Journal of Financial, Accounting and Managerial Studies
ISSN 2352-9962/E-ISSN 2572-0147
Vol 09, Number 02 – Juin 2022

OEB Univ. Publish.

The impact of the risk of electronically processing accounting data on the quality of the auditor's reports External Study case of External Auditor in Ouargla-Algeria

Khaled REDJEM [1]*, OUDDANE Bachir[2]

[1] Farhat Abbas University Setif 01 (Algeria), Redjemkhaled@gmail.com
[2] Kasdi Merbah University Ouargla (Algeria), bachirouddane@gmail.com

Date of receipt25-12-2021 Date of revision: 20-04-2022 Date of acceptation: 30-05-2022

Abstract

This study aims to identifying the risks of automatic processing of accounting data and their impact on external audit quality. The study community consists of the offices of the governors of the accounts (external auditors) in the state of Wurgla-Algeria, where a questionnaire was distributed to a sample of 31 auditors processed using the SSPSS program. The interview was also used for discussion on the subject, and the study found that there was an impact on the quality of external audit on the risk of automatic processing of accounting data, and that the risks to persons are the most affecting the quality of the external auditor's work. The study made a number of recommendations, the most prominent of which were the awareness of auditors regarding the risks and ways of dealing with them, and their impact on the quality of the auditing profession through training courses in this field.

Keywords: External auditor, risk of automatic processing of accounting data, quality of external audit
Jel Rating: M15; M42 M41

ملخص

Cette étude vise à identifier les risques du traitement automatique des données comptables et leur impact sur la qualité de l'audit externe. La communauté d'étude est constituée des bureaux des gouverneurs des comptes (auditeurs externes) de l'état de Wurgla-Algérie, où un questionnaire a été distribué à un échantillon de 31 auditeurs traités à l'aide du programme SSPSS. L'entretien a également été utilisé pour échanger sur le sujet, et l'étude a constaté qu'il y avait un impact sur la qualité de l'audit externe sur le risque de traitement automatique des données comptables, et que les risques pour les personnes sont les plus affectant la qualité de l'audit. travaux de l'auditeur externe. L'étude a formulé un certain nombre de recommandations, dont les plus importantes concernaient la sensibilisation des auditeurs aux risques et aux moyens d'y faire face, et leur impact sur la qualité de la profession d'auditeur à travers des formations dans ce domaine

Jel Cod: M15; M42 M41.

* Corresponding Author

I— Introduction:

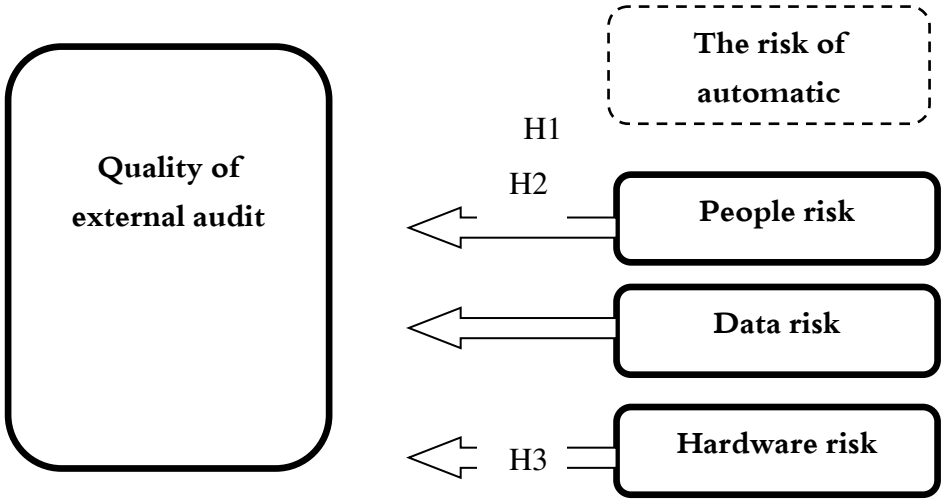
The extensive use of information technology and communication has many risks to the security and integration of electronic accounting information systems, since the evolution of automated accounting processing techniques has not been accompanied by a similar development in the practices and controls, nor has a similar development in the knowledge and experience of those operating in such facilities. As a significant control over accounting in general, this profession is highly interested in making it more good than it is. With this new format of automated data processing, it was necessary to improve and upgrade the auditor's ability to cope with and understand the environment in which processing takes place, as audit offices became confronted with problems and risks as a result of technological development, which required auditors to be aware of the types of risks associated with automated data-processing systems. They should be armed with the techniques and tools necessary to detect and avoid those risks so that the objectives of auditing can be achieved effectively and efficiently.

