Benefits and Challenges of Artificial Intelligence and Blockchain Adoption in Auditing Process: a Research Agenda

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of Artificial Intelligence and Blockchain
Adoption in Auditing Process: A Research Agenda

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Abstract

This study aims to present an understanding of the benefits and challenges of adoption Artificial intelligence and blockchain in Auditing process. This article looks at published about impact and adoption of AI & BT in Auditing process studies to investigate benefits and challenges. The benefits adoption AI and BT in auditing process are strengths for Fraud reduction along with increasing compliance among international standards as well speed up audit tasks, saving time and effort together with increasing audit quality and reducing human error in addition to keeping information reliability and relevance as well as encourage the improvement of traditional auditing also reducing the human role in the auditing and accounting career and BT allows accountants and auditors to save costs in addition to eliminate time delays in carrying out these tasks that reduce the risk of human error. However, the challenges adoption AI and BT in auditing process are weakness for highest cost of application artificial intelligence in auditing process as well as keeping the auditors following up the latest updating in AI system adoption in audit process in addition to security vulnerabilities risk and attacks coupled with racial biases within adoption blockchain program in Auditing. It is wished that this paper examination of the issues relevant to the present and future station of adoption AI & BT in Auditing process will run an adequate overview of the critical matters and concerns that are significant to be known for empathetic and proceeding the vital submission of the impact AI & BT in Auditing process on the growth of economic and social. It is predicted that this structured has an effect on future policy that eventually contributes to enhancing enterprise and limit fraud incidents also speed up audit tasks, saving time and effort together with increasing audit quality and reducing human error, thus, it can contribute to enterprise and growth of economic and social. The literature reviews on adoption of AI & BT in Auditing process are broad and varied. However, there are a shortage of comprehensive understanding of the benefits and challenges of auditing process. This study provided policymakers with a deep knowledge of adoption of AI & BT in Auditing process.

Keywords – Auditing process, benefits and challenges, Artificial intelligence, Blockchain, Accounting Profession.

Introduction

In view of the Fourth Industrial Revolution along with the strong and rapid entry of technological progress in many areas of life, Artificial Intelligence (AI) and Blockchain (BT) are considered the two technologies that emerged from the Fourth Industrial Revolution and that carried about fundamental transformations in the world of industry moreover became through digitalization to replace human intelligence (Kumar, Lim, Sivarajah, & Kaur, 2022), technological progress is changing the world in a very impressive way, Business growth in light of this technological advancement is accompanied by great complexity, challenges, and benefits in today's business world using technological decision tools (Gepp, Linnenluecke, O'Neill, & Smith, 2018), this means that companies produce more and more data, therefore, companies allow the responsibility to keep in step with any development and change in tools that are based on the use of advanced technology to examine the large volume of data generated for the benefits and challenges analysis of the business company's (Brown-Liburd, Issa, & Lombardi, 2015).

The Impact of AI and BT in Audit process have been examined in the earlier literature (Al-Sayyed, Al-Aroud, & Zayed, 2021; Alaba & Ghanoum, 2020; Bai, 2017; Baldwin, Brown, & Trinkle, 2006; Gusai, 2019; Kokina & Davenport, 2017; Omoteso, 2012; Persico & Sidhu, 2017; Schmitz & Leoni, 2019; Shbail, Obeid, Alshurafat, et al., 2023; Shbail, Obeid, Salleh, Mohd Nor, & Alshurafat, 2023; Taha, Alshurafat, Shbail, & Obeid, 2023; Zehong & Li, 2018). However, the previous studies don't collect and present the benefits from and obstacles to adopt AI and BT in Auditing process in one paper, this paper aims to add knowledge to an understanding of the benefits and challenges of Artificial Intelligence and Blockchain adoption in the Auditing Process based on the evidence that was collected from a related literature review approach, Although there are past reviews of Adoption AI and BT in Auditing process in accounting literature (Agnew, 2016; Issa, Sun, & Vasarhelyi, 2016; Kokina, Mancha, & Pachamanova, 2017; Odat, Alshurafat, & Masadeh, 2021; Rapoport, 2016; Sbaih, Alshurafat, Al-Hazaima, & Alhusban, 2023; Today, 2016).

