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Auditing Profession in the Age of Artificial Intelligence, Digital and Technological Economies

Dr. Azddine Aouanea [1], Dr. Gassem Hadda [2], Dr. Boudjlal Ahmed [3], Dr. Saidani Mohamed Said [4]

[1,2,3,4] UNIVERSITY OF LAGHOUAT, Algeria.
azddineaouanea.aouane@lagh-univ.dz
gacemhadda19@gmail.com
Email: a.boudjelal@lagh-univ.dz
Email: ms.saidani@lagh-univ.dz

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Abstract:

This article aims to examine the impact of emerging technologies on the auditing profession. Information technology, through its tools, methods, and mechanisms, influences auditing both indirectly via the accounting profession and directly within the auditing profession itself as a complementary discipline. The integration of information technology has a positive effect on auditors and audit practices, contributing to the mitigation of several challenges facing the profession. Specifically, it supports the development of auditing, enables it to keep pace with contemporary advancements, enhances auditors' ability to address professional challenges, narrows the audit expectations gap, mitigates negative effects, reduces audit risk, and ultimately improves the effectiveness and efficiency of the audit process.

Key words: Technology adoption, big data, Auditing practice, Expectations Gap, benefits, Technological challenges.

JEL Classification: M41;M42; M49.

Introduction:-

Information technology has become an undeniable reality in today's world, driven by rapid and unprecedented changes across all levels within a single generation. For instance, in 2017, the market capitalization of cryptocurrencies increased by 3,038%, amounting to approximately USD 547 billion. Such significant growth makes the understanding, accounting treatment, and auditing of cryptocurrencies particularly complex and challenging.[i]. In a 2020 study, KPMG reported that 37% of clients identified innovation as a top priority during that year, while 55% indicated that innovation would remain a top priority in the future[ii].

Technological advancements have significantly transformed accounting and auditing practices. Among the most important computer-assisted audit tools and techniques (CAATs) is generalized audit software (GAS), which comprises a set of standardized programs that enable auditors to analyze diverse client datasets and test clients' accounting systems. The adoption of technology in auditing is essential for assessing the effectiveness and efficiency of audit tasks. In recent years, the auditing profession has faced numerous information technology (IT) challenges, particularly in the context of conducting business through advanced IT-enabled accounting transactions. Moreover, the issuance of recent proposed audit standards has increased pressure on practicing auditors to enhance their technological proficiency and to be better prepared to compete, especially in terms of audit costs.

The primary challenges faced by auditors include the high cost of implementing specialized audit tools and the need for extensive staff training. Technological advancements have also increased the complexity of these tools, as their features and built-in functions have become more sophisticated. As

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a result, internal auditors are often discouraged from using such tools due to difficulties related to their usability and ease of application.

Information technology is an effective and essential tool that directly influences the methods used to organize audit office operations and quality control mechanisms, thereby enhancing the overall performance of audit firms. However, these emerging perspectives on the use of information technology in auditing and accounting processes have received limited attention in the existing accounting and auditing literature.

However, many auditors have limited or no experience with cryptocurrencies and, as a result, may not fully recognize the challenges involved in auditing such assets.

So, the study's questions are:-

1. What is the perception of auditors for auditing strategies in light of information technology and its impact on the audit process?;

2. To what extent do the auditors use the techniques of information technology to achieve a suitable auditor's opinion for their customers who use information technology?;

3. What are the difficulties faced by auditors during the use of information technology, big data in the performance of audit functions?

Hypotheses of the Study

We can develop the following hypotheses:-

H_1: The external auditor uses the information technology, big data to examine the financial information listed in the financial statements.

H_2: There are no difficulties facing auditors during the use of information technology in the performance of the audit.

Objectives and Importance of the Study

The importance of this study arises from the growing need for auditors to confront increasing technological developments in accounting information systems. These developments have placed additional demands on auditors by transforming data processing methods and shifting the issuance of audit reports from traditional formats to electronic forms.

Limited oh the Study

A limited number of studies have investigated the relationship between emerging technology tools and audit practices. For example, Thottoli et al. (2019c) examined the link between communication technology and auditing practices and found a relationship between four elements of communication technology and audit practice. However, their study did not address the broader and more fundamental aspects of information technology. Consequently, there remains a lack of clear understanding regarding how emerging technology tools specifically influence auditors' practices.

Previousstudies:-

- **DenizAppelbaum, Alexander Kogan, Miklos A. Vasarhely, 2017[iii]:**

The study aims to examine the relationship between modern audit engagements and the use of big data and analytics, emphasizing the need for auditors to remain competitive and relevant in today's business environment. Client systems are increasingly integrated with cloud computing, the Internet of Things, and external data sources such as social media, creating vast opportunities and heightening the need for external auditors to adopt advanced analytics. The paper first highlights the necessity for the audit profession to transition toward big data and audit analytics. It then reviews existing regulations concerning audit evidence and analytical procedures, contrasting them with the evolving landscape of big data and advanced analytics. The study finds that in a big data environment, the audit profession has the potential to implement more advanced predictive and prescriptive analytics. Six key research questions are addressed, with particular emphasis on the quantification, measurement, and reporting needs. Finally, the paper synthesizes and reviews the challenges facing auditors as clients increasingly utilize big data and complex analytics, contributing to the literature by identifying emerging concerns and proposing opportunities for future research..

