses of the Study

We can develop the following hypotheses:

Ha1: There is a significant role of E-commerce in auditing process in the Jordanian commercial banks.

Ha2: The Jordanian commercial banks have a significant role in dealing with the E-commerce factors (accounting information security, electronic data interchange, electronic signature and electronic payment) that affect the audit criteria.

Ha3: Jordanian commercial banks face many types of E-commerce risks associated with auditing.

6. Literature Review

There are many studies that examined the E-commerce and auditing in separated way, but few of them that investigated the relationship between E-commerce and auditing, for example:

Amos et al. (2017) investigated the impact of E-Commerce on Auditing Practices of in Rivers State. to achieve the purpose of the study a questionnaire had been built and distributed to selected firms to collect the required data. The result indicated that there is a significant impact for e-commerce on auditing practices.

Tarek et al. (2017) examines the role of information technology on the Audit Profession in Developing Country. A questionnaire had been built and distributed to that study sample which consists of 112 auditors whom working at three of the Big 4 audit firms in Egypt. The results indicated that there is a significant relationship between the client's IT is and electronic data retention policies. It was found also that using of audit applications and IT expertise doesn't has significant impact toward audit firm size.

Naseer and Azad (2016) Analysis the effect of internal control system on E-commerce. In order to achieve the purpose of the study, it was depended on theoretical approach through reviewing the literature.

The results show a significant effect for internal control system on E-commerce, it was found also that there is a need for the implementation of risk based internal control systems, which take in consideration the new internal

control pattern, when commercial transactions occur electronically.

Saputra (2016) explain the relationship between the audit process and electronic commerce systems. In order to accomplish the purpose of the study, it was depended on theoretical approach through reviewing the literature.

The results conclude strong relationship between the audit process and electronic commerce systems.

Mazza and Azzali (2016) examined the relationship between information technology controls quality and audit fees in Italy. By depend on the questionnaire the finding reveal that information technology controls quality has a role in decreasing audit fees, control risk and audit effort.

Ariyani and Maria (2014) highlighted the impact of E- audit implementation on the auditor's performance in Indonesia. To achieve the purpose of the study a questionnaire had been built and distributed to selected auditors who worked in Public Accounting Firm (KAP) in Semarang. The results indicated positive and significant impact for the e-audit implementation toward the auditor's performance.

Al-jabali and Tawfeq (2014) studied the relationship between the information systems of accounting and auditing. The authors depend on the theoretical aspect to achieve their purposes. Their result found that audit function has a role in an electronic information system include the hardware, software and the database. In addition to that, it was found that auditing has a role in examining computerized information systems through determent the weaknesses and improves it.

Shaat (2013) spotlights the impact of E-commerce on the external auditor in Palestine. To accomplish the goal of the study a questionnaire had been built and distributed to the sample of the study which represents the managers of auditing, senior auditors, assistant auditors and accountants whom working in the international accounting firms Palestinian Authority areas.

The results reveal that E-commerce has positive impact toward the external auditor in Palestine and toward implementation risks of audit process.

San et al. (2011) studied the impact of information technology on internal auditing. To accomplish the goal of the study it was depend on the secondary data to collect the required information and data of the research such as journal articles published in magazines and Internet Websites including.

The results show that auditors have role in explain the impact of technology changes on auditing practice beside encourage and support the efforts of providers of systems and new technologies.

Jabali and Nazmy (2011) examined the impact of E-commerce on the audit profession in Jordan. For accomplish the purpose of this study, a questionnaire had been built and distributed to sample of the study which consist of 80 auditors licensed practicing auditing in Jordan selected randomly.

The study suggests a positive impact for E-commerce on the Audit Profession in Jordan. It was found also that there is a need to define the auditors of E-commerce and its institutions and its requirements in order to increase the efficient and effective dealing with auditing.

Kurit (2008) examined the effect of e-commerce practices on the auditing process in Syria. To achieve the goal of the study the author depends on the survey to collect the data from the sample of the study which consisted of 200 accredited Syrian auditors and practitioners. The results indicated that there is a significant effect for e-commerce practices on the auditing process from the point of view the Syrian auditors.