Adoption AI and BT in Auditing process literature is increased in the last few years, it is essential to realize that the impact of Artificial Intelligence and Blockchain in Auditing Process in both ways positive and negative (Al-Sayyed et al., 2021; Alaba & Ghanoum, 2020; Ali, 2022; Bai, 2017; Greenman, 2017; Guo & Yu, 2022; Haloush, Alshurafat, & Alhusban, 2021; Jaradat, Al-Dmour, Alshurafat, Al-Hazaima, & Al Shbail, 2022; E. Mansour, Alzyoud, Abuzaid, & Alshurafat, 2023; Popper, 2016; Puthukulam, Ravikumar, Sharma, & Meesaala, 2021; Chi Zhang & Shah, 2023), This increase has been driven by the important applications of Adoption AI and BT in Auditing process for enterprises and their shareholders as well as the heightened concern about fraud against companies and organizations (Almasria, Airout, Samara, Saadat, & Jrairah, 2021; Alrabei, 2021; Ananzeh, Alshurafat, Bugshan, & Hussainey, 2022; Ananzeh, Alshurafat, &

Hussainey, 2021; Dahmash, Al Salamat, Masadeh, & Alshurafat, 2021; E. M. Mansour, 2016; Zehong & Li, 2018; Chanyuan Zhang, 2019).

Adoption AI and BT in Auditing Process topics have been examined through a variety of methodologies, archival data, survey investigation methods and experiments research (Guo & Yu, 2022; Kokina & Davenport, 2017; E. M. Mansour, 2016; Schmitz & Leoni, 2019), the Adoption AI and BT in Auditing Process not only symbolizes a great variety of viewpoints but also covers a wide range of research problems and issues. Despite the importance and scope of Adoption AI and BT in Auditing Process, a comprehensive review of the literature on the Benefits and Challenges of Adoption AI and BT in Auditing Process is still needed.

The objective of this paper is to synthesize the significant volume of practical work in Adoption AI and BT literature in the Auditing Process context. This paper also aims to identify gaps in the adoption AI and BT in Auditing Process area and to suggest possibly fruitful areas for future research.

More particularly, the contributions of this paper to adoption AI and BT in Auditing Process literature include the following, first of all, examining the importance of the adoption AI and BT in Auditing Process, Next, highlighting the benefits adoption of AI to accounting and auditing professions. Third, emphasizing the benefits adoption of BT in Audit process, fourth, highlighting Challenges adoption of AI in Audit process. Fifth, highlighting Challenges adoption of BT in Audit process sixth, this review improves to support initial knowledge about what the Benefits and Challenges of Artificial Intelligence and Blockchain adoption in Auditing Process by providing A Research Agenda which may help in the process of developing accounting process, Finally, the total contributions of this paper prime to develop the understanding of an important and add a part of knowledge that is straight connected to the enterprises and shareholders development through different tools including, Fraud reduction, Reducing the human role in the auditing and accounting career, Increasing the efficiency of auditing and accounting, speed up audit tasks, saving time and effort together with Increasing Audit Quality

This paper is structured into five main sections. The next section illustrates a background of Audit Process, Artificial Intelligence and Blockchain. The third section presents the research design. The fourth section shows the findings of this research. The final section argues the findings and concludes this paper by highlighting the implication of this research.

Background

1- Background of Audit Process

Knowledge the audit process makes it potential to understand the significance and importance of Adoption AI and BT in Audit process, audit processes are the actions undertaken by auditors to find an evidence to form suitable judgments and opinions on the financial statement, no two audit processes are correctly same for the reason that the processes usually depend on the success of the internal control system and risk factors of the client, AI and BT are adaptable to improving efficiency in each step of actions in audit process. It is related to an assemblage in which an output of one step becomes the input of the next step (Issa et al., 2016; Kokina & Davenport, 2017).