- **AbdullateefOmitogun, Khalid Al-Adeem, 2019[iv]**

This study examines practicing auditors' perceptions and competencies in applying big data and data analytics to audit engagements. Results from an electronic questionnaire distributed to accountants

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indicate that, although auditors generally possess strong information technology skills and are familiar with big data and analytics concepts, they often lack the technical expertise and familiarity with specific data analysis tools. The findings reveal that 64.71% of accountants have not received any training on big data and analytics, while 31.37% intend to improve their knowledge in this area. The study underscores the need for auditors to receive targeted training in conducting substantive audit risk assessments using big data and data analytics.

Structute of the study:-

1. Information Technology, Artificial Intelligence;
2. Technology, Artificial Intelligence and Auditing practices;
3. Technology and Audit Quality Control;

1. Information Technology, Artificial Intelligence

1.1 The Concept

The definition of information technology (IT) is comprehensively described by Martin et al. (2002), who define IT as the use of computer technology to process and store information, along with communication technology to transmit information. More broadly, IT encompasses all types of technology used to capture, manipulate, communicate, provide, and utilize data, which is subsequently transformed into information (Martin et al., 2002). Similarly, ReemAqab (2019) defines IT as "the latest concept of technological development that overcomes the time and distance barriers in transportation and communication between countries. It includes electronic means of voice communication and data transmission, such as e-mail, fax, the Internet, and global high-speed telephone networks" (p. 60)[v].Another perspective defines technology as a key factor in document management and change control. Various aspects of change control—such as revision levels, revision dates, signatures, distribution copies, distribution lists, and master lists—originated from systems developed to manage what were traditionally hardcopy documents. Historically, these included master and derivative blue or sepia prints, carbon or mimeographed copies of procedures, and other controlled documents. Managing, distributing, and updating these documents often required a dedicated full-time position[vi].

Big data is a collection of data characterized by six V's: Volume, Velocity, Value, Variety, Veracity, and Variability. Volume reflects the large size of big data, as implied by its name. Velocity refers to the rapid rate at which new data is generated and the need to process and analyze it in near real-time. Value measures the usefulness of big data, indicating that insights derived from it should lead to measurable improvements. Variety highlights the wide range of data types included in big data. Veracity denotes the reliability and trustworthiness of the data. Finally, Variability indicates that the methods of data capture may differ across time and location. Furthermore, variability suggests that the interpretation of data may change depending on the context[vii].

Figure (01):The Big Data environment

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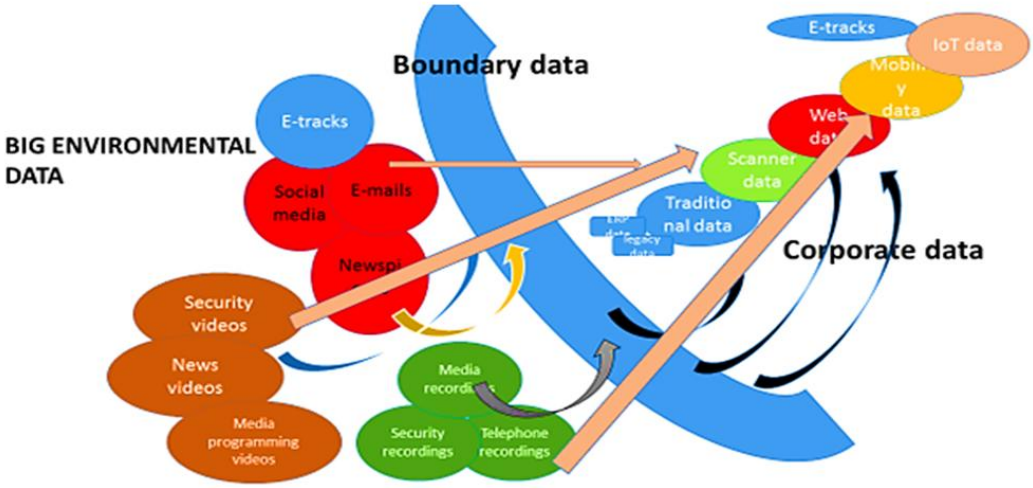

Source:Brown-Liburd, H., &Vasarhelyi, M. A. (2015), **Big Data and Audit Evidence**. Journal of Emerging Technologies in Accounting, Vol 12, n° 01, p 03.

1.2 Characteristics of Information Technology

Some of the important attributes of useful information are as follows[viii]:-

1. **Availability**: or Timeliness is a very important property of information. If information is not available at the time of need, it is useless.

2. **Purpose**: Information must have purposes at the time it is transmitted to a person or machine, the basic purpose of information is to inform,evaluate, persuade, and organize. It helps in creating new concepts, identifying problems, solving.

3. **Mode and format** : The modes of communicating information to humans are sensory (through sight, hear, taste, touch and smell) but in business they are either visual, verbal or in written form. Format of information should be so designed that it assists in decision making, solving problems, initiating planning, controlling.

4. **Decay**: Value of information usually decays with time and usage and so it should be refreshed from time to time.

5. **Rate**: The rate of transmission/reception of information may be represented by the time required to understand a particular situation. A useful information is the one which is transmitted at a rate which matches with the rate at which the recipient wants to receive, Quantitatively.

6. **Frequency**: The frequency with which information is received affects its value. Financial reports prepared weekly may show so little changes that they have small value, whereas monthly reportsmay indicate changes big enough to show problems or trends[ix].

7. **Completeness**: The information should be as complete as possible. with this complete information, the manager is in a much better position to decide whether or not to undertake the venture.

8. **Reliability**: It is just not authenticity or correctness of information; rather technically it is a measure of failure or success of using information for decision-making. If an information leads to correct decision on many occasions, we say the information is reliable.