Breslawski (2007) aimed to know the impact of transactional E-commerce on audit risk. The sample of the study consists of 50 CPAs worked for large firms, where a questionnaire had been built and distributed to them to gather the required information.

The results show that there is an impact for transactional E-commerce on audit risk, and the perceived change in overall audit risk is associated with changes in the components of the SAS 55 model.

7. Theoretical Framework

7.1 Electronic Commerce Concept

There is no specific and clear concept of E-commerce that can be referred to, but there are a set of definitions that can be reviewed, there are those who define e-commerce as the process of buying and selling goods over the Internet. Other than buying and selling, many people use Internet as a source of information to compare prices or look at the latest products on offer before making a purchase online or at a traditional store (Naseer & Azad, 2016).

According to Al Basoos (2009), E-commerce consists of the buying and selling of products or services over

electronic systems such as the Internet and other computer networks. While according to Weil and Vitale (2001), from the business process perspective, e-commerce is doing business electronically by completing business processes over electronic networks, thereby substituting information for physical business process.

Amos et al. (2017) illustrate that E-commerce is the use of electronic communications and digital information processing technology in business transactions to create, transform, and redefine relationships for value.

E-commerce is commerce, but it accelerated and enhanced by IT, in particular the Internet. E-Commerce enables customers, consumers, and companies to form powerful new relationships that would not be possible without the enabling technologies. In a few short hours, you can set up shop on the Internet and be instantly accessible to millions of consumers worldwide (Haag & Cummings, 2010, p. 128).

In the aspect of banking electronic commerce: It is the practice of banking operations electronically via the web through the client's connection to the bank web site and refers to operations. Electronic banking operations are meant to provide traditional or innovative banking services through electronic networks that are limited to access to their participants according to the terms of membership determined by banks through one of the outlets on the Internet (Tawfeq, 2004).

E-commerce has a number of characteristics (Rasheed, 2011):

- 1) There is no direct relationship between the two parties in the business process, where both the seller and the buyer meet through the Internet and allows them to this network a high degree of interaction.
- 2) Not relying on paper documents in the execution of transactions, as most of the interaction between the parties is conducted electronically without relying on paper documents, so that the sent electronic message between the parties is the legal basis in the event of any dispute between them.
- 3) The possibility of direct impact on the company's computer systems through what is called electronic data exchange and documentation.
- 4) The ability to interact with more than one source at the same time, where the seller can display the goods and services on a large number of receivers without the need to re-send each time, also the interaction can occur between an individual and a group.

7.2 Auditing Concept

Elders et al. (2010) defined auditing as a process of collecting and evaluating evidence of the information to determine and report the degree of information suitability with the criteria that have been set. Auditing should be carried out by a competent and independent person.

Auditing is the accumulation and evaluation of evidence about information to determine and report on the degree of correspondence between the information and established criteria, Auditing should be done by competent, independent person (Arens et al., 2012, p. 4).

Auditing is a systematic process of objectively obtaining and evaluating evidence regarding assertions about economic actions and events to ascertain the degree of correspondence between those assertions and establish criteria and communicating the results to interested users (Hall, 2007, p. 742).

7.3 Dimensions of Auditing Practices

There are four main dimensions for auditing practice (Amos et al., 2017):

- 1) Independence of Auditors: according to (Tepalagul & Lin, 2015) there are four dimensions, representing four threats to independence, these dimensions are (a) client importance, (b) non-audit services, (c) auditor tenure and (d) client affiliation with audit firms.
- 2) Continuous Auditing: by using technology and automation, continuous auditing methodology enhances the efficiency and effectiveness of the audit process to support real time assurance (Chiu et al., 2018).
- 3) Audit Report/Disclosure: all the companies in different fields have to disclose of their data and information in the audit report.
- 4) Risk Detection and Control: represent the new risks that are directly related To the global risk of auditing and to its practices and these new risks are: (a) inherent risk (b) control risk (c) detection risk.

The Role of E-Commerce on the Auditing Practices:

Accounting and auditing is primarily a social science and it is the science of language numbers, so it is normal to profession of accounting and auditing to be affected by the developments in information technology, which have become one of the most important elements of accounting systems. It is noted that the accounting systems in the

various companies have become dependent on the use of computers, and the complexity of these systems in companies that work in the field of e-commerce (Alomery & Almo'ataz, 2007).

