The Application of Artificial Intelligence (AI) in Accounting and Auditing: A Narrative Literature Review

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Abstract

This study shows an overview of the prior research in the field of AI applications in accounting and auditing. this would appraise how the AI technology applications are prepared for accounting and auditing, providing information on the risks and probable benefits. To achieve these objectives, the research would be a narrative literature review using articles from the Scopus database that were published between 1992 and early 2022. After examining and analysing these studies according to the historical approach, the areas of artificial intelligence that can be used were identified, besides the types of these applications and the role assigned to each application with the aim of supporting the financial auditing and accounting process. Then, the study concluded that the application of AI in the accounting and auditing provided benefits of greater efficiency, productivity, and accuracy with risk of income and wealth inequality, the extinction of traditional jobs, and unskilled employees.

Keywords: Narrative Literature Review, Artificial Intelligence, Accounting, Auditing, Blockchain Technology.

Abbreviations: Artificial Intelligence (AI) - Robotic process automation (RPA) - Expert Systems (ES) - Decision Support System (DSS) - Neural Networks (NN) - Natural Language Processing (NLP) - Robotic Process Automation (RPA) - Robotic Process Automation (RPA)

المستخلص

تناولت الدراسة تحليل عن الدراسات السابقة المرتبطة بتطبيقات الذكاء الاصطناعي في مجالي المحاسبة والمراجعة. هدفت الدراسة الي تحليل الأدبيات المتعلقة بتطبيقات الذكاء الاصطناعي بغرض كيفية إعداد تلك التطبيقات والاستعانة بها في مجالي المحاسبة والمراجعة، وكذلك توفير معلومات عن المخاطر والفوائد المحتملة من الاستعانة بتلك التطبيقات. ولتحقيق اهداف الدراسة اعتمدت الدراسة على اجراء المراجعة السردية للعديد من مقالات من قاعدة بيانات Scopus والتي تم نشرها بين عام ١٩٩٢ وأوائل عام ٢٠٢٢. وبعد فحص وتحليل تلك الدراسات طبقا للمدخل التاريخي تم تحديد مجالات الذكاء الاصطناعي التي يمكن الاستعانة بها وكذلك أنواع تلك التطبيقات والدور المنوط لكل تطبيق بهدف دعم عملية المراجعة والمحاسبة المالية. وقد خلصت الدراسة إلى أنه غالبا ما يتوقع أن يوفر الاستعانة بتطبيقات الذكاء الاصطناعي في مجالي المحاسبة والمراجعة العديد من الفوائد التي تتمثل في زيادة كفاءة وانتاجية ودقة عمليات المراجعة والمحاسبة ، وعلى الجانب الاخر فان هناك تحديات تكمن في عدم التكافؤ في رؤوس الاموال والارباح بين الشركات المطبقة لتلك التكنولوجيا، وكذلك اختفاء بعض الوظائف التقليدية، ووجود عمالة غير مؤهلة للتعامل مع تلك التطبيقات .

الكلمات الدالة: التحول الرقمي – الذكاء الاصطناعي – المحاسبة – المراجعة – المراجعة السردية للأدبيات

1- Introduction

Artificial intelligence represents one of the fastest-growing fields. The origins of the field of artificial intelligence date back to 1956 and are related to the Dartmouth Conference on Artificial Intelligence, where the term "artificial intelligence" was used for the first time. The conference focused on different aspects of artificial intelligence, such as automation, computers using a language, and their ability to self-improve. Sources link the beginnings of the field of artificial intelligence into history to Alan Turing and his 1950 article on computing machinery and intelligence, focused on whether machines can think. Over the years, computers have expanded, including distinguishing patterns of user behaviour (Buchanan, 2005). Another important step in the development of artificial intelligence was deep learning and the machine learning method. These methods made it possible to include artificial intelligence not only in companies as a part of the decision-making process but also in the everyday activities of individuals. Artificial intelligence can be used by the biggest automotive industry producers, robots replacing human workers in the food industry, fast-food businesses (Grewal, 2014).