9. **Validity**: It measures the closeness of the information to the purpose which it purports toserve. The measure suiting the organization may have to be carefully selected or evolved.

10. **Quality**: Quality refers to the correctness of information. Information is likely to be spoiled by personal bias.

11. **Transparency** : If information does not reveal directly what we want to know for decision-making, it is not transparent.

12. **Value of information**: It is defined as difference between the value of the change in decision behavior caused by the information and the cost of the information.

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13. **Adequacy**: To be useful, an information must be adequate so that the desired actions can be initiated. Required information should flow on different directions within the organization and to and from its environment.

1.3 Risks of Electronic Commerce:

Although the benefits it brings e-commerce, but that the data and information under the operation of the electronic data are exposed to many dangers systems overshadow the internal control systems and most important are[x]:-

1. **Risks associated feature disappearance of paper documents**: with e-In modern commerce, accounting data is often voluminous and complex, making it difficult to interpret. This complexity increases the risk of fraud and manipulation, as well as the challenge of detecting such irregularities. Additionally, accounting data may be affected by errors, whether due to mistakes in data entry, defects in the main memory, or incorrect processing, especially in the absence of effective oversight procedures.

2. **Risks associated with bond Audit**:

Audit risks also arise from the electronic handling of data, particularly when original documents are no longer available after initial entry and are subsequently disposed of. Additionally, processes and operations performed within the computer system may be difficult to observe, limiting the availability of supporting evidence for audit verification. Such risks include errors during data transfer and inconsistencies or limitations within the system's vocabulary and processing logic.

3. **The risks associated with the protection of information**:

Additional risks include the possibility of data theft or unauthorized access to programs, which could be used for personal gain or to exploit sensitive information against the organization..

4. **Risks for both the seller and the buyer**: Risks may include interactions with fraudulent companies and the use of counterfeit cards, often resulting from weaknesses in the internal control system and the continuous emergence of new and evolving threats.

5. **Risks associated virus computer**: the risk of computer viruses that it caused many problems in the data and programs as they are used to destroy part of the software so that it cannot be recovered.

6. **risk reincarnation**: low cost to build a website and easily copied pages of websites makes it very easy to build illegal sites posing interface real sites to fool the visitors to give their personal information credit their own cards, believing that Wears sites are sites for companies respectable[xi].

2. Technology, Artificial Intelligence and Auditing practices

1.2 Important of Information Technology in Auditing sector

Information system auditing involves evaluating the balance between information system applications and procedures to determine whether the system has been designed and implemented effectively, efficiently, and economically. It also assesses whether appropriate asset security mechanisms are in place and ensures the integrity and accuracy of data. IT auditing is an integral part of the overall audit function, as it supports auditors' judgments regarding the quality of information processed by computer systems. Auditors with IT audit skills are often regarded as key technological resources for the audit team. Electronic auditing, or "E-Auditing," refers to the application of information technology to assist auditors in planning, controlling, and documenting audit work. This includes computer-assisted auditing of electronic records, allowing auditors to perform sections or the entirety of audit procedures electronically. Consequently, companies that use computers to record their activities and store data electronically are well-positioned to have their accounts audited electronically[xii]. According to Ron Weber (1999), information systems auditing is "the process of collecting and evaluating evidence to determine whether a computer system safeguards assets, maintains data integrity, enables the effective achievement of organizational goals, and uses resources efficiently." There are several reasons why conducting an information technology audit is necessary, including:[xiii]

1. Continual development in Accounting Information System, as the computer has become the only means, in the present time, to audit these systems.
2. Saving auditor's time in performing his position.
3. Changing the way of processing data from traditional way to electronic way.
4. The auditor can use the computer in performing some auditing processes:

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a. Checking authenticity of accounting processes, the mistakes on the decision making and the risk of data leaking

b. Identifying between branch balances and general balance.

c. Analyzing balances that increase or decrease specific numbers to check them more.

d. Analyzing some balances like : movable, slow and instant.

e. Using the computer in preparing financial reports and lists.

Dowling (2009) illustrated that the auditor's participation in system design will be more sensitive and necessary in the case of advanced operating systems and contributes to the achievement of the following[xiv]:-

(1) Ensure the discovery of anomalies and reduce the possibility of fraud and manipulation of the computer because of the possibility of developing better accounting control systems;

The use of audit software and the adoption of information technology in auditing assist auditors in completing their tasks efficiently and on time. Emerging technology tools, including computer-assisted audit techniques (CAATs) and audit software, help ensure the high quality of audit reports. Moreover, there is a growing trend for developing countries to adopt such audit software[xv].

(2) The auditor will be able to use better methods to collect evidence and increase the likelihood of discovery of errors and fraud; Addressing problems related to loss of documentary evidence;

(3)Emerging technology tools have enhanced the capability and efficiency of statutory audits. The adoption of electronic auditing reduces the time required to perform audit tasks and lowers operational costs. Furthermore, the use of these tools has improved the quality of audit services, increased firms' operational profitability, and mitigated audit risks.

(4) Provide the auditor with copies of all programs related to important accounting applications and their amendments.