The following problems can therefore be raised:

How does the risks associated with automated processing of accounting data affect the quality of the external auditor's work?

Study form:

The autonomous variable The slave variable



Source: Numbers of researchers

The search aims to:

- Risk assessment associated with the automated processing of accounting data;
- Highlight security policies to reduce risks;
- Identifying the audit process under the automatic processing of accounting data;
- Identify the risks that most affect the quality of the external auditor's work under automated processing of accounting data.

Study hypothesis:

- There is an impact on the quality of the external audit of the risk of persons for automatic processing;
- The data risk for automated processing has an impact on the quality of the external audit;
- The hardware risks of automated processing have an impact on the quality of the external audit.

Previous studies:

- (Karim ELDJOUHAR.2010) :**The study on the quality of external auditor's work, the objective** of which is to highlight the impact of it on auditing, the types of risks that can be faced, and how these risks affect auditor's quality of work standards. Researchers have relied on the descriptive approach using a questionnaire distributed to a sample of 60 audit offices.researchers have found that the most risk to be faced is exposure risk due to inadequate control procedures associated with the use of technology in the audit process, and that the most sensitive quality measures of technology risk are efficiency and merit.
- **(Fatma Nadji laabidi 2012): the risks of computerized accounting information systems and their impact on the audit process,** the study aimed at identifying the risks of using computerized accounting information systems and their impact on the effectiveness of the audit of the public shareholding companies listed on the Amman Stock Exchange. The researcher relied on the descriptive approach based on the questionnaire distributed to a sample of 203 financial managers, internal auditors and external auditors. The study found a statistically significant impact on the environmental risks of computerized accounting information systems, entry risks, data operation and computerized accounting information system outputs on the effectiveness of auditing in Jordanian public-shareholding companies.
- **Aladdin Saleh Mahmoud 2011 Study: The impact of the risk based audit approach on the quality of external audit,** the study aimed at determining the effects of the audit risk approach on the quality of external audit at Jordan's

audit offices and making useful recommendations to audit firms on the pros and cons of applying the audit risk-based approach. The researcher relied on the descriptive approach using 165 questionnaires distributed to a sample of 13 audit offices, and concluded that there was a impact on the audit risk concept on the value added to the customer and the reduction of audit risk. In directing external audit procedures to more important matters in auditing, supporting the independence of the auditor and the checks and in the effective application of quality control to external audits.

- **(Anantha Sayana 2003); using Cats to support is audit:**
- The study aims to strengthen the audit of accounting information systems using electronic auditing techniques, where the researcher used the descriptive approach to the study.
- The researcher concluded that using computer-assisted auditing techniques enabled the consolidation of the audit of electronic accounting information systems, because of their capabilities in data analysis, assessment of network security and evaluation of database management systems security.
- **EZENDU Ariwa (2008) Financial Informatic Entertainment and Audit risk in Development Economy.**
- The study aims at assessing the impact of audit risk accounting information systems in Nigeria, and to reveal the impact of financial information projects and audit risks on the development of the economy sector, using the descriptive approach using the questionnaire distributed to a sample of Nigeria's audit offices.
- The researcher found that the risk of accounting information systems negatively affects audit offices' performance, because auditors at these offices are unaware of the nature of the risks that information systems that relate to audits and therefore are unable to handle and process them.
- **Manhel Maged Ahmed 2011, Re- Engineering Audit Profession in the Context of Information Technology**
  This study aims at demonstrating the quality of services provided by the auditing profession after reengineering its operations in Iraq under: information technology, the researcher used the descriptive method using a questionnaire that distributed a sample of auditors in Iraq and distributed 100 resolutions.
- The answers to the sample for finding a very strong correlation between the two dimensions of the study proved the first dimension of information technology, and the second dimension is the re-engineering of the accountancy profession in Iraq.