Rendering spot to Chicago State University (2022) clarified the audit process is consists of four stages: Planning (During the planning portion of the audit, the auditor informs the client about the audit, discusses the objectives of the audit in a formal meeting with the firm's management, gathers information on critical processes and plans the remaining audit steps), Fieldwork (It is during this phase that the auditor determines whether the controls identified during the preliminary review are operating effectively and in the manner described by the client, and the fieldwork phase ends with a list of key findings from which the auditor will prepare a final version of the audit report), Audit Report (At the conclusion of fieldwork, the auditor prepares a "draft" report, is prepared for the unit's operating management and is submitted for the client's review before the exit conference) and Follow-up Review (Client response documents are reviewed and actions taken to resolve audit findings may be tested to ensure desired results have been achieved. All findings not resolved will be addressed in the follow-up report), Also In Kim, Teo, Bhattacherjee, and Nam (2017) find "The audit process may focus on a firm's systems, applications, information processing facilities, system development activities, enterprise IS architecture, and communication networks".

with provide backing to Knechel and Salterio (2016) they summarize the audit process into four steps first of all argue the main steps of auditing include pre-planning (Pre-engagement), planning, understanding the entity, risk assessment, documentation, completion, and reporting
The first stage of auditing is the pre-engagement steps, the aim of pre-planning is to enable the auditors to decide whether it is appropriate to agree or don't agree to new clients in addition to the existing ones. For this reason, the auditors check the internal processes and procedures of the company to decide whether the client should be accepted or not, the second step in the auditing process is planning. The idea of planning is to improve the total plan to be applied by the auditor from the beginning to the ending of the process, although surprising actions might sometimes occur that may justify changing the audit strategy, the outcome of the planning process is the auditing plan that defines the timing of work, entire, nature and audit strategy, The third step is that the knowledge of the object's control environment, this is part of the execution phase, this understanding enables the auditor to expect the risk of material errors, auditors are likely to find a

thorough view of the client and the industry it operates, the final step in the auditing process is closure and reporting, this step needs the auditor to estimate and evaluate the relevance and appropriateness of the evidence gathered for the auditing process the completion process requires the auditor to ensure that the entire process has been documented and the evidence is appropriately organized.

Figure 1 Audit Process Model
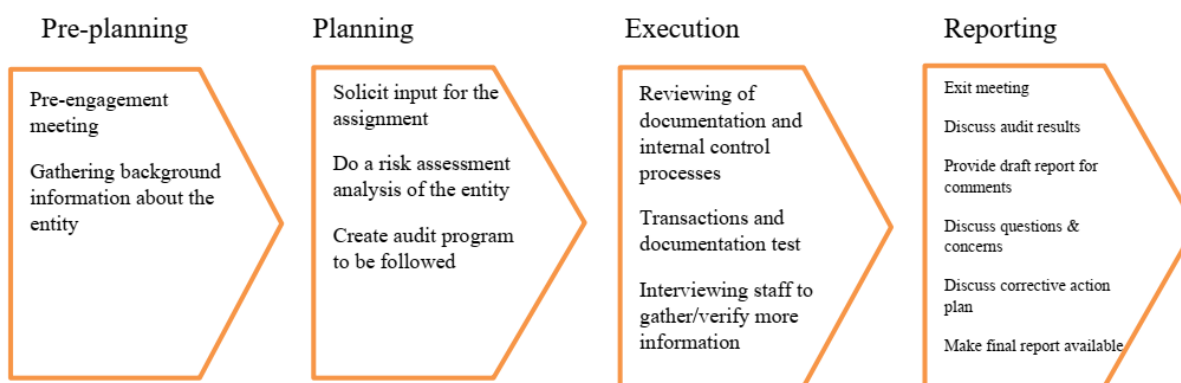
2- Background of Artificial Intelligence

More than 50 years ago, specifically in 1955 at the Dartmouth Conference, the term "Artificial Intelligence" was first born, and it is considered a new step in the study of how machines simulate human intelligence (Caiming Zhang & Lu, 2021), (AI) is a term first coined by John McCarthy, a famous computer scientist in 1955 who defined artificial intelligence as "the science and engineering of making intelligent machines" (Hernández-Orallo, 2017). Additionally, Kaplan and Haenlein (2019) defined Artificial intelligence as "a system's ability to correctly interpret external data, to learn from such data, and to use those learnings to achieve specific goals and tasks through flexible adaptation".