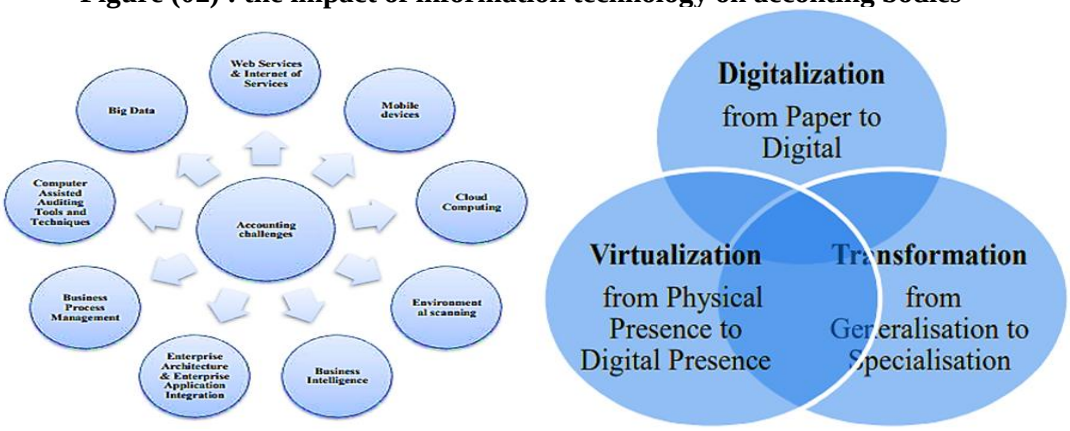
(5) The implementation of emerging technology tools in the auditing process enhances productivity, facilitates the efficient collection of sufficient and appropriate audit evidence, enables faster communication with stakeholders, and ensures the protection of clients' confidential data[xvi].

While Juma'a (2012) illustrated that the auditor cannot perform his/her task in auditing electronic accounting operations without using the computer because of the following reasons[xvii]:-

(1) Continuous development of audit functions and procedures as a result of the electronic operation of accounting data;

(2) Provide the time required to perform the audit process due to the impact of the audit on the financial position of many enterprises.

Figure (02) : the impact of information technology on acconting bodies



Source : Aleksandra Mitrović, SnežanaKnežević (2020), **Fraud and Forensic Accounting in the Digital Environment of Accounting Information Systems**, Tourism in function of Development of the Republic of Serbia, p 284-285.

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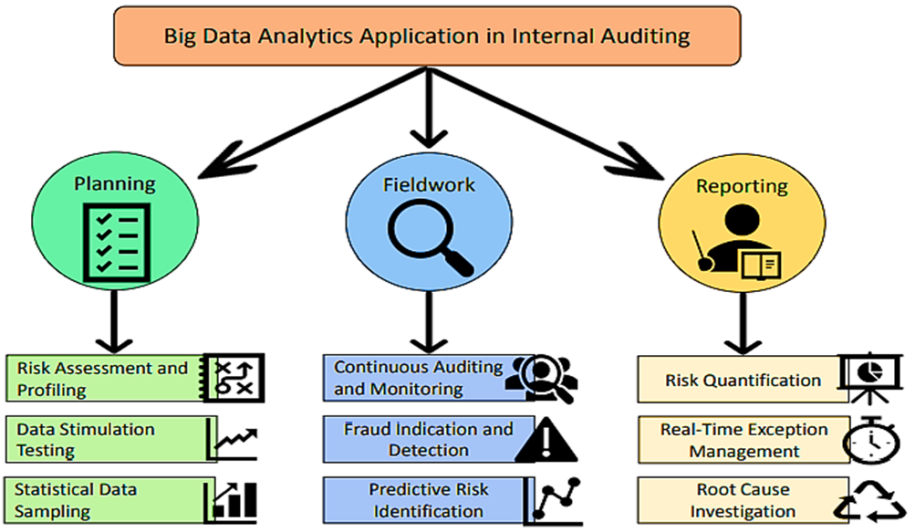
2.2 Fields of using technology in auditing professions

Technological resources used in the performance of audits include:

1. IT applications used to prepare and compile audit documentation.
2. IT applications used for intellectual resources.
3. IT applications used as automated tools and techniques to perform audit procedures.

Figure (03): Fields of using technology in auditing professions



Source: NedaShabani et al, Op Cit, p 06.

2.3 The international discussion about Technology, Artificial Intelligence

The environment, as a contingency factor, encompasses the market and its associated elements, such as prices, products, competition, and government policies. In the context of auditing, the environment may reflect uncertainties within the audit market, including factors such as audit fees, competition, and regulators' policies, as well as the attitudes of standard-setting bodies. From the perspective of big data auditing (BDA), audit market regulators play a crucial role in ensuring the public quality of audit firms and promoting the adoption of data analytic tools. At a higher level, international professional organizations have focused on establishing frameworks and guidelines for auditing in an information technology context. Notably, the International Federation of Accountants (IFAC) has issued a set of standards and international audit directives, some directly addressing IT auditing, such as International Review Statement No. 1009 and ISA 401, and others indirectly related to IT auditing, including International Review Statements No. 1002, 1008, and International Auditing Standard No. 402[xviii]. In totally, Six international auditing standards were issued in this regard as listed below[xix]:-

1. International Auditing Standard (401) entitled "**Auditing the Environment of Computer Information Systems**".
2. International Auditing Standard (1001) entitled "**The Environment of Computerized Information Systems- Independent Personal Computer Systems**".
3. International Auditing Standard (1002) entitled "**The Environment of Computerized Information Systems - Direct Computer Systems**".
4. International Auditing Standard No. 1003, "**The Environment of Computerized Information Systems - Database Systems**".
5. International Auditing Standard (1008) entitled "**Risk Assessment and Internal Control – Characteristics and Considerations of Computer Information Systems**".
6. International Auditing Standard N° 1009, "**Computer-Aided Verification Methods**".