Success Factors of the Audit Process in Light of E-Commerce are: (Pathak, 2003):

- 1) Understanding the required audit process.
- 2) Intensive training for auditors of e-commerce.
- 3) The need of a cumulative experience of the auditors of e-commerce.
- 4) Should enjoy auditor e-commerce should enjoy technical skills and high technological.
- 5) Available all of various auditing tools and systems supporting them.
- 6) Available self-auditor ability to govern vocational specialist.
- 7) The ability of auditor to adapt audit planning procedures in line with the second part of this study on the proposed model.

8. Methodology

This study adopted the descriptive analytical approach through design a questionnaire achieve the purposes of the study and collecting required data from the respondents.

8.1 Selection of the Sample

Random sampling technique was used to determine the sample size of 120 selected from five banks in the north region in Jordan. These banks are: The Housing Bank for Trade and Finance, Union Bank, National Bank of Jordan, Arab Bank and Capital Bank. The questionnaire was distributed among the sample of study including managers, internal auditors and accountants. A total of (100) questionnaire was retrieved that are valid for statistical analysis, formed about 83.3% of overall distributed questionnaires.

8.2 Statistical Techniques Used

The collected data analyzed through using SPSS statistical software, we used the following test:

- Reliability Analysis.
- Descriptive Analysis include: frequencies, percent, mean and standard deviation.
- One sample t- test: to test the study hypotheses.

9. Data Analyses

9.1 Reliability Analysis

Table 1. Reliability analysis

Questions	Cronbach's Alpha
The role of electronic commerce in audits	0.6903
E-commerce factors affecting audit standards	0.7681
The risks of electronic commerce related to auditing	0.9307
Total questions	0.8995

From the table above we not that the range of Cronbach's Alpha was between (69%) and (93.7%), and this value for all the questions was approximately (90%). And these values indicate very good results, because it indicates strong correlation between the questions.

9.2 Descriptive of Sample Member

Table 2. Distribution of sample members according to personal and job variables (n = 100)

Variable	Level	Frequency	Percent
Gender	Male	58	%58
	Female	42	%42
Total		100	%100
Years of working in the bank	1 to less than 5 years	38	%38
	5 to less than 10 years	25	%25
	10 to less than 15 years	24	%24
	15 years and more	13	%13
Total		100	%100

Qualification	Bachelor	82	%82
	Master	18	%18
	Doctorate	---	----
Total		100	%100
Job	Bank manager	8	%8
	Director of Accounts Section	14	%14
	Head of Audit Department	8	%8
	Internal Auditor	13	%13
	Accountant	57	%57
Total		100	%100

From the table above we can note the following:

Gender: 58% of the study sample is male, in contrast the female ratio was 42%.

Years of working in the bank: The majority of the respondents are whom those their years of work experience from (1 to less than 5 years), and their percent was (38%), followed by individuals with (5 to less than 10 years) with the percent (25%), followed by individuals (10 to less than 15 years) with the percent (24%). Finally, the sample members whose years of working in the bank were (15 years and more) and their percent was (13%).

Qualification: The results show that most of the members of the sample are of (Bachelor) qualification, with percent (82%), followed by individuals, who had (master) qualification, and their percent were (18%).

Job: The results show that most of the respondents are in the position of (Accountant), their percent were (57%), followed by individuals who occupy the position of (Director of Accounts Section) with percent of (14%), then those who work as a (Internal Auditor) position with percent of (13%), and finally individuals whose position (Head of Audit Department) and (Bank manager) with percent of (8%).

9.3 Discussing the Study Questions

To discuss the study questions we compute the mean and the standard deviation for the answers of sample's member, the five-level "questionnaire" study (Likert) was used as follows:

1= very disagree

2= disagree

3= middle agree

4= agree

5= very agree

Depended on:

Mean (1- less than 2.33) refer to disagreement.

Mean (2.33- less than 3.66) refer to middle agreement.

Mean (3.66- 5) refer to agreement.