I.1. Automated accounting data processing systems:

The term SARD is synonymous with computerized accounting information systems known as "accounting data, which includes all accounting branches and which are electronically processed at high accuracy, to obtain results used to make decisions for all beneficiaries, with minimal time and effort". (**Assad Mohammed Ali Wahab ,2011, P19**)

I.2. Functions of automated accounting data processing systems

The development of computerized accounting information systems at an enterprise has many of the benefits to be gained by performing its functions, whether they are created from zero or as a result of the conversion of traditional manual accounting systems into computerized accounting systems, resulting from the computerization of manual systems.

Among the most important functions of these systems are: (**Fayadh Hamza Ramli 2011 p67**)

- Collection, compilation and indexing of accounting data;

– Review, input and storage of accounting data in the system;

The operation and processing of accounting data, for the transfer of information that serves the objectives of the enterprise;

– Storage of accounting information and management of the data bank;

– the function of transferring and communicating information to its users, and viewing it in the appropriate manner;

– Data monitoring and protection function, where data is protected from errors, tampering, threats and threats, and data accuracy and integrity, thereby providing accurate information.

I.3. **Risks of automatic processing of accounting data**

Computer computations and logic are performed by efficient and rapid comparisons, stores large amounts of data and can be retrieved very quickly, and helps in the preparation of various reports very quickly, despite these many and varied computer advantages in an electronic accounting environment. In this requirement we will address the types and causes of risk of automatic processing of accounting data, and the risks can be summarized in **Table 01.** (Assad Mohammed Ali Wahab 2011 p68)

I.4. **Procedures for reducing the risk of electronic information systems**

There are many ways and procedures that an organization can use to reduce risks in an it environment: (**Abdel Wahab Nasr Ali 2003, p237**)

1-**Encryption**: A method used to ensure the confidentiality, privacy and integrity of data exchanged between different parties to ensure that unauthorized parties do not know the data, when the sender uses a specific key to encrypt the data and converts it from the normal, understandable form

into an encrypted format that cannot be read and understood. It then sends it to the addressee, who in turn uses a key to decipher the code and return the data from the encoded formula back to the normal formula.

The most important of these is to use virus detection software, and to use virus detection software and update it continuously, and to open a file only after it is verified.

3-**Backup:** Backup data and software is prepared to address the potential loss or misrepresentation of data or software due to operating errors or the result of a software intrusion. (Khaled redjem, 2018 p137)

4-**Firewalls:** A family of interconnected programs located on the border of a computer network, the purpose of which is to verify the identity of anyone who attempts to enter the system, i.e. entering their name and password, which is matched with the name and password saved to the database to identify authorized persons and access the system.

Firemen are also used to identify the data each user can access based on the nature of their duties and responsibilities within the company.

5-**Password Manager** (Password): Organizations often follow regulatory measures to help users choose passwords that are difficult to guess, so that the company makes it difficult for unauthorized and pirate parties to guess passwords to break the enterprise information system, including:

—forcing the user to change their password periodically;

—set a minimum number of characters that make up the password;

—make the user aware of all letters, numbers, and other symbols in their password, which makes it difficult to guess using the pirate software that is intended for this purpose; (Khaled redjem, 2018, 380)

—make users aware that passwords should be avoided;

Awareness of the user of the need to keep their word confidential;

—Disconnect the end-to-end connection with the party entering the wrong password three times in a row.

I.5-external audit: External audit is a process by an independant person through examination of financial statements and accounting records with a view to giving an opinion on the fairness and truthfulness of financial statements and annual accounts and their compliance with accounting standards. **(Nasr Saleh Mohamed, 2011, p. 158)**

I.6. The Governor of Accounts of Algeria: Given the importance of the profession of the Governor of Accounts, the Algerian legislature has been keen to organize it well, so that it can perform well, as stated in Act No. 91-08 of 1991 concerning the profession in question. The law was repealed by Act 10-01 of 29 June 2010, which gave a new picture to practitioners of the auditing profession in Algeria, which set out the conditions that must be met in a person who is a reviewer for practicing the profession The references, as well as the author of this Act, have a set of decrees and decisions, including what established professional conduct and what the auditors must demonstrate, and what conditions must be met for entry into the profession. **(Law 10-01 of 11/07/2010)**

I.7. Audit under automated processing of accounting data:

As stated in International Standard 401 (Profiling of a computer Information Systems Environment), the overall objective and scope of the audit process do not change in a computerized information system environment, however, computer use will alter the processing, archiving and reporting of financial data, and may affect the accounting system and internal control system of the facility.