The issuance of these six international auditing standards reflects a clear response to the evolving and increasing role of information technology in the audit profession, aimed at supporting auditors in performing their duties in an increasingly technology-driven environment. In this regard, Barry

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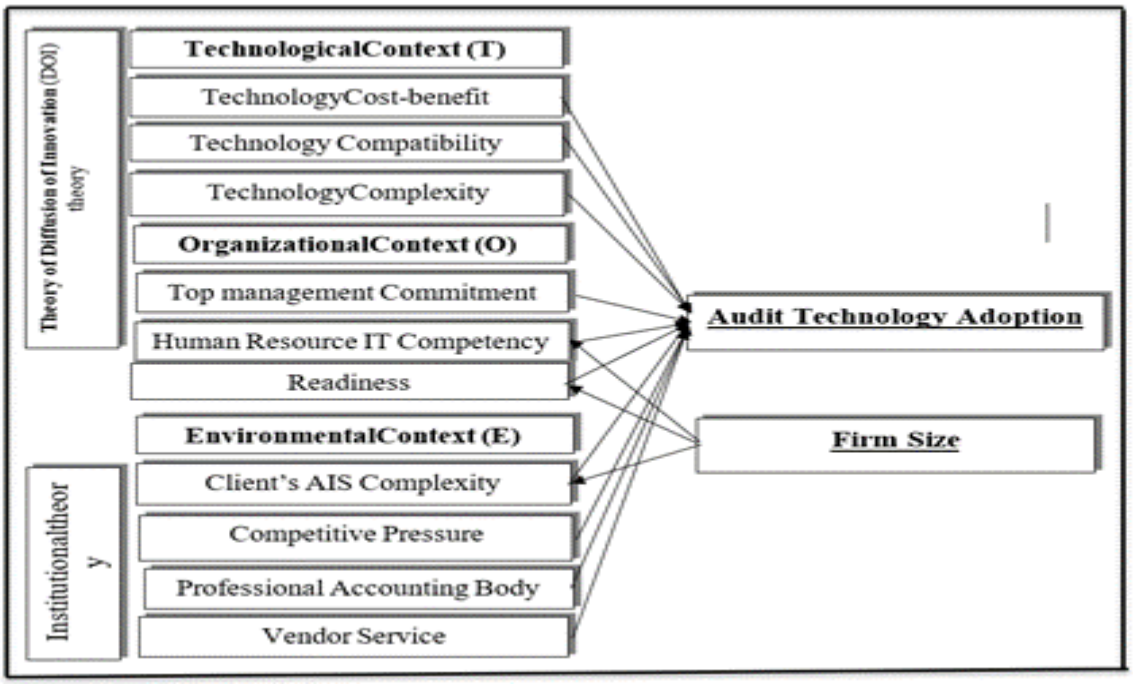
Melancon, CEO of the American Institute of Certified Public Accountants (AICPA), recently stated: "We have an obligation to keep pushing these technologies and embedding them in the profession … Our job is to bring as much of the profession forward as we can in this environment[xx]. Arnold and Sutton (1998) express concerns that the continued use of intelligent technologies may diminish auditors' decision-making skills. In contrast, Karahanna et al. (1999) argue that an individual's attitude toward adopting an IT tool is shaped by their salient beliefs about the consequences of using the tool (behavioral beliefs) and their evaluation of these consequences[xxi].

The following figure presents the contextual framework of this study, developed based on the Technology-Organization-Environment (TOE) framework by Tornatzky and Fleischer (1990). This research framework identifies the technological, organizational, and environmental factors influencing the adoption of audit technologies, thereby addressing the research question on how such technologies are adopted. The framework is further reinforced by the Diffusion of Innovation (DOI) theory (Rogers, 2003) and Institutional Theory (DiMaggio & Powell, 1983) to better explain the influence of technological and environmental contexts on audit technology adoption in audit firms. While the TOE framework provides a general view of technological factors affecting adoption, it does not specifically address the characteristics of the technology itself; this gap is addressed through DOI theory. Additionally, given the unique environmental characteristics of the audit profession, environmental factors in the TOE framework are best explained through Institutional Theory. By integrating these three theories, the study presents a comprehensive framework for audit technology adoption. The framework illustrates how (1) the technological context—including technology cost-benefit, compatibility, and complexity; (2) the organizational context—including top management commitment, IT competency of human resources, and organizational readiness; and (3) the environmental context—including client AIS complexity, competitive pressure, support from professional accounting bodies, and vendor services—collectively influence the adoption of audit technologies[xxii].

Figure (04): Conceptual framework for adopting technology in accounting professions .



Source:Rosli, K, Yeow, P and Eu-Gene, S (2013), p 05.

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3. Technology and Audit Quality Control

3.1 Quality Control concept in Audit Service Industry

Accordingly, there is no agreement on a practical and unified definition of audit quality because audit quality is characterized by the following features[xxiii]:-

- It is intangible; audit activities are services which cannot be valued and measured in advance.
- It is intangible; there is a massive variation of performing and providing services from time to time. For example, work team performance varies according to time and work pressure. In addition, a variation of opinions and needs of service beneficiaries is available. Finding a unified measurement of audit quality, therefore, becomes difficult.
- Evaluation of audit quality and service is more difficult than product quality evaluation due to a lack of experience.
- Audit quality can be identified when a comparison between beneficiaries‟ expectations and actual performance of provided service is conducted.
- Service quality is not only assessed by the results (the output) but also by the method and processes of service performance (the input).