Literature reviews are useful when the aim is to provide an overview of a certain issue or research problem. As with all research, the value of the literature review depends on what was done, what was found, and the clarity of the reporting. Always, the author begins by describing previous research to assess the research area, motivate the aim of the study, and justify the research question and hypotheses. However, for a literature review to become a proper research methodology, follow the proper steps which taken to ensure the review is accurate. A literature review may be the appropriate methodological instrument to provide answers (Moher et al., 2009).

2- Research problem

It is believed that the field of the application of artificial intelligence (AI) in accounting and auditing has reached a level of development that necessitates an in-depth and comprehensive evaluation of the application of artificial intelligence (AI) in accounting and auditing research. The previous review studies are better suited to be integrated with research that includes a comprehensive overview of the existing knowledge on this topic. Such work helps to consolidate the achievements of the field and craft a research agenda for years to come. By using many articles, this research addressed several questions related to AI-accounting and auditing literature:

- What is the trending literature on accounting and auditing concerning AI?

- How are AI technology applications prepared for accounting and auditing?
- What are the benefits and risks correlated with the AI technology applications prepared for these fields?
- How do you adapt to the AI Interruption?

3- **Research objectives :** The objective of this study was examining the literature that provided to the trending literature on accounting and auditing in relation to AI. Then it examined how AI technology applications were set up for accounting and auditing, offering information on risks and potential benefits. After that, adapting to the AI Interruption has been presented. Then, some benefits and risks correlated with the AI technology implementation had been explained.

4- **Research importance:** Literature reviews play a main role as an establishment for all keys of research. They can serve as a basis for knowledge development, create guidelines for policy and practice, and provide evidence of an effect in a particular field. As such, they serve future research and theory. The importance of this study is to examine the literature that adds to the trending literature on accounting and auditing in relation to AI. The application of AI in the accounting and auditing industries will serve as a model for future studies in the subject.

5- **Research methodology:** Literature reviews can be conducted as a narrative review, a descriptive review, a vote count, or a meta-analysis. This research followed a narrative review. This approach was designed for topics that have been conceptualised differently and studied by various groups of researchers. A narrative review often looks at how research within a selected field has progressed over time or how a topic has developed across research traditions. This approach holds that the research process should be clear and should have a developed research strategy that enables readers to assess whether the arguments for the judgements made were reasonable, both for the chosen topic and from a methodological perspective (Wong et al., 2013). The narrative review approach is a content analysis which commonly defined as a method for identifying, analysing, and reporting patterns in the form of ideas within a text. This type of review can be useful for detecting ideas, theoretical perspectives, within a specific research methodology or for identifying components of a theoretical concept. A potential contribution could be the ability to map a field of research, synthesise the state of knowledge, create an agenda for further

research, or provide a historical overview or timeline of a specific topic. (Ward, House, & Hamer, 2009)

6- **Background**: Digitalization is recognised as a serious, worldwide influencing factor in how businesses are run and the degree of their success. There are many technologies that are associated with digitalization; they include artificial intelligence, big data analytics, blockchain technology, and robotic process automation. Because these technologies are expected to play a major role in the evolution of the accounting and audit professions, they will be shown briefly in the following (Muro et al. 2017).

6-1 Artificial Intelligence: Artificial intelligence (AI) is increasingly recognised as one of the most promising human inventions. Artificial intelligence (AI) is the ability of machines like computers and robots to learn and act autonomously (Dirican, 2015). AI has been employed in all sectors, transforming the way organisations operate. Although AI has been around for a while, it is increasingly becoming part of our daily lives. AI is considered an umbrella term for technologies that can be used either by themselves or in combination with each other to reproduce mental behaviours that are shared among humans, such as learning and problem solving. Generally, AI engages in various activities that are based on human information processing, such as pattern recognition, learning, and planning. Most AI is applied in language recognition, visual pattern recognition, or logical problem solving (Issa et al., 2016).