At first, the inventions looked to change some industries but over time technology has become an integral part of all sectors, it is playing an important and evolving role in how we understand and interact with the world around us, For example, in world Economic Forum Shift (2015) indicated that in the Deep Transformation Survey Report on Technological 75% of respondents (consisting of 816 CEOs and experts from the ICT sector) agreed that a tipping point would be reached at 30 % of companies audits done by AI in 2025.

The concept of AI technology in auditing is not entirely new because it has been helpful as a decision support device for computer audit specialists for decades earlier (Hansen & Messier, 1986) However, due to continuous advancements in technology, the availability of big data and processing control, there is cause to expect that it will continue to make a significant impact in

auditing field now and in future years (H. Alshurafat, Beattie, Jones, & Sands, 2019a, 2020; H. Alshurafat, Shbail, et al., 2023; H. A. Alshurafat, 2019; Kokina & Davenport, 2017).

As a result of the exponential increase in data, auditors need to enhance processing capacity while maintaining the effectiveness and reliability of the audit process, one strategy to reach this goal is to introduce AI-based technology with auditing to automate tasks turning inputs into outputs, instead of manual input and replacing them with AI systems. However, it is hard to imagine an aspect of auditing that does not require AI assurance or the help of AI (H. Alshurafat, Al-Mawali, & Al Shbail, 2022; H. Alshurafat, Al-Msiedeen, et al., 2023; H. Alshurafat, Ananzeh, Al-Hazaima, & Al Shbail, 2022; H. Alshurafat, Beattie, Jones, & Sands, 2019b; Kokina & Davenport, 2017).

3- *Background of Blockchain*

Blockchain (BT) technology represents the idea of transferring valuable digital assets such as currency without any third-party intermediary, it can be described as a series of blocks used to establish or record the ownership of assets between parties (Liu, Wu, & Xu, 2019), BT is an ingenious solution to eliminate the need for a trusted intermediary in many areas of financial relationships and accounting because centralization makes a long lag and hefty fees in the operations.

BT is considered a new way to record, process, and store financial operations (Wang, Zheng, Xie, Dai, & Chen, 2018), although BT technology is still in its infancy and early development, Big Four accounting companies, and many financial institutions have already observed the successively potential of using BT in many operational and services processes, especially auditing (Bajpai, 2017).

Figure 2 History of block chain
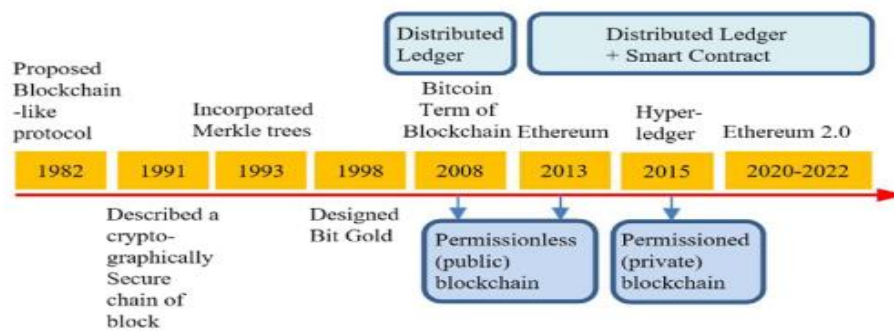
source : (Guo & Yu, 2022)

Research design

The conceptualization of this research design could top be defined as a review article (Petticrew & Roberts, 2008). The aim of this paper is to require an understanding of the benefits and challenges of adoption artificial intelligence and blockchain in auditing process based on the literature reviews in this area. In line with the research aim and objective, this study has taken two stages in the search for impact artificial intelligence and blockchain in auditing process articles.