3.2 Importance of Information Technology in Applying Quality Control Procedures

The importance of information technology in applying audit quality can be summed by the following points (ReemAqab, 2019, p 60):-

- The use of information technology in applying quality control procedures contributes to improve the level of trust in audit profession in information technology environment.
- Documenting work papers is improved because certain documentation policies are followed and information technology is applied in office work documentation.
- Audit Assurances illustrating that office services are in line with vocational requirements are given.
- A view of community toward audit profession has improved.
- Customer relationships are improved since more accuracy and attention during work are expressed and information technology is used in order to contact the clients.
- Fertile ground is provided for attracting new clients and increasing market share in the light of competition conditions and advertising restrictions plus information technology development.
- Instructions and procedures of polices adopted by audit company are provided; these polices provide a reasonable level of audit assurance; and they forces audit offices to follow information technology environment standards. As a result, audit offices can avoid vocational and legal penalties.
- Operational costs of audit processes are decreased; efficiency and effectiveness of task performance are improved; time and effort exerted in re-working are reduced.

3.3 Technology and Expectations Gap

The expectations gap refers to the difference between what is expected from auditors and their actual performance. It can also be defined as the gap between the auditing standards that guide auditors' work and the expectations of financial statement users regarding the auditor's role. In other words, it represents the contrast between the reality of the audit profession and what is anticipated by stakeholders. Generally, the expectations gap in auditing can be classified into two main categories[xxiv]:-

1. Reasonableness gap: arise as a result of the discrepancy between what society expects from the auditor's done and what can be reasonably achieved.

2. Performance gap: arise as a result of the disparity between the reasonable expectations of the community of what should be done by the auditor and the actual performance. And classified this gap (performance) to[xxv]:-

a. Gap created as a result of lack of professional standards of scrutiny.

b. Gap created as a result of deficiencies in the performance of the observer the same accounts.

The following figure shows the relation between expectations gap and big data auditing:-

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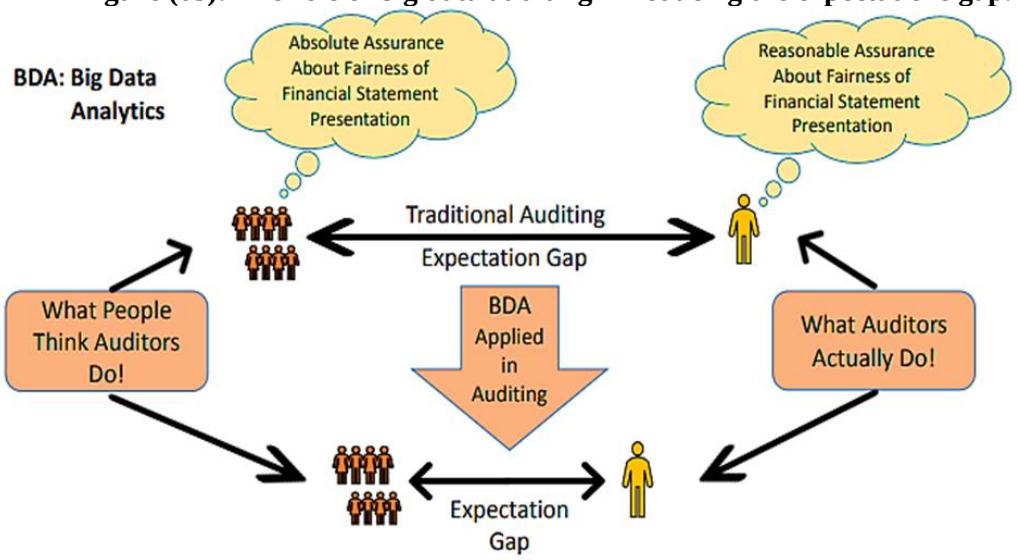
Figure (05): The role of big data auditing in reducing the expectations gap.



Source : NedaShabani et al, Op Cit, p 04.

According to AU-C Section 520 about Analytical Procedures (AICPA 2012a), to conduct substantive analytical procedures the auditor should[xxvi]:-

- determine the suitability of a certain substantive procedure, given the account;
- evaluate the reliability of the data from which these ratios are developed;
- develop an expectation of recorded amounts and ratios and whether these are accurate, and finally;
- determine the amount of difference (if any) between the recorded amounts and the auditor's expected values and decide if the difference is significant or not.

A crucial skill for auditors, particularly in the coming years, will be the ability to adapt to an evolving work environment. Research by ACCA provides insights into the future mix of required skills and how they may change, including the development of a "digital quotient," as discussed in *Professional Accountants – the Future: Drivers of Change and Future Skills*. The report identifies a range of both traditional technical and ethical skills that are essential now and will continue to be important in the finance function of the future. Theseskillsinclude[xxvii]:-

- Technical skills and ethics (TEQ): The skills and abilities to perform activities consistently to a defined standard while maintaining the highest standards of integrity, independence and scepticism.
- Intelligence (IQ): The ability to acquire and use knowledge – thinking, reasoning and solving problems.
- Creative (CQ): The ability to use existing knowledge in a new situation, to make connections, explore potential outcomes, and generate new ideas.
- Digital (DQ): The awareness and application of existing and emerging digital technologies, capabilities, practices and strategies.
- Emotional (EQ): The ability to identify your own emotions and those of others, harness and apply them to tasks, and regulate and manage them.
- Vision (VQ): The ability to anticipate future trends accurately by extrapolating existing trends and facts, and filling the gaps in knowledge by thinking innovatively.
- Experience (XQ): The ability and skills to understand customer expectations,meet desired outcomes and create value.

3.4 Auditing practices mechanisms against cybercrime

In order to reduce cybercrime, we need to[xxviii]:-

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1. Reasoning, including inspection, inspection and expertise, involves the particularity of cybercrime with the activation role of auditors.