6-2 Big Data Analytics: Big data is characterised by the four Vs: volume, velocity, variety, and value. As a result of dropping down the costs of data storage, the volume of data has grown exponentially in the last few years (Breur, 2016), and the speed of data generation has also dramatically increased over the last few years. Data in this era is characterised by being generated from various sources with no consistent form; therefore, it is stored in an unstructured way. Accordingly, big data represents a new important tool to organise enormous, fast, and disordered data and put it in the form of valuable knowledge. Although the economic growth that big data is expected to provide, it also brings up some risks, such as privacy violations and discrimination (Cuquet & Fensel, 2018).

6-3 Blockchain Technology: A blockchain can be described as a decentralised digital ledger that records transactions between two parties in a peer-to-peer (P2P) network. where all participants have access to common records, which is

the opposite of the typical current situation where different parties have access to different databases that are updated and edited separately (Vaidyanathan, 2017). Accordingly, blockchain technology is mainly considered fraud-proof. An additional advantage is that distributed ledgers act as a world bookkeeping service, which makes it easy to track an audit trail by eliminating the need to cross-check various IDs through different databases (Dai & Vasarhelyi, 2017).

6-4 Robotic Process Automation: Robotic process automation (RPA) can be defined as preconfigured software that uses business rules and a predefined sequence of steps and movements to complete the automatic implementation of a combination of tasks, processes, activities, and transactions to deliver a result or service". Robotic process automation is a simple programming tool that does not require a lot of computer knowledge and that can be easily used to automate time-consuming, manual, rule-based tasks faster and cheaper than other automation technologies (IEEE, 2017).

7- Artificial Intelligence in Accounting and Auditing

Artificial intelligence is important and relevant to accounting and auditing. Although the technical aspect of the technology of artificial intelligence (AI) does not fall within the traditional business discipline, the influence of AI has been a subject matter of business education and practices. The application of AI technology can be found across various business functions, including production, distribution, marketing, accounting and finance, audit, research and development, human resource management, etc. (Kokina & Davenport, 2017). Some accounting activities and tasks are repetitive and mechanical in nature. However, the information resulting from these is important as an accounting output in terms of evaluating the company's financial position and performance. It helps eliminate human error during primary entry booking, and, as a result, the reliability of accounting information increases. All of these can make the field of accounting suitable for artificial intelligence applications (Guo, 2015). Auditing also heavily relies on accounting information. Audit tasks require, among other activities, decision-making, sample selection, and evaluation. Applying artificial intelligence during the audit procedure may therefore increase efficiency and, again, eliminate human error. Generally, artificial intelligence may be beneficial in phases of auditing that require the performance of rule-based tasks, especially the time-consuming ones. As for the history of artificial intelligence in accounting and auditing, the first attempts date back to the 1980s. It identified the areas of application of various computer-based support systems in auditing, particularly decision support

systems and knowledge-based expert systems, both of which increase the effectiveness of audit decision-making (Reddy et al., 2019).

8- **Prior Literature Review**

The study highlighted major views on how AI may revolutionise human life. For this purpose, research studies conducted between 1992 and 2022 that are also available as open-access resources were selected. There are research studies in AI, but not as many in AI in accounting and auditing. Table 1 summarises a few research studies that investigated the application of AI in accounting and auditing.

Studies	*Focus of the Study*	*Discussed AI Technologies*
Meservy et al. (1992)	● Application of AI in Accounting, Tax and Audit Services.	● Expert/decision support system ● Simulation Model
O'Leary (1995)	● Taxonomy of papers/studies conducted in the areas of Accounting, Finance and Management relating to AI.	● Multiple Agents ● Neural Networks ● Knowledge-based and Expert Systems ● Case-based Reasoning ● Machine Learning ● Constraint Logic Programming ● Cognitive Models
Yang & Vasarhelyi (1995)	● Summarizing the then existing application of expert systems in accounting. ● Classification of application of ES in accounting under five categories: Auditing, Taxation, Financial Accounting, Personal Financial Planning and Management Accounting.	● Expert System
O'Leary & O'Keefe (1997)	● Analyzing relative impact of expert systems on auditing and taxation using Perrow's sociological framework.	● Expert System
Zhao et al. (2004)	● Outlining threats & challenges to traditional auditing ● Comparison between traditional and continuous auditing ● Future outlooks on continuous auditing	● Continuous Auditing ● Expert Systems
Lam (2004)	● Investigating the ability of neural network to integrate fundamental and technical	● Neural Networks ● Backpropagation algorithm