It is also the process of collecting and evaluating evidence to determine whether an electronic operating system maintains assets and maintains full data, achieves enterprise goals with a high degree of efficiency, and uses enterprise resources effectively**. (Thana El Qabbani ,2008 ;p 223)**

Based on the above definition, the objective of an audit under automatic processing of accounting data should be to focus on verifying: [1]

Appropriate accounting information systems that provide information for the efficient preparation of financial statements and sound reports.

An effective system of internal control that prevents or reduces errors and irregularities. (Latifa Al-Fargani, 2016,p4)

I.8. The effect of automatic processing of accounting data on the audit process The effect of automatic processing of accounting data on evidence and on Scientific qualification and scientific experience of the auditor We will look at the impact of automatic data processing on evidence and from Then on the scientific qualification and scientific experience of the auditor

I. impact of automatic processing of accounting data on evidence:

The concept of evidence in electronic auditing was not different from manual auditing, but the difference was in the nature of the evidence on which the auditor could rely, as the automated processing of accounting data had a significant impact on the procedures for collecting and quality of evidence and we could state this effect through the following points: (Hussein Yusuf Al-Qadi 2008 p436)

a) **The appearance of electronic evidence**: This means any information that has been configured, sent, processed, recorded, or maintained

electronically, on which the auditor relies to verify the operations and values in the financial statements.

b) **Controls on the auditor's reliance on electronic evidence**: For the auditor to rely on electronic evidence, consider:
To be well aware that the extent to which the electronic manual can be adopted depends primarily on the effectiveness of the internal control system;
–to deal well with the ongoing impact of it on traditional evidence.

c) **Documentation of information electronically under automated processing of accounting data**: Most documentation is electronic and the auditor should accept written information and electronic information as a new form of documentation, in the light of internal controls that ensure the security, preservation and immutability of the information.
The appropriate evidence for the automatic processing of accounting data is electronic evidence, including electronic documents, electronic signature, electronic fingerprint, and information safety control.

9. The effect of automated processing of accounting data on the scientific qualification and experience of the auditor:

The auditor should have scientific and multiple experience on all aspects and ways related to the various audits, on one hand and on the other hand, and due to the continuous increase in the demand for information technology in all areas of business, the institution is working to create integrated functions for the information technology staff, so the credibility of the processing The data mechanism depends on the ability of the institution to appoint individuals or consultants with specialized expertise, in information technology, as it has become necessary to train on how to use and deal with information technology by the auditor, especially dealing with different software that can be used by the institution to read its records and reports Which requires the auditor to have the ability to deal with these elements so that he has specialized skills and high competencies that can be acquired through knowledge and training courses.(Ayman Mohammed Nimr Al-Shunty 2007,p 341)

9. The auditor's assessment of risks in an electronic data processing environment:

10. The study of the internal control system and the measurement of the degree of risk represents the starting point and before planning the audit process, and according to the International Standard on Auditing No. (400), the auditor must assess the material risks and control risks of the material aspects of the material data in the environment of the electronic information system, because it may have a potential impact general and specific to material misstatement of financial statements, for example the following**:** (**Asaad Muhammad Ali Wahab,2011, p 71-72.)**

- Errors of programmer personnel (program developer, hardware operator, system user);
- hardware and software malfunctions (software, maintenance, hardware);
Cheating and manipulation (file sources, spyware, software modification, viruses).
In light of this, the auditor determines the procedures that must be taken into account to collect the appropriate evidence, and when the institution uses electronic accounting instead of the manual system in its work, the auditor examines the internal control systems of automated systems to identify weaknesses and strengths to determine the size of his tests and the degree of risk that can to be subjected to the audit process.

II - Method and Tools:

In our study, we relied on the descriptive approach, and a questionnaire was distributed to a sample of 31 external auditors, in addition to conducting an interview with the study sample to discuss some points that could not be confirmed using the questionnaire only, as the questionnaire was divided into two axes as follows:
- The first axis: personal information (gender, age, experience, ... etc.)
The second axis: the impact of automated processing risks on the quality of the external audit
-The second section included 18 risks of automated processing of accounting data, divided into three dimensions (people-related risks, data-related risks, and devices-related risks), each dimension containing 6 risks. somewhat ineffective, ineffective).
The following statistical measures were used:
- Alpha Crombach coefficient to check the stability of the measuring instrument;
-Frequency distribution, the percentage of variables;
-Arithmetic mean, standard deviation, dispersion ratio;
-One Way ANOVA test.