The first stage involves a search for keywords strings that were comprised [Artificial Intelligence] and [Auditing Process]; [Artificial Intelligence and Blockchain in Auditing]; [AI and BT adoption in Auditing Process]; [Benefits and challenges adoption AI and BT in Auditing Process] [Fraud reduction and increasing the efficiency and relevance of auditing in integrate AI in Audit process] and [Highest cost of application AI in Auditing and security vulnerabilities risk attacks within adoption blockchain in auditing]

The following databases were reviewed to retrieve relevant studies: Elsevier; EBSCOhost; Wiley Online Library Scopus; Taylor and Francis online and Springer Link Furthermore, this first step includes a review of International Journal of Accounting Information Systems, technology Opportunities and Challenges After the Covid-19 Pandemic besides Blockchain: Research and Applications, secondly step adoption Artificial Intelligence and Blockchain in in Auditing Process special issues as well third the journals that occasionally publish research in impact AI and BI in Auditing process

The second stage encompasses snowballing search for the reference list of all identified articles in the first step. The search was limited to articles published in English, because In Jordan is rarely few studies talked about this matter and investigate this effect, especially two types of these new technologies with each other (AI & BT) and the impact on the effectiveness of the audit process in one paper, most of the articles were published in the last decades. From the search, the relevant studies were identified and critically analyzed. The selected studies for the review were those that discussed adoption Artificial Intelligence and Blockchain in Auditing Process

Findings.

1- *Benefits of Artificial Intelligence adoption in Audit*

- ***Fraud reduction along with increasing compliance among international standards***
- ***Speed up audit tasks, saving time and effort together with Increasing Audit Quality and Reducing human error in addition to keeping information reliability and relevance as well as encourage the improvement of traditional auditing***

Several research papers (Baldwin et al., 2006; Omoteso, 2012; Chanyuan Zhang, 2019) agree that when AI is used in entries rather than manual entries, it significantly reduces human error and

speeds up audit tasks while maintaining data reliability. In some cases, AI can detect fraud in the presented financial statements and regularly review contracts to make recommendations, at the same time, AI systems collect and analyze information, making it easier for auditors to identify important areas that require more attention; Therefore, the audit profession is adapting to this change by AI to keep pace with the transformation.

In Alaba and Ghanoum (2020) argued that as a result of the rapidly increasing number of information and data are witnessing today, auditors need to enhance processing capacity although maintaining the effectiveness and reliability of the audit process, the paper concluded that after collecting the data used through a semi-structured interview conducted with nine professional Swedish auditors from the big four auditing firms in Sweden, adopted that using of AI tools in their auditing process as evidence that AI has a broad positive impact on quality. The comprehensive audit process indicates that the use of AI systems enhances the effectiveness of all steps of the audit process, in addition to increasing professionalism and compliance with international standards arising from (IFRS), the paper also concluded that the use of possible technical audit systems instead of using traditional audit tools and that the main relation between AI and the effectiveness of the audit process is to reduce errors that previously caused auditors to repeat work, finally interviewees agreed that the use of AI reduces heavy human work that increases the risks of error, manipulation, and omission.

According to Al-Sayyed et al. (2021) The artificial intelligence techniques helped in collecting data for the audit process, which contributed to a better understanding of the stages of the audit process, As well as because this great development that arose in the information age, forced us to deal with huge data in a short time, and because the audit sector is fully aware of the challenges that have been imposed with the development of life, it was necessary to integrate artificial intelligence technology into the audit process, which leads to understanding and analyzing data with high efficiency and time And less effort, which leads to the quality of the audit.