Studies	Focus of the Study	Discussed AI Technologies
	analysis in financial performance prediction.	
Baldwin et al. (2006)	● Review of the accounting and audit problems that could use application of AI. ● Breaking down and outlining audit tasks where various AI technologies can be augmented.	● Genetic Algorithms ● Neural Networks ● Fuzzy Systems ● Hybrid Systems
Omoteso (2012)	● Review of existing research and use of AI systems by the auditors. ● Predicting future directions of research and software development in AI. ● Mapping of the development process of AI systems in auditing.	● Expert Systems (ES) ● Neural Networks (NN)
Huq (2014)	● Presenting how AI aids in the development of accounting system. ● Analyzing relative impact of AI on auditing and taxation.	● Machine Learning ● Speech Recognition ● Automation
Greenman (2017)	● Exploring the impact of AI on the accounting profession.	● Automation ● Cognitive Technologies ● Document Review
Bizarro, P.A. and Dorian, M. (2017)	● Defining the benefits and risks occurring from the integration of AI in accounting and auditing.	● Automation
Kokina & Davenport (2017)	● Providing an overview of the emergence of AI in accounting and auditing. ● Discussion on the impact of cognitive technologies on human auditors and the audit process itself. ● Industry examples of AI implementation. ● Looking at some of the potential biases that come with artificial intelligence development and application.	● Cognitive Technologies ● Automation
Chukwudi et al. (2018)	● Ascertain the effect of AI on the performance of accounting functions.	● Expert Systems ● Intelligent Agents ● Neural Network

Studies	Focus of the Study	Discussed AI Technologies
Huang (2018)	● Ascertain the effect or Expert System and Intelligent Agents on the performance of the accounting functions.	● Fuzzy Logic ● NLP ● Genetic Algorithm
	● Application of AI in Taxation. ● Case study from China and around the world.	● Automation ● Facial recognition, Image, and Text Recognition ● Knowledge-based query addressing system
Stancheva-Todorova (2018)	● A discussion of a few of the issues that the accounting profession faces in present day context ● Shedding light on some likely future development tendencies in the domain of AI. ● Drawing some conclusions on accounting education in the light of new intelligent technologies and their commercial applications.	● Automation ● Expert Systems ● Fuzzy Logic ● Neural Networks ● Machine Learning
Ukpong et al. (2019)	● Reviewing various accounting and auditing problems and the call for AI application in the discipline. ● Investigation of stakeholders' perspective regarding AI application in Nigerian Banks.	● Automation ● Machine Learning ● Data Mining ● Cognitive Computing ● Natural Language Processing ● Robotics
Reddy et al. (2019)	● Examining Accounting Intelligence's analytical applications and actionable insights from a more disruptive and decision-oriented approach. ● Looking at the perspectives and experiences of the "4-Accounting Giants."	● Robotic Process Automation (RPA) - NLP - Speech Recognition ● Accounting Intelligence Expert Systems (AI/ES) ● Deep Learning ● Cognitive Insights & Engagement
Zemánková (2019)	● Introducing the use of AI in accounting and auditing, with special focus on blockchain technology. ● Providing an analysis of audit aspects benefiting from AI application.	● Decision support systems ● Knowledge-based expert systems ● Genetic algorithms/programming ● Fuzzy systems ● Neural networks ● Robotic Process Automation (RPA) ● Blockchain