III: Discussion

1- Discussing the results of the first dimension: risks related to people
Based on the results of the questionnaire and the interview, it was concluded that people-related risks have the most impact on the quality of the external audit process, because the employee plays the importance of operating the automated system for accounting data. Any mistake from him, whether intentionally or unintentionally, will directly affect the work The external auditor, especially if there is manipulation by the employees of the accounting

data, as most of those who manipulate are aware of how to operate and distribute the outputs and are aware of the weaknesses in the system and they are in a position to make deliberate changes to the programs, whether by making restrictions and bonds Illegal or making modifications to the essential account balances where it is difficult to detect them, as well as for the risks of overlapping powers, which is represented by one of the users making movements that are not within his powers through the system used.

From here, the auditor must make sure that the authorities are linked to the functional structure in the system and that each user is given the appropriate permissions for his work, as well as the effectiveness of monitoring the users' access through the presence of the password and the presence of inspection procedures for attempts to unauthorized access to the files.

2- Discussing the results of the second dimension: data-related risks

Based on the results of the questionnaire and the interview, it was found that data-related risks affect the quality of the external audit, as these risks are caused by the misuse of security barriers by institutions to protect their systems, where manipulation occurs in the data on the computer and it is difficult to know who the perpetrator or the file affected by the change, of course This affects the opinion of the external auditor, as well as the failure to protect the system from penetration by other programs (viruses), especially in the case of the presence of the Internet, causing the external auditor to be unable to access the data he needs, especially if the evidence of an electronic nature here increases the possibility of losing it Or misrepresentation, from here the auditor must ensure that the institution uses effective anti-viruses, as well as the use of security barriers to protect the system from illegal access to data.

3- Discussing the results of the third dimension: the risks related to the devices

Based on the results, it was found that the risks related to people moderately affect the quality of the external audit, here the impact is in terms of the possibility of losing information on computers due to lack of protection or failure to perform backup, especially after the emergence of the so-called audit without papers and total dependence on computer systems In the event of the loss of data on the computer, whether due to a failure of the devices due to a power outage or a defect in it or others, this negatively affects the task of the external auditor, from here the auditor must ensure the effectiveness of the security backup system so that it is in different and safe places for fear of Another risk that can occur is the theft or leakage of that data.

4- Discussing the results of the question related to mentioning other risks that affect the quality of the external audit that are not mentioned in the questionnaire:

The most important risks mentioned by the respondents were:

- Threat of malicious access to the Internet;
-Reliance on improper pre-made programs;
-Total dependence on computer systems;
-Inefficiency of internal control procedures;
- Issuing commands to the computer in the wrong way, i.e. wrongly operating the data;
- Ineffective and/or nonexistent internal audit.

IV. conclusion:

The study mainly examined the impact of the risk of automatic processing of accounting data on external audit quality, by learning trends in the opinions and profession about the risks affecting the quality of reports, whether they hamper the external auditor's work, and attempting to classify any risks that are more prevalent and influential and have reached the following conclusions:

- The auditor must have a sufficient understanding of the audit facility's accounting system and internal control system for the purpose of planning and executing the audit efficiently and effectively;
- The automatic processing of accounting data is accompanied by many risks, the most important of which is the manipulation of data by system operators, as well as the risk of security intrusion and system integrity in order to destroy or misrepresent data by unauthorized persons, whether employees or parties outside the organization.
- Loss of confidence in automatically processed accounting data due to easy access and disinformation;
- The auditor has a great difficulty planning the audit under automated data processing due to the high risk associated with it;
- The auditor must pass a special training and qualification program, focusing on familiarity with computer and programming concepts;
- The risks to people are the most significant to the quality of external auditing;
- The following risks are the most significant to the outside auditor's work:
    - The powers of each system staff member are not defined;
    - Destroy and misrepresent data on a computer;
    - Hardware failure and no backup.
- The degree of risk in the automated accounting data processing system controls the size and nature of the sample that the auditor reviews;
- The Chief of Data Processing Section (AIO) is the ultimate responsibility for testing all software used in data processing, and the auditor is to verify that there

are proper procedures for approving software, and to ensure that the accounting service staff follow these procedures during the processing of accounting data.