2. International and domestic efforts to legalize the prevention of this new crime, and the efforts of international institutions and organizations are:-

- Raise public awareness of cybercrime and recognize that cybercrime is a threat that must be faced and ensure that they do not become victims.
- Electronic addresses that require confidential information, such as credit cards or bank accounts, need to be identified and pay attention to updating the protection system.
- Set up an organization to fight against cybercrime.

3. Develop secure software and powerful operating system to limit electronic intrusion, virus and spyware, such as anti spyware, that is, scan the computer to search and delete Spyware components.

Conclusion:-

This paper contributes to the literature by examining the challenges facing the external audit profession as businesses increasingly adopt information technology, big data, and advanced analytics across various operational and decision-making processes. The proposed research issues, along with recommendations for greater use of technology and analytics, aim to inspire further research that is valuable to professionals, regulators, and academics. The key findings of the study are:-

1. The Electronic Auditing System is able to reduce the burden of Electronic Environment Complexity of Accounting Information System, Auditing risks, the expectations gap, …ets.

2. The impact of information technology on auditing as a science and profession through auditing standards. The phenomenon of information technology has added six (6) international auditing standards in the field of computerized information systems. This is evidence of the impact of this phenomenon on auditing.

3. IT works to reduce the expectations gap in audit by using methods, mechanisms and techniques that help increase the size of the audit samples, increase the speed of the audit work, accuracy and deliver the audit results faster and easier for the users.

4. Information technology affects the reduction of audit risk through electronic data processing and electronic auditing, which helps auditors reduce the likelihood of errors in audit work and increase the probability of discovery, which in turn leads to a reduction in audit risk.

6. Dealing with mutilgenerations in Electronic Accounting Information Systems, Following up errors, dealing with the multiplicity of data entries and forms entered in Electronic Accounting Information Systems.

Recommendations :-

Based on study conclusions, the researcher recommends the following :-

(1) It is very important to ensure that the company has policies to make use of the electronic information system and to ensure that it is used and reviewed periodically;

(2) It is very important to provide training courses for the external auditors regarding how to use computerized systems and accounting programs in auditing, The adoption of emerging technology tools also requires adequate practical skills and training;

(3)Using information technology shall be expanded since it contributes to organize audit offices, perform vocational requirements, and prepare audit programs, document audit processes and exchange information between audit offices and clients;

(4) Educational bodies shall be encouraged to modify audit course plans, to provide an appropriate level of educational qualifications and experience of auditors, increased attention to training and development of auditors, and continuing education programs to keep up with the rapid pace of developments in information technology;

(5) Audit quality shall be activated in the light of international developments; researchers, scholars, and organizations locating or intrenational shall monitor vocational performance of auditors.

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References:-

[i]- the Chartered Professional Accountants of Canada (CPA Canada) (2018), Audit Considerations Related to Cryptocurrency Assets and Transactions, Site: www.cpacanada.ca/en/business-and-accounting-resources/other-general-business-topics/information-management-and-technology/publications/introduction-to-blockchain-technology, p 03.

[ii]- KPMG (2020). Innovation Trends 2020, Retrieved from: https://home.kpmg/content/dam/kpmg/au/pdf/2020/digital-innovation-trends-survey-2020.pdf, p 02.

[iii]- DenizAppelbaum, Alexander Kogan, Miklos A. Vasarhely (2017),Big Data and Analytics in the Modern Audit Engagement: ResearchNeeds, Auditing A Journal of Practice & Theory, Vol 36, n° 04, site : https://www.researchgate.net/ publication/313286738, p 1 - 68.

[iv]- Omitogun, A. & Al-Adeem, K., (2019), Auditors' Perceptions of and Competencies in Big Data and Data Analytics: An Empirical Investigation, International Journal of Computer Auditing, Vol 1, N° 1, p 92- 113.

[v]- ReemAqab (2019), Role of Information and Communication Technology in Applying Quality Control Procedures in Audit Offices in the Hashemite Kingdom of Jordan, International Business Research; Vol 12, N° 7, p 60.

[vi]- Diane Janvrin, James Bierstaker, Jordan Lowe, An Examination of Audit Information Technology Usage and Perceived Importance, site: https://www.researchgate.net/publication/274554200_An_Examination_of_Audit Information_TechnologyUse_and_Perceived_Importance, p 03.

[vii]- NedaShabani, ArslanMunir, Saraju P. Mohanty (2021), A Study of Big Data Analytics in Internal Auditing, site: https://www.researchgate.net/publication/353667133, p 20.

[viii]- Fitrawansyah (2015), The Roles of Information Technology in Acounting Information System Audit, Research Journal of Finance and Accounting, Vol 6, N° 9, p 265.

[ix]- Mousa ALRASHIDI, Abdullah ALMUTAIRI, Omar ZRAQAT (2022), The Impact of Big Data Analytics on Audit Procedures**:** Evidence from the Middle East, Journal of Asian Finance, Economics and Business, Vol 9, N° 2, pp 93–102.

[x]- OMER ALI KAMIL, NASHAT MAJEED NASHAT (2017), The Impact of Information Technology on the Auditing Profession-Analytical Study, International Review of Management and Business Research ,Vol 6, N° 4, p 1332.

[xi]- ReemOkab (2013)), The Expert Systems and Their Role in Developing External Auditor's Performance and Improving Audit Service's Quality in Information Technology Environment in Audit's Offices Located in the Hashemite Kingdom of Jordan, International Journal of Business and Management; Vol 8, N° 17, p 131.