Studies	Focus of the Study	Discussed AI Technologies
	● Highlighting the implication of blockchain in auditing. ● Evaluating the AI endeavors of the BIG4.	- Smart Contracts - Smart Audit Procedures
Mohammad et al. (2020)	● Assessment of the impact of AI on the accounting professionals. ● Extend relevant suggestions to the policymakers.	● Automation ● Robotics ● Machine Learning
Ucoglu (2020)	● Review of the present Machine Learning applications in accounting & auditing with focus on the Big 4.	● Machine Learning
Kumar Doshi et al. (2020)	● Investigating how AI creates opportunities and gives rise to threats in the profession, using 12 variables. ● Examining the Accountants' aptitude to embrace technology, using six determinants.	● Overall, AI application (no specific technology discussed)
Lee & Tajudeen (2020)	● Impact of AI-based accounting software on organizations in Malaysia.	● Storing of Image and documents ● Automation of Information Capturing ● Machine Learning ● OCR Technologies
Chukwuani & Egiyi (2020)	● Automation of Accounting Process. ● Highlighting of impacts of AI on Accounting. ● Adaptation to automation by the accountants.	● Robotic Process Automation (RPA) ● Expert Systems ● Neural Networks ● Robots ● Fuzzy Logic
Zhang et al. (2020)	● Holistic review of recent developments in AI, Big Data and Machine Learning. ● Exploration of the evolution of accounting profession faced by various technological advancement. ● Examination of inherent hurdles and opportunities of new technologies posed in front of accounting professionals and pedagogy.	● Machine & Deep Learning ● Artificial General Intelligence ● Blockchain Technology ● Robotic Process Automation - Radio Frequency Identification (RFID) - Speech Recognition - Natural Language Processing - Artificial Neural Networks

9- **Applications of AI in Accounting and Auditing**

Based on a study of the existing literature, the most frequently mentioned areas of Applications include, but are not limited to, the following:

9-1 Expert Systems (ES):

Among various AI technologies applied in accounting, the most developed one is the application of Expert Systems (ES). Expert systems are computer programmes that store an expert's knowledge and simulate his reasoning processes when solving issues in a certain topic. Expert systems are a subset of knowledge-based systems that include an expert's experiences in the system knowledge base. An expert system can be used in auditing, planning, obtaining evidence, assessing audit risk, making audit opinion decisions, preparing the audit report, etc. tasks. In financial accounting, ES may be applied to tasks such as designing AIS and financial statements, processing invoices, entering entries, assessing standards, developing worksheets, etc. Finally, in cost and management accounting, ES has applications in inventory control, cost variance analysis, diagnosis of management control systems, and decisions regarding investments (Baldwin et al., 2006).

9-2 Continuous auditing

Continuous auditing is the methodical collection of electronic audit evidence as a reasonable basis for rendering an opinion on the fair presentation of financial statements made in a paperless, real-time accounting system. moreover, prior studies suggested that continuous auditing is an electronic auditing method that agree to auditors to provide some level of assurance on continuous data while it is disclosed or shortly after it. Continuous auditing is associated with paperless accounting information systems, significant technical hurdles, a lack of standards and guidance, increased value of real-time financial information, and timely audit reports (Zhao et al., 2004).

9-3 Decision Support Systems:

The Decision Support System (DSS) is a computer-based system that assists in the decision-making process. It's a computer system that's interactive, adaptable, and versatile. Essentially, it is created with the goal of assisting in the resolution of a non-structured management problem to improve decision-making. The hidden motive of a DSS is to establish alternatives and outcomes so that a smart decision can be made, whereas ES is established with the goal of automating decision-making and ultimately replacing the human decision-maker. The use cases of DSS can be found in various unstructured accounting and audit tasks (Zemánková, 2019).

9-4 Neural Networks (NN):

A neural network is a machine learning system that replicates the organisation of a human brain (composed of neurons and connections) and can alter its structure to better accomplish the task it has learned. The more complicated neural networks got, the more the term "deep learning" could be applied. the application of neural networks in the analytical review procedure, which is undertaken by the auditors while obtaining audit evidence. Thus, the application of neural networks in risk assessment is a fundamental part of the auditing process (Lam, 2004).

9-5 Deep learning and machine learning:

Machine learning is a field of science concerned with finding patterns in data and developing systems capable of learning from them. Machine learning is the process by which computers learn to think and act with minimum human interaction. Machine learning is a subset of AI that focuses on a specific goal, which is to instruct computers to accomplish tasks without explicit programming. On the other hand, deep learning is a subset of machine learning and is about computers learning to think using an architecture modelled after the human brain. Machine learning can assist in transactions (Zhang et al., 2020).