In Gusai (2019) This paper aimed to investigate the importance of AI in auditing area and measure the judgment of forthcomings regarding artificial intelligence in auditing and accounting areas and conclusion that AI surfaces way for a better and conducive environment in the field of accounting and auditing, for the Zehong and Li (2018) This article examined using artificial intelligence to avoid accounting and auditing fraud as well as to generate positive way effect on accounting information quality, this study analyzed the paper intelligence effect the accounting and the results reached that AI in accounting should improve its own seven aspects of abilities and become a comprehensive qualified personnel.

To more detailed examination of the strategies, Kokina and Davenport (2017) argued that the emergence of artificial intelligence in auditing and accounting and the current resources of Knowledge technologies and the Implication and effect these technologies will have on human auditors and the audit process itself and they argue the current AI tools are increasingly able to scan for keywords and outlines in complex electronic papers and documents to find and identify relevant accounting information from several sources, such as bills, contracts, and transactions.

as well In Bai (2017) this paper studied of the purpose of artificial intelligence in the subject of audit facilities in major international accounting corporations, this study investigated in the impact of artificial intelligence on the audit and the relevant auditing specialists and reliable, for instance AI tools can advert and spot if a company records strangely and unusually in a high deals or sales figures just earlier the finish of a reporting period or disburses remarkably high payments right after the end of the reporting period

As well as in Greenman (2017) Improvement in the area of AI can definitely be a great help to human efforts this research explored the Effect of Artificial Intelligence on the Accounting and Auditing Profession. The Prospective tasks of bookkeeping or process-driven assignments are extra possible to be changed with a computerized technology than the higher value specialties that involve professional judgment. As well the research confirmed that Several believe that the younger age group of accountants need to know, understand and be prepared to work alongside AI.

In E. M. Mansour (2016) spoke that despite the efforts made by professional auditing bodies to help stimulate the application of contemporary auditing techniques among audit firms to keep pace with the rapid growth in the use of information technology among business enterprises, and the extent of Jordanian external auditors' acceptance and the global trend of computer-assisted auditing, However, the use of computers in auditing techniques in Jordan (CAATs) is still somewhat low, Therefore, the study relied on a qualified questionnaire sent to 200 external auditors to obtain data, the study concluded that auditors currently rely on CAATs, and these tools have enabled auditors to perform data analysis without the need to draw sample volumes while at the same time organizing and processing data still requires extensive human efforts.

A recent study by (Al-Dalaien & Bader, 2018; Alhusban et al., 2020; H. Alshurafat, 2021; H. Alshurafat, Al Shbail, & Almuiet, 2021; H. Alshurafat, Al Shbail, & Mansour, 2021; H. Alshurafat, Al Shbail, Masadeh, Dahmash, & Al-Msiedeen, 2021; Jaradat et al., 2022; Kanakriyah, 2017) they found accounting information systems (AIS) and Business Intelligence (BI) positively affected the performance of Jordanian banks and insurance companies in increased profitability, reducing risks, making decisions, speed of performance, and accuracy in performing tasks while maintaining the relevance of financial statements without delay in timing

As for the role of accounting information systems (AIS) on internal control (IC) and external control, there are two studies, the first one discussed about the role of (AIS) in enhance the efficiency of (IC) in Jordanian commercial banks (JCBs), Alrabei (2021) the study concluded that AIS enhance the efficiency of IC in JCB, the results show an important positive effect between automatic identification systems (relevance, reliability, timeliness, ability to understand, completeness, and verifiability) with IC, the study recommended that JCBs recompense more attention to AIS when conducting IC as a result of a positive impact on the performance of

Jordanian commercial banks, In the external control a study by Almasria et al. (2021), for measuring the impact of AI on the effectiveness of the audit process in external control, concluded that external auditors believe in the important role of AIS on the quality of external audit procedures, the results also show how AIS can improve the quality of external audit performance by contributing significantly to improving the quality of external audit procedures (planning process audits, audit testing procedures, risk assessment, and audit implementation) indicating the availability of high-quality Jordanian audit firms components for computer applications,

