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NAVIGATING AI REVOLUTION IN ACCOUNTING AND FINANCE

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Abstract

The purpose of the paper is to delve into the transformative role of artificial intelligence in accounting and finance. The integration of AI in accounting has altered the generation, recording and processing of data into efficient accurate way in a much shorter time frame. The paper reviews the existing literature in order to assess the implications of AI on finance sector. It further analyses the skillset required by finance professionals to work in conjunction with AI. Findings have highlighted the challenges and opportunities presented by advancements and developments in the technology. Various AI tools have been found to play pivotal role in shaping the contours of accounting and finance sector. Further research avenues have also been proposed in the current review.

Keywords: Artificial intelligence, accounting and finance, automation, literature review.

INTRODUCTION

The digital transformation of society has impacted every sphere of lives. The change has occurred in accounting and financial sector too. The expeditious changes in technologies has altered the perspectives in accounting and finance (A&F). The period of coronavirus has not only opened but also widened the opportunities offered by digital technologies (KRÁJNIK and DEMETER,2021). The decision making process has witnessed tremendous changes due to development and integration of Artificial Intelligence (AI). "*Artificial intelligence refers to the field of computer science that goes beyond classical computer science, aimed at solving problems for which there is no classical computational algorithm in an efficient way. The intelligent system must be able to do more than just solve problems that require computing power, memorization and retrieval of knowledge or just reasoning control, it should be able to see, speak, hear, understand and reason and command similarly to humans*" (KRÁJNIK and DEMETER,2021). The intricate tapestry of AI is awe-inspiring, self -sustaining and evolving transforming not only finance sector but the entire business world (Hasan, 2022)

Accounting and finance encompasses structured, semi-structured and unstructured decisions (Moudud-Ul-Huq, S. 2014) and advances in digital technology is changing workplaces (Leitner-Hanetseder et al;2021). The significant advancements in Artificial Intelligence has smoothened many tedious and repetitive tasks of accounting like bookkeeping. It has further enhanced the accuracy of financial decisions as well as its interpretation. Integration of AI has catalyzed higher accounting efficiency (Guthrie and Parker, 2016); detection of fraud and management of liquidity (Skrbiš and Jacqueline, 2019); augmenting risk assessment and sustainable reporting (J. Nair, Manohar and Mittal. (2025), and overall revolutionizing the work of accounting professionals (Hashem Alshurafat; 2023).

AI emerged as a significant technology and now has become a critical technology. The challenges of subjective judgements by experts in traditional setup has resulted in erroneous choices in business. The massivity of big data and its complexity cannot be handled by traditional methods of data analysis (Yi et al; 2023). The discerning eye of AI enables efficiency and accuracy which has compelled almost all the firms to apply AI especially in finance sector. Artificial Intelligence, data analytics and machine learning have altered the dynamics in finance and accounts. The expectations from accounting and finance practitioners have changed in the wake of transforming technologies. They are expected to adapt and work in conjunction with new technology.

The multiple tools of artificial intelligence technologies such as expert systems for audit and taxation, intelligent agents for customer service, Natural Language Processing (NLP), Robotic Process Automation (RPA), Blockchain, data analytics, and machine learning for decision- making has been proposed to automate, streamline, and improve the efficiency of various tasks and processes in accounting and finance operations. (Cao and Zhang, 2025; Rahim & Chishti, 2024).

The present study reviews the relationship between use of AI techniques in accentuating the financial decisions and impacts on standard accounting practices. The paper highlights the common problems in accounting and finance as well as delves into the challenges and opportunities posited by AI. The paper analyses the emerging trends in AI and agenda for future research. The paper adds to extant literature on ramifications of AI technologies in the field of accounting and finance along with implicative insights of AI in the relevant field.

LITERATURE REVIEW

Traditionally accounting requires accuracy and efficiency which required data entry and ledger maintenance done manually coupled with paper based records. It was time consuming, prone to human error limiting the efficiency, management, analysis and reporting of financial decisions (Odonkor et al 2024). These challenges in traditional accounting and financial decision making has been effectively managed by automation of repetitive accounting tasks and integration of Artificial intelligence. AI as been found to enhance performance in accounting as it expedites reconciliation of books, consistent data processing, and reduction in cost (Judijanto et al; 2025).

The growing permeability of AI in accounting and finance domain has garnered the interest of many scholars to delve into this intricate domain of Artificial intelligence. The review of literature by (Hońko and Hendryk, 2024) highlighted few points to consider.

➢ The existing study are mainly about conceptual framework with less empirical study to elucidate the real- world practices.
➢ Limitations in collaboration between computer science and accounting hindering research in this domain.
➢ Accounting professionals are still to embrace the technology and therefore are unable to explain the impacts of AI adequately.

The key development in AI is not automation or reduction of human error or fastidiousness in processing the data but the intelligent-decision making systems. The predictive modeling, analysis of data and trends have enabled accounting professionals and business leaders to make more informed, accurate decisions (Boritz, Theophanis and Stratopoulos, 2023; Odonkor et al; 2024)

Hońko and Hendryk, (2024) in their study report that there is no gender biasness. Both men and women assert the significance of AI in accounting though men prefer AI in bookkeeping and management reporting; women prefer AI for asset management.

Though AI's transformative role is undeniable yet it is accompanied by challenges as it involves sensitive financial information. Hashem Alshurafat;(2023) in their study have highlighted few challenges which requires consideration.

- ➢ Integration with existing systems
- ➢ Data privacy and security
- ➢ Ensuring efficiency and accuracy
- ➢ Management of customer expectation
- ➢ Harmonic balance between technology and human expertise
- ➢ Changing dynamics of job expectations and upskilling
- ➢ Managing the changes in regulations and standards

Nair, Manohar and Mittal (2025) in their study have emphasized on the role of AI in sustainable reporting. They not only highlight the implications of AI-enabled fintech but also draw attention towards ethical aspects. The highly intricate algorithms of AI