First dimension: (The role of electronic commerce in audits)

Table 3. Mean for member sample about first dimension (n=100)

Nom.	Questions	Mean	S.D
1	Electronic commerce reduces the audit cost paid to the auditor	4.510	0.6741
2	E-commerce contributes to the competitive advantage of auditing firms	4.370	0.7058
3	E-commerce contributes to completion of audits tasks quickly	4.320	0.6946
4	E-commerce contributes to the completion of audits tasks efficiently and effectively	4.240	0.6981
5	Dealing with e-commerce leads to increase the number of auditors specialists dealing with the Internet	4.400	0.7914
Avg.		4.368	0.7128

From the table above we can note the following:

- The range of mean for the first dimension (the role of electronic commerce in audits) was directed towards agreement, where the lowest mean was (4.240) refer to "E-commerce contributes to the completion of audits tasks efficiently and effectively", and this indicated agreement about this aspect, and the highest

mean was (4.510), and this refer to “Electronic commerce reduces the audit cost paid to the auditor”, and this indicated agreement about this aspect.

- The average of the mean was about (4.368) and this indicated agreement about this dimension.

Second dimension: (E-commerce factors affecting audit standards)

Table 4. Mean for member sample about second dimension (n=100) (Accounting information security)

Nom.	Questions	Mean	S.D
6	The Bank identifies individuals who have the authority to trade data and information	4.470	0.6106
7	The Bank provides the necessary protection to maintain all the equipment used	4.390	0.6497
8	The Bank identifies information and sites that are opened through the Internet and locks suspicious sites	4.320	0.6649
9	The Bank's management implements the necessary security measures to maintain the reliability of the accounting system	4.380	0.7625
10	The Bank's management updates the protection methods of the accounting system according to the changes occurring in the electronic trading environment	4.510	0.6276
Avg.		4.414	0.6631

From the table above we can note the following:

- The mean for the second dimension (accounting information security) was directed towards agreement, where the lowest mean was (4.320) refer to “The Bank identifies information and sites that are opened through the Internet and locks suspicious sites”, and this indicated agreement about this aspect, and the highest mean was (4.510), and this refer to “The Bank's management updates the protection methods of the accounting system according to the changes occurring in the electronic trading environment”, and this indicated agreement about this aspect.
- The average of the mean was about (4.414) and this indicated agreement about this dimension.

Table 5. Mean for member sample about second dimension (n=100) (Data electronic exchange)

Nom.	Questions	Mean	S.D
11	The Bank relies on electronic exchange for data to conduct all e-commerce transactions	4.190	0.8372
12	The bank exchanges electronically in order to reduce costs by reducing the use of paper during the execution of the business	4.130	0.7475
13	The bank exchanges electronically to reduce errors resulting from manual data entry	4.220	0.7599
Avg.		4.18	0.7815

From the table above we can note the following:

- The mean for the second dimension (data electronic exchange) was directed towards agreement, where the lowest mean was (4.130) refer to “The bank exchanges electronically in order to reduce costs by reducing the use of paper during the execution of the business”, and this indicated agreement about this aspect, and the highest mean was (4.220), and this refer to “The bank exchanges electronically to reduce errors resulting from manual data entry”, and this indicated agreement about this aspect.
- The average of the mean was about (4.18) and this indicated agreement about this dimension.

Table 6. Mean for member sample about second dimension (n=100) (Electronic signature)

Nom.	Questions	Mean	S.D
14	The Bank relies on electronic signature to increase the level of security and privacy of its customers	4.380	0.7491
15	The electronic signature increases the trust of the auditors in data and information exchanged electronically	4.350	0.6723
16	An electronic signature contributes to the disclosure of any fraudulent manipulator in financial transactions	4.180	0.8805
Avg.		4.303	0.7673

From the table above we can note the following:

- The mean for the second dimension (electronic signature) was directed towards agreement, where the lowest mean was (4.180) refer to “An electronic signature contributes to the disclosure of any fraudulent manipulator in financial transactions”, and this indicated agreement about this aspect, and the highest mean

was (4.380), and this refer to “The Bank relies on electronic signature to increase the level of security and privacy of its customers”, and this indicated agreement about this aspect.