Finally in Today (2016) Overall, ''as audits become increasingly automated, there will be less emphasis on ticking and tying and vouching, and greater emphasis on understanding the overall picture painted by the data, better understanding inputs and assumptions, and identifying and evaluating trends, patterns, and outliers''

Added that Audit firms make significant investments in advanced technology to obtain an efficient and effective audit process ,for example, EY announced an investment of $400 million to work on applying big data analytics to its audit practices (Alles & Gray, 2019).

in the same approach, instead of Sweden in Malaysia, Khan, Suresh Balasingam, and Arumugam (2022) found the same result, which is agreement all auditors working (PWC, Deloitte, KPMG, AT THEY, BDO, also assorted auditing companies) in Malaysia, AI positively affects the effectiveness of all stages of the audit process and greatly enhances the performance of the audit process.

2- *Benefits of Blockchain adoption in Audit*

- ***Reducing the human role in the auditing and accounting career and BT allows accountants and auditors to save costs in addition to eliminate time delays in carrying out these tasks that reduce the risk of human error***
- ***Increasing the efficiency of auditing and accounting in data recording, settlement and reviewing***

Research papers (Abdulla, Alfalasi, & Grassa, 2022; Kokina et al., 2017) argue that BT can significantly reduce the human role in the accounting career or possibly eliminate them entirely in the future also added that BT will eliminate time delays due to reducing the accuracy and relevance of financial statements that occur between auditors as a result of increase the number and size of financial statements.

As for BT, in a study conducted at RMIT University in Australia by Schmitz and Leoni (2019) in the impact of blockchain technology on the effectiveness of the accounting and audit process, the study finds that the most important topics discussed in the world of scholarly business and

professional sources today are issues of corporate governance, transparency and trust in the blockchain ecosystem, blockchain-enabled continuous auditing, innovative contract applications, and paradigm shift in the roles of accountants and auditors, due to these four topics, this study observed at providing practical implications for accountants and auditors on how to approach blockchain development, the study concluded that one of the greatest advantages of BT that accountants and auditors emphasized in the field of auditing technology increases the efficiency of accounting data recording, settlement and review, and BT allows accountants and auditors to save costs and time in carrying out these tasks that reduce the risk of human error, however at the same time the study also confirmed that BT in sometime ability to detect fraudulent transactions may be limited.

On the same topic for another study led by Liu et al. (2019) researched about the role of auditing and accounting performance in light of blockchain technology, the study showed that BT technology is one of the new ways to record, process and store transactions and financial information, and it has the potential to fundamentally change the view of the accounting profession and fundamentally reshape the business ecosystem, the study concluded that the effects of blockchain on auditing face opportunities and challenges for auditors.

The Big Four accounting firms are also investing big values in the application of big data with the aim of obtaining quality and exceptional customer service.

for instance, the first step in the initiation of the BT initiative was taken by Deloitte (2016) argued that using BT for auditing reduces the time that auditors need to do their jobs and the BT can create smart contract applications such as invoices that are paid automatically, Then Ernst & Young EY (2017) followed it up as the first consulting firm to accept services with Bitcoin, after that provided a number of other services to facilitate commercial use BT technology, Later on, KPMG (2017) partnered with Microsoft to joint projects using cases that apply BT technology to business models and operations, Finally, PWC (2017) released digital asset services using BT technology and plans to adopt BT in direct production systems by 2025(Abu Suileek & Alshurafat, 2023; M. Al Shbail, 2022; M. O. Al Shbail, Alshurafat, Ananzeh, & Al-Msiedeen, 2021; M. O. Al Shbail, Alshurafat, Ananzeh, & Bani-Khalid, 2022).