9-6 Natural Language Processing (NLP):

Natural language processing is an area of study that focuses on teaching artificial models to identify and develop human speech. It is an essential AI technology tool that meets on the copying of human natural language and communication techniques. Areas of application include the processing of unstructured text information, systematic and automatic retrieval and review of documents, and the identification of high-risk cases that deviate from the target terms (Reddy et al., 2019).

9-7 Fuzzy logic:

Fuzzy logic, according to artificial intelligence experts, is a technique of reasoning that resembles human thinking since its methodology represents how humans make decisions. The truth value of variables in fuzzy logic can be any real number between 0 and 1, making it a type of many-valued logic. It's used to deal with the concept of "partial truth" or "degrees of truth", where the truth value can be somewhere between absolute true and absolute false. It is pointed out that for materiality decisions, assessing the risk of management fraud, and for various other qualitative issues, fuzzy systems can be very useful (Baldwin et al. 2006).

9-8 Genetic Algorithm:

A genetic algorithm is a search heuristic based on Charles Darwin's theory of natural selection. This algorithm mimics natural selection, in which the fittest individuals are chosen for reproduction to create the following generation's children. Genetic algorithms rely on biologically inspired operators, including mutation, crossover, and selection, to develop high-quality solutions to optimisation and search problems. Genetic algorithms are a suitable approach to solving the problems of account and transaction classification. It is suggested that genetic algorithms may have potential applications in modelling auditor behaviour in fraud decisions. Other applications of genetic algorithms include bankruptcy prediction (Zemánková, 2019).

9-9 Robotic Process Automation (RPA):

RPA is a type of intelligent process automation (IPA) that depicts logic-driven robots that follow pre-programmed rules and work with primarily structured data. By redefining work and reassigning individuals to higher-value tasks, RPA takes productivity optimisation to the next level. RPA is software that can be used to automate established business processes by running other application software. RPA differs from AI in that it is process-driven, while AI is data-driven. Data preparation for audits, file organisation, data integration from different files, basic audit tests in Excel, data copying and pasting, and manual annotations—all these are the use cases of RPA (Zemánková, 2019).

9-10 Hybrid Systems:

All the audit tasks are not of the same nature, i.e., some involve quantitative analysis, some involve qualitative judgement, and some may involve both. In such cases, hybrid systems of AI technologies are more appropriate. Hybrid systems may involve a combination of any of the above-discussed AI technologies (Baldwin et al., 2006).

10-Benefits and Risks of Implementing AI in Accounting and Auditing
10-1 Benefits

Several studies pointed out the various upsides of AI implementation in accounting and auditing, such as:

- Bizarro, P.A., and Dorian, M. (2017) identify that paperwork processing, source documentation, emails, conference calls, press releases, and news media from equally internal and external sources can all be evaluated and compared, facilitated by AI-driven automation.

- Makridakis (2017) suggested that those who embrace and implement AI widely and are ready to take risks to transform goods or services into global commercial success stories will continue to gain significant competitive advantages.
- Chukwuani & Egiyi (2020) suggested that AI will have an impact on accounting by reducing the possibility of fraud, improving the quality of accounting information, and promoting the reform of traditional accounting and auditing.
- Mohammad et al. (2020) identified that by keeping a continuous improvement of AI in the field of accounting and auditing, accountants and firms will be able to reduce accounting costs and add value to the accounting industry by moving the focus of accountants from the existing monotonous tasks to data-driven and analytics-based decisions.