- The average of the mean was about (4.303) and this indicated agreement about this dimension.

Table 7. Mean for member sample about second dimension (n=100) (Electronic payment)

Nom.	Questions	Mean	S.D
17	The Bank offers secure online payment methods	4.350	0.7961
18	The Bank makes sure that transactions exchanged with electronic money are conducted only between the related parties	4.170	0.8535
19	The Bank ensures that the exchange of the various transactions relates to the authorized goods and services only	4.180	0.8805
Avg.		4.233	0.8434

From the table above we can note the following:

- The mean for the second dimension (electronic payment) was directed towards agreement, where the lowest mean was (4.170) refer to “The Bank makes sure that transactions exchanged with electronic money are conducted only between the related parties”, and this indicated agreement about this aspect, and the highest mean was (4.350), and this refer to “The Bank offers secure online payment methods”, and this indicated agreement about this aspect.
- The average of the mean was about (4.233) and this indicated agreement about this dimension.

Third dimension: (The risks of electronic commerce related to auditing)

Table 8. Mean for member sample about third dimension (n=100)

Nom.	Questions	Mean	S.D
20	Lack of the auditors knowledge on the concepts of information technology and how they are used in auditing	3.940	1.1531
21	Inadequate auditing standards with developments related to e-commerce operations	3.800	1.2227
22	The unused of audit systems to protect digital information	3.790	1.1746
23	The auditor does not confirm the reliability of data and information exchanged on websites through e-commerce	3.760	1.2154
24	The auditor does not confirm the confidence in the financial statements and reports that the Bank publishes and discloses on its website	3.750	1.2092
25	Lack of the auditors knowledge of the nature of the websites and how it design and its work and protect	3.750	1.2583
26	Lack of infrastructure needed by communication and information networks	3.640	1.0591
27	Lack of the necessary techniques for electronic commerce settings according to auditing standards	3.790	1.0569
Avg.		3.778	1.1687

From the table above we can note the following:

- The mean for the third dimension (The risks of electronic commerce related to auditing) was directed towards agreement, where the lowest mean was (3.640) refer to “Lack of infrastructure needed by communication and information networks”, and this indicated agreement about this aspect, and the highest mean was (3.940), and this refer to “Lack of the auditors knowledge on the concepts of information technology and how they are used in auditing”, and this indicated agreement about this aspect.
- The average of the mean was about (3.778) and this indicated agreement about this dimension.

9.4 Test of Hypotheses

Ha1: There is a significant role of E-commerce in auditing process in the Jordanian commercial banks.

Table 9. Results of one sample T- test for the role of E-commerce in auditing process

Item	t- value	mean	Sig.
the role of E-commerce in auditing process	28.671	4.3680	0.000

From the table above we can note that there is a role for E-commerce in auditing process, where, the significant value was (0.000), and this value is significant at ($\alpha \leq 0.005$). So we reject null hypothesis, and accept the alternative hypothesis that says: There is a significant role of E-commerce in auditing process in the Jordanian commercial banks.

This result consistent with Amos et al. (2017) that revealed that E-commerce has significant effect on auditing practices in selected firms in Rivers State, and Kurit (2008) that indicated there is a significant effect for e-commerce practices on the auditing process from the point of view the Syrian auditors.

Ha2: The Jordanian commercial banks have a significant role in dealing with the E-commerce factors (accounting information security, electronic data interchange, electronic signature and electronic payment) that affect the audit criteria.

Table 10. Results of one sample T- test for the role of Jordanian commercial banks in dealing with the E-commerce factors

Item	t- value	mean	Sig.
accounting information security	36.062	4.4140	0.000
electronic data interchange	20.444	4.1800	0.000
electronic signature	23.078	4.3033	0.000
electronic payment	19.484	4.2333	0.000

From the table above we can note that Jordanian commercial banks have a significant role in dealing with all E-commerce factors that affect the audit criteria (accounting information security, electronic data interchange, electronic signature and electronic payment), where, the significant values for these factors were (0.000), and these values were significant at ($\alpha \leq 0.005$). So we reject null hypothesis, and accept the alternative hypothesis that says: The Jordanian commercial banks have a significant role in dealing with the E-commerce factors (accounting information security, electronic data interchange, electronic signature and electronic payment) that affect the audit criteria.