– Supplements:

- **Table 1 represents the risk rating of automatic processing of accounting data**

View	Types of risk
From its source	Internal risk: Facilities employees are the primary source of internal risk.
In terms of the cause	External risks: Like information pirates and competitors or they may be natural disasters.
In terms of the deliberate	Human element: Mistakes made by people intentionally or unintentionally.
In terms of the effects	Risks of non-human element: Caused by natural disasters to which humans have no relation.
Risks in relation to the stages of the system	Risks of intentional behavior: By people for cheating, manipulating, and stealing.
In terms of purpose	Risks of unintentional behavior: By people due to ignorance and lack of experience.

- **By researchers**

- **Table 2 represents the facsimile factor**

Domain	Vacuum
18	**0.857**

- Source: Prepared by researchers based on SPSS output

	Scale	Not effective	Somewhat unimpressive	Somewhat influential	Effective	Weighted average	Order	Standard deviation	General direction
The lack of competence and experience of staff members who process accounting statements	Repeat %	0	1	10	20	3.52	2	0.558	Effective
2-Disclosure of		0	3.2	32.3	64.5				

information to unauthorized parties	Repeat	5	10	8	8	2.61	6	1,054	Somewhat influential
Illegal access to accounting data by employees or Unauthorized persons	%	16.1	32.3	25.8	25.8	3.32			
	Repeat	3	3	6	19		4	1,013	Effective
4-engage multiple employees in the same password	Repeat	Not effective	Somewhat unimpressive	Somewhat influential	Effective	Weighted average	Order	Standard deviation	General direction
	%	0	1	10	20	3.52	2	0.558	Effective
5. Non-separation of functions		0	3.2	32.3	64.5				

- Table 3 shows the sample's answer results on statements The first dimension
- Source: Prepared by researchers based on SPSS output
- **Table 4) shows the sample population's answer results on the second dimension**

Dimension 2: Data risk	Scale	Not effective	Somewhat unimpressive	Somewhat influential	Effective	Weighted average	Order	Standard deviation	General direction	Dispersion ratio
Copy programs from the system without permission	Repeat	3	11	9	8	2.7	6	0.973	Somewhat Influential	36.03
Making illegal	%	9.7	35.5	29.0	25.8		2		Effec	26.1

modifications to accounting programs	Repeat	2	2	10	17	3.36		0.877	tive	0
9-destroy or misrepresent the accounting data on the computer	%	6.5	6.5	32.3	54.7	3.39	1	0.882	Effec tive	26.0 1
	Repeat	2	2	9	18					
10- Copy or steal the accounting data on the computer	Repeat	3	11	9	8	2.84	5	0.969	Som ewha t Influ entia l	34.1 1
	%	9.7	35.5	29.0	25.8	3.23				
11. Not using antivirus software	Repeat	2	2	10	17		4	0.956	Som ewha t Influ entia l	29.5 9
12. Not protecting software from external piracy	%	6.5	6.5	32.3	54.7	3.35	3	0.798	Effec tive	23.8 2
Total (dimension 2)						3.14		0.909	Som ewha t Influ entia l	28.9 4

- Source: Prepared by researchers based on SPSS output

- **Table 5 shows the results of sample individuals' answers to the dimension Third**

Dimension 3: Related risks With devices	**Scale**	**Not effective**	**Somewhat unimpressive**	**Somewhat influential**	**Effective**	**Weighted average**	**Order**	**Standard deviation**	**General direction**	**Dispersion ratio**
13. No file archive settin	Repeat	4	3	11	13	3.06	3	1,0	Somewhat Influential	33.69

14. There is a defect in computers used for d processi	%	12.9	9.7	35.5	41.9	3.42	2	0.6	Effective	18.12
	Repeat	0	2	14	15					
15—Hardware failure and back	%	10	6.5	45.2	48.4	3.52	1	0.6	Effective	19.23
	Repeat	32.3	3	9	19					
16. No computer environm	Repeat	6	9.7	11	13	2.26	5	1,1	Somewhat Influential	49.77
	%	19.4	9	35.5	41.9					
17- do not perform rout maintenance on the equipm	Repeat	9	29.0	14	15	2.42	4	1,025	Effective	42.35
18—No alternative pov supplies in case of power fail	%	29.0	12	45.2	48.4	2.16	6	1,003	Effective	46.43
Total (Third dimension)						2.80		0.913	Somewhat Influential	32.60