3- *Challenges of Artificial Intelligence adoption in Audit*

- ***Highest cost of application artificial intelligence in auditing process as well as keeping the auditors following up the latest updating in AI system adoption in audit process.***

Corresponding to Puthukulam et al. (2021) the main challenges in applying the artificial intelligence in auditing process are the high the cost of implementation and it needs to train internal

auditors in the field of AI, as well as following continuous updating of AI according to the latest developments and correct training of auditors represents an additional expense for the company, which means a great challenge for organizations with limited financial conditions, In the same idea Ali (2022) argue auditors also need to understand the basics of AI, identify AI risks and opportunities, be prepared to reframe their role, and adapt to process automation.

4- Challenges of Blockchain adoption in Audit

- ***Security vulnerabilities risk and attacks coupled with racial biases within Adoption blockchain program in Auditing***

with reference work to Chi Zhang and Shah (2023) Data security challenges, current issues and legal issues continue to be barriers to the use of blockchain technology in internal audits, the challenges audit firms need to face in blockchains represented in no centralized authority to report cyberattack, Difficult to reach consensus rules among all participants, when acting as an organizational agent.

on June 17, 2016, an unknown hacker managed to steal nearly $50 million US dollars' worth of Ethereum. this fraud , due to a vulnerability within the software that was used to manage Ethereum wallets, this breach suggests that successful adoption of blockchain strongly relies on the safety of the security environment (Al-Hazaima, Al Shbail, Alshurafat, Ananzeh, & Al Shbeil, 2022; M. O. Al Shbail, Esra'a, Alshurafat, Ananzeh, & Al Kurdi, 2021; Al Shbeil, Alshurafat, Taha, Shbail, & Obeid, 2023; Alaqrabawi & Alshurafat, 2021; Popper, 2016).

Conclusion and discussion:

As shown in Table 1, a summary of findings of qualitative review of the literature conceded many themes spread between the benefits and challenges points, based on the previous literature review and this paper's analysis, Adoption Artificial intelligence and blockchain in auditing process are a field with many applications, After its lines in the fields of accounting and auditing and its multidisciplinary nature, Adoption AI and BT in auditing process combines financial, technological, adjudicative and investigative knowledge, formulating the impact of AI and BT in auditing process knowledge with accounting and auditing enhances the value of service that might be provided from auditors to enterprise.

Many opportunities are available to the Adoption AI and BT in auditing process for stakeholders for instance, client's students, educationalists, and experts, As regards to client's and experts, Adoption AI and BT in auditing process provides its experts and clients with many tools to provide specific services that would be by fraud reduction and profession to deter fraud and reduce the risk of being a fraud victim, Regarding the students and educationalists, they would be clever to improve their understanding and knowledge in auditing and accounting by mixing their auditing

and accounting learning with the full knowledge of Adoption AI and BT in auditing process or at least with one part of Adoption AI and BT in auditing process knowledge.

There are several avenues future research for the improvement of Adoption AI and BT in auditing process, first of all maintain a high quality of Adoption AI and BT in auditing process by controlling the entry to the profession, secondly enhance the quality of Adoption AI and BT in auditing process education through developing consistent education, which is corresponded to the real work of impact AI and BT in auditing process, finally enhancing the reputation of Adoption AI and BT in auditing process as a profession by increasing the public recognition for it through offering workshops that enhance the public awareness of fraud and its consequences on the society and how impact AI and BT in auditing process could help to deter the fraud risk

Table 1 summary of findings

Benefits adoption of AI & BT in Audit process	Challenges adoption of AI & BT in Audit process
1. Fraud reduction along with increasing compliance among international standards.	1. Highest cost of application artificial intelligence in auditing process as well as keeping the auditors following up the latest updating in AI system adoption in audit process.
2. Speed up audit tasks, saving time and effort together with Increasing Audit Quality and Reducing human error in addition to keeping information reliability and relevance as well as encourage the improvement of traditional auditing.	2. Security vulnerabilities risk and attacks coupled with racial biases within Adoption blockchain program in Auditing.
3. Reducing the human role in the auditing and accounting career and BT allows accountants and auditors to save costs in addition to eliminate time delays in carrying out these tasks that reduce the risk of human error.	
4. Increasing the efficiency of auditing and accounting in data recording, settlement and reviewing.	

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