This result consistent with San et al. (2011) that supports the increasing dependence on technology to accomplish auditing activities, beside encourage the efforts of providers of systems and new technologies.

Ha3: Jordanian commercial banks face many types of E-commerce risks associated with auditing.

Table 11. Results of one sample T- test for the types of E-commerce risks associated with auditing

Item	t- value	mean	Sig.
types of E-commerce risks associated with auditing	8.092	3.7775	0.000

From the table above we can note that Jordanian commercial banks face many types of E-commerce risks associated with auditing, where, the significant value was (0.000), and this value is significant at ($\alpha \leq 0.005$). So we reject null hypothesis, and accept the alternative hypothesis that says: Jordanian commercial banks face many types of E-commerce risks associated with auditing.

This result agree with Naseer and Azad (2016) that revealed that conclude the need for the implementation of risk based internal control systems, when commercial transactions are to be made electronically. Also the result agree with Jabali and Nazmy (2011) that found the need to define the auditors of E-commerce and its requirements, and the need for increased training of technological auditors. In additional to that the current results consistent with Shaat (2013) that show that the E-Commerce has an impact on the implementation risks of audit process.

10. Results

This study aimed to examine the role of E-commerce on the auditing practices in the Jordanian banking sector in the North region, in general our result encourages the customers from other countries to deposit and invest their money in the Jordanian commercial banks, which lead to boom the economy, due to safety and accurate banking system, and we can detailing the results as follow:

- 1) There is a significant role of E-commerce in auditing process in the Jordanian commercial banks, where, the most important role of E-commerce that played in auditing is that reducing the audit cost paid to the auditor, with highest mean (4.510).

- 2) The Jordanian commercial banks have a significant role in dealing with accounting information security that affects the audit criteria. It was found that the most important role for these banks regarding the accounting information security was updating the protection methods of the accounting system according to the changes occurring in the electronic trading environment, with highest mean (4.510).
- 3) The Jordanian commercial banks have a significant role in dealing with electronic data interchange that affects the audit criteria. It was found that the most important role for these banks regarding the electronic data interchange was electronically exchanges to reduce errors resulting from manual data entry, with highest mean (4.220).
- 4) The Jordanian commercial banks have a significant role in dealing with electronic payment that affects the audit criteria. It was found that these banks offer secure online payment methods, with highest mean (4.350).
- 5) Jordanian commercial banks face many types of E-commerce risks associated with auditing. The most risk that they faced was the lack of the auditor's knowledge on the concepts of information technology and how they are used in auditing, with the highest mean (3.940). On the other hand the lowest E-commerce risk that the Jordanian commercial banks faced was the lack of infrastructure needed by communication and information networks, with the lowest mean (3.640).

11. Recommendations

According to the results the study recommends the following recommendations:

- 1) Conduct training courses for auditors and accountants in Jordanian commercial banks regarding the concepts of information technology, how to use them in auditing and the nature of the websites and how it design.
- 2) To encourage Jordanian commercial banks to follow up the auditing standards and developments in accordance with developments in dealing with electronic commerce, besides providing necessary techniques for electronic commerce settings according to auditing standards.
- 3) Jordanian commercial banks should use the necessary auditing systems to protect digital information.
- 4) The need for the commitment of auditors in the Jordanian commercial banks to confirm the reliability of the exchange of electronic commerce data and information on the Bank's website.
- 5) It's very important that Jordanian commercial banks try to improve the infrastructure needed by communication and information networks.

References

- Al Basous, H. (2009). Commercial Law. *International Review of Law Computers & Technology*, 13(2).
- Al-jabali, M., & Nazmy, E. (2011). The Impact of E-commerce on the Audit Profession in Jordan. *European Journal of Economics, Finance and Administrative Sciences*, 30, 95-105.
- Al-jabali, M., & Tawfeq, R. (2014). The Relationship between the Information Systems of Accounting, Auditing, And How to Provide Reliable Information to Characterize the Service Auditor. *Global Journal of Commerce & Management Perspective*, 3(2), 95-101.
- Alomery, M., & Almo'ataz, E. (2007). Impact of e-commerce on audit planning: Field study on audit offices in the Kingdom of Saudi Arabia. *Journal of King Abdulaziz University: Economics and Management*, 21(2), 151-182 .
- Amos, N., Nnate, E., & Akpos, Y. (2017). Effects of E-Commerce on Auditing Practices of Selected Firms in Rivers State. *Advance Research Journal of Multi-Disciplinary Discoveries*, 16(1), 30-35.
- Arens, A., Elder, J., & Beasley, S. (2012). *Auditing and Assurance Services – An Integrated Approach* (14th ed). Prentice Hall.
- Ariyani, Y., & Maria, E. (2014). E-Commerce Impact: The Impact of E- Audit Implementation on the Auditor's Performance. *Indian Journal of Commerce & Management Studies*, (3), 1-7.
- Breslawski, S. (2007). The Impact of Transactional E-Commerce on CPAs' perception of Audit Risk: Preliminary Results. *IRMA International Conference*, 601-604.
- Chiu, V., Chan, D., & Vasarhelyi, M. (2018). Innovation and Practice of Continuous Auditing. *Emerald Publishing Limited*, 271-283.

- Elders, R. J., Beasley, M. S., & Arens, A. A. (2010). *Auditing and Assurance Services- An Integrated Approach* (13th ed.). Pearson.
- Haag, S., & Cummings, M. (2010). *Management information systems for the information age* (8th ed.). McGraw-Hill.
- Hall, J. A. (2007). *Accounting information systems* (5th ed.). Thomson South Western.
- Kurit, I. (2008). The Impact of E-Commerce on Auditing Practices: A Practical Study on Syrian Auditors. *Journal for Research and Scientific Studies -Economic and Legal Sciences*, 30(1), 89-108.
- Mazza, T., & Azzali, S. (2016). Information Technology Controls Quality and Audit Fees: Evidence From Italy. *Journal of Accounting, Auditing & Finance*, 33(1), 123-146. <https://doi.org/10.1177/0148558X15625582>
- Naseer, M., & Azad, M. (2016). Analysis of Internal Control System on E-Commerce. *International Journal of New Technology and Research*, 2(3), 33-36.
- Pathak, J. (2003). *A Model for Audit Engagement Planning of E-Commerce, Paper No. 373763*. Retrieved from <http://www.ssrn.com>
- Rasheed, N. (2011). The Role of the Auditor in Increasing Confidence in the Published Accounting Data on the Internet in E-Commerce Environment. *Tikrit Journal of Administrative and Economic Sciences*, 7(23), 173-197.
- San, L., Gopalan, M., Mohamed, Z., Seetharaman, A., & Moorthy, M. (2011). The impact of information technology on internal auditing. *African Journal of Business Management*, 5(9), 3523-3539.
- Saputra, W. (2016). Auditing Process on Electronic Commerce System. *Akuntabilitas: Jurnal Ilmu Akuntansi*, 9(1), 1-12. <https://doi.org/10.15408/akt.v9i1.3581>
- Shaat, M. (2013). *The Impact of E-Commerce on the External Auditor Work "Applied Study on the International Accounting Firms Working in Palestine"*. Master Thesis, The Islamic University of Gaza.
- Tarek, M., Mohamed, E., Hussain, M., & Basuony, M. (2017). The Implication of Information Technology on the Audit Profession in Developing Country: Extent of Use and Perceived Importance. *International Journal of Accounting & Information Management*, 25(2), 237-255. <https://doi.org/10.1108/IJAIM-03-2016-0022>
- Tawfeq, M. (2004). The impact of Electronic Commerce on the Development of Accounting Information Systems: A Test Study on the Application of the Banking Sector to the Means of Electronic Payment for Money and Its Services Related to the Bank's Immediate Systems.
- Tepalagul, N., & Lin, L. (2015). Auditor Independence and Audit Quality: A Literature Review. *Journal of Accounting, Auditing & Finance*, 30(1), 101-121. <https://doi.org/10.1177/0148558X14544505>
- Weill, P., & Vitale, M. R. (2001). *Place to space: Migrating to e-business models*. Boston: Harvard Business School Press.

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).