- Source: Prepared by researchers based on SPSS output

- **Table 6 the study sample answer differences on the impact of automatic processing risks to accounting data on external audit quality based on professional experience.**

Variable	F value	Degree of freedom	Statistica significan	Statistical decision
Scientific experience	2,028	19	0.115	Accept a numerical hypothesis

- Source: Prepared by researchers based on SPSS output

- **Table 7 lists the sample answers for the study with respect to The risk of automatic processing of accounting data has an impact on the quality of external auditing By position**

Variab	F val	Degree of freedo	Statistic significa	Statistic decisi
0.771	Accept a numerical hypothesis	19	Position	0.687
		11		

- Source: Prepared by researchers based on SPSS output

- **Table (08) the differences in the sample study responses regarding the impact of the risk of automatic processing of accounting data on the quality of external auditing by scientific qualification.**

Variabl	F value	Degree of freedom	Statistica significanc	Statistical decision
Accept numerica hypothes	1,662	19 1	0.195	Accept a numerical hypothesis

- Source: Prepared by researchers based on SPSS output

-list of references

1. Karim ELDJOUHAR(2010) ,The impact of the use of information technology on the quality of the external auditor's work, the Blue Research and Human Studies Journal, vol. 10, No. 2. (https://zujournal.zu.edu.jo/)
2. Fatma Nadji laabidi (2012), the risks of using computerized accounting information systems and their impact on the effectiveness of Jordan's audit, is a letter to the Masters degree in Accounting, Business School, Middle East University.
3. Aladdin Saleh Mahmoud (2011), the impact of the risk-based audit curriculum on external audit quality, a letter to the Masters degree in Accounting, Business School, Middle East University.
4. Anantha Sayana (2003)" using Cats to support is audit , Information systems control journal, Volume 1.
5. EZENDU Ariwa (2008) , Financial Informatic Entertainment and Audit risk in Development Economy" Conference: Applications of Digital Information and Web technologies,. ICADIWT 2008. First International Conference on the Czech Republic
6. Manhel Maged Ahmed (2011), Re- Engineering Audit Profession in the Context of Information Technology, ,the requirements for a PHD of philosophy in Accounting, University of ST clements? Mosul, Iraq.
7. Assad Mohammed Ali Wahab (2011), Computerized Techniques in Auditing Financial Statements, Dar Al Yazouri Scientific for Publishing and Distribution, Amman, Jordan.
8. Fayadh Hamza Ramli (2011), Computerized Accounting Information Systems, Al-Abay Publishing and Distribution, Khartoum, Sudan.
9. Abdel Wahab Nasr Ali Mr. Shehata, (2003), Audit and Information Technology, Culture Publishing House, Alexandria, Egypt, .
10. Nasr Saleh Mohamed (2011), Review Theory, University House, Libya.

11. Act 10-01 of 11/07/2010, concerning the profession of the Comptroller, Comptroller and Accountant, Official Gazette of the Republic of Algeria, No. 07.
12. Thana El Qabbani (2008), Review of Data Operating Systems, Alexandria University House, Egypt.
13. Latifa Al-Fargani, Review under Automated Processing of Accounting Data, Arab Accountant Magazine, p. 4, available at: www.aam-web.com/ar/create_pdf/accounting/82
14. Hussein Yusuf Al-Qadi and others (2008), origins of the Review, Publications of Damascus University, Syria, p. 436. . Nimr Al-Shunty (2007) 341, the role of Information Technology in the Development of the Audit profession, Journal of the BaghdadSchool of Economics at the University, No. 27, Jordan.
15. REDJEM Khaled ; BENAMARA Taher (2018), The impact of the electronic protection system in reducing the risks of information and communication technology, a comparative study of a sample of institutions, ROA IKTISADIA Review , V8 N2.
16. REDJEM Khaled (2018), Impact of the Human Resources Information System on the effectiveness of Strategic workforce planning case study British Petroleum company in Algeria, Journal of Financial, Accounting and Administrative Studies V5 N2.