10-2 Risks

- Bizarro, P.A., and Dorian, M. (2017) pointed out that no matter how much efficiency AI technology can extend towards accounting and audit tasks, it cannot replace the abilities of human beings to practice reasoning, express emotions, exercise professional scepticism, and exert professional judgment. They also discussed the possibilities of "technological unemployment".
- Makridakis (2017) lists possible negative consequences of AI applications that include increased unemployment, wealth inequality, the end of human supremacy, and the approaching technological singularity.
- Luo et al. (2018), some of the problems associated with the application of AI in the field of accounting include a preliminary lack of experience, a slow return on investment, and a lack of the required skills and qualities in professionals.
- Huang (2018) describes the frequent changes in law and regulations that would also require the AI system to be updated.
- Zemánková (2019) pointed out that the application of AI in accounting and auditing may result in possible income inequality, a reduction in the need for labour, endangered financial safety, etc. Also, AI applications run the risk of the algorithms being exploitative, internally biased, or containing human logic errors or biases.
- Mohammad et al. (2020) suggested that the major challenges facing the adoption of AI include the development of effective strategic policies for

AI, mobilising skilled manpower, and a lack of motivation and commitment to AI from the leadership.

11- **Adapting to the AI Interruption**

When the advancement in a field reaches the sloping point, the practitioners of that field should adapt quickly. Accountants and auditors, along with their stakeholders, in adapting to the changes shaped by the emergence of AI technology and preparing for greater AI-accounting and audit integration may resort to the following:

- Qualitative improvements encourage the accountants and auditors to develop their professional skills, management skills, IT skills, analytical skills, and decision-making skills (Zhang et al., 2020).
- the accounting academia Faced with the challenges of AI technologies and pressures from professional bodies, employers, and other stakeholder groups, accounting educators need to review the needs and demands of AI-driven markets and industries.
- Integration of and collaboration with AI researchers in developing AI-in-Accounting-and-Audit literature must be ensured (Kumar Doshi et al., 2020).
- Costs to be incurred and benefits to be derived from the application of AI in an enterprise must be quantified (Bizarro & Dorian, 2017).
- Accounting and audit firms and professional bodies must rethink and conceptualise their professional development and training, considering contemporary AI applications in accounting and auditing.
- To encourage organisations and accounting firms to use AI in their audit operations, existing auditing standards that demand certain labour-intensive procedures will need to be changed.
- stressed the need for a regulatory body overseeing the development of AI with regards to its application in accounting and auditing (Zemánková, 2019).

12- **Research limitations.**

Initially the artificial intelligence search technique employed in this study was limited to titles, abstracts, and keywords. However, some research may not include artificial intelligence within the scope of the search. The breadth of the search also includes the Scopus database, which is widely regarded as the most comprehensive citation and abstract database of peer-reviewed literature. As a result, the search phrase employed in this study may not include all papers on

artificial intelligence. A comparison of the outcomes from multiple databases could be part of future research.

    13- **Future Research:** Studies should focus more on the following issues: 1) the implications of AI technology implementation for accounting as well as auditing standards.

2)The role of transparency in examining various types of bias in AI (e.g., data-driven bias, bias through interaction, emergent bias, and conflicting-goals bias).

3) analysing case studies of AI implementation success and failures across various industries in accounting and auditing.

4) Finding out the determinants of AI implementation in accounting and audit functions of business organisations.

14- Conclusion

    A literature review provided the basis for building a new theoretical model or theory, and it can be valued when aiming to represent the growth of a particular research field over time. It is important to note that depending on the goal of the literature review, the approach that should be used will vary. Also, it highlights the gap in the current body of knowledge and proposes several actionable avenues for future research in the subject.AI is a tool that is only valuable if people know how to use it to streamline business processes. Accountants and auditors cannot be replaced by artificial intelligence when it comes to exercising human creativity and judgment. The market's response to these changes will influence how audits are carried out. Accountants and auditors must be able to respond quickly to changes in user demand as well as the creation of new metrics of organisational performance beyond traditional financial statements. Accountants and auditors will see a renaissance in the next few decades, with huge opportunities for individuals entering the profession to drive innovation and progress. However, the way engagement teams accomplish audits will transform. Auditors' capacity to exercise judgement and professional scepticism will be more vital than ever as they use new technologies. In the accounting field, AI will not replace accountants; rather, it will change the emphasis. No matter how much disruption AI creates in the future, it is uncertain that the need for human experts will be eliminated. As a result, as a society, we must continue to use AI to ensure that value and efficiency are continuously valued.

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