[xii]-Abdullah Mohammad Al-Zoubi Fares Saoud Al-Qadi (2016), The Effect of Electronic Auditing in Reducing the Burden of Electronic Environment Complexity of Accounting Information System on the Auditor, Research Journal of Finance and Accounting, Vol 7, N° 14, p 178.

[xiii]- DOAA SHAISH ABABNEH, ALI MAHMOUD ALRABEI (2012), THE MODERATING EFFECT OF INFORMATION TECHNOLOGY ON THE RELATIONSHIP BETWEEN AUDIT QUALITY AND THE QUALITY OF ACCOUNTING INFORMATION "JORDANIAN AUDITORS PERCEPTION", Journal of Theoretical and Applied Information Technology, Vol 99, N° 14, p 3366.

[xiv]- Firas A. N. Al-Dalabih (2018). The Role of External Auditor in Protecting the Financial Information Listed in the Financial Statements in the Jordanian Industrial Companies, Journal of Modern Accounting and Auditing, January, Vol14, N° 1, p 6-16.

[xv]- Khaled M. Alqatanani, Abdulqawi A. Hezabr (2015), To what the Auditors in the Kingdom of Bahrain recognize auditing strategies in the Light of information technology and what is its impact on the Audit? A Field Study, International Journal of Economics, Commerce and Management, Vol 03, N° 5,p701.

[xvi]- Josiah, Mary and Izedonmi, P. F (2013), Critical issues in iter,ational and electronic audit evidence, International Journal of Management Sciences and Business Research, Vol 2, N° 3, p 08.

MSW MANAGEMENT -Multidisciplinary, Scientific Work and Management Journal
ISSN: 1053-7899
Vol. 35 Issue 2, 2025, Pages: 1325-1337

[xvii]- Mohammed MuneeraliThottoli and EssiaRies Ahmed (2022), Emerging technology and auditing practice: analysis for future directions, Emergingtechnology andauditingpractice, Site: https://www.emerald.com/insight/2183-4172.htm, p 03.

[xviii] - At a panel discussion held on November 27, 2017, Roger O'Donnell, a partner at KPMG, stressed the need for auditors to remain relevant in the recent big data phenomenon: "We need a combination of different skills in audit teams. We need data specialists—people who extract data, understand the systems, who can bring all the data available to us. We also need analysts—people who have critical thinking skills; those people who are not only able to look at a single transaction, but also are able to analyze the entire population, the entire system. That is a transformative exercise for the audit profession", Source: Omitogun, A. & Al-Adeem, K (2019), Op cit, p 98. According to Helen Brand, Chief Executive of the Association of Chartered Certified Accountants (ACCA): "To succeed as a professional accountant. . . a vastly different set of skills is required than was necessary just 10 short years ago. And in the next decade, things are likely to change even faster and more dramatically as the global economy continues to evolve at an ever-quickening pace.",Source: Sharron Arnold's, 6 skills accountants need to survive the robot uprising, Blackline Magazine, Retrieved from: https://www.blackline.com/blog/exceptional-accountants/6-skills-exceptional-accountant/, date : June 22, 2022, p 01.

[xix] - Angel R. Otero (2019), Information Technology Control and Audit, site :https://www.researchgate.net/publican tion/327312550, p 04.

[xx]- Marc Eulerich, AdiMasli, Jeffrey Pickerd, David A. Wood (2019), The Impact of Audit Technology on Audit Outcomes: Technology-Based AuditTechniques' Impact on Internal Auditing, Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3444119, p 03.

[xxi]- Nutchajarin LOHAPAN (2021), Digital Accounting Implementation and Audit Performance: An Empirical Research of Tax Auditors in Thailand, Journal of Asian Finance, Economics and Business, Vol 8, N° 11, p 02.

[xxii] - Rosli, K, Yeow, P and Eu-Gene, SiewEu-Gene (2013), Adoption of audit technology in audit firms, in Hepu Deng and Craig Standing (ed.) ACIS 2013: Information systems: Transforming the Future: Proceedings of the 24th Australasian Conference on Information Systems, Melbourne, Australia, 4-6 December, 2013, pp 1-12, site : at: https://www.researchgate.net/publication/275644339.

[xxiii]- NaserFhaid Abdullah Alenezi (2021), The Impact of Electronic Audit on the Limits of the Period of Issuance of the Auditor's Report from the Point of View of Kuwaiti External Auditors, British Journal of Humanities and Social Sciences, Vol 24, N° 2, p 03.

[xxiv]- Miklos A. Vasarhelyi, Silvia Romero (2014), Technology in audit engagements a case study, Managerial Auditing Journal, Vol 29, N° 4, p 350.

[xxv]- Anna-CarinKarlsen and Maria Wallberg (2017), The effects of digitalization on auditors' tools and working methods, Master thesis, Business Administration, Department of Business and Economics Studies, University of GAVLE, p 15.

[xxvi] - DenizAppelbaum, Miklos A. Vasarhelyi, Alexander Kogan,Helen Brown-Liburd, Theodore J. Mock (2017),Public Auditing, Analytics, and Big Data in the Modern Economy, site : https://rucore.libraries.rutgers.edu/rutgers-lib/54072/, date consultation 11/11/2024, p 44.

[xxvii]- Mike Suffield (2020), Auditors of the future – what are the skills needed in a digital age?, journal of big data & digital audit, vol 01, p 25.

[xxviii] - Nabil Chaib, Strategic mechanism of combating cyber crime under the new environment of digital communication, Law and Political Science Journal, Vol 08, N° 02, p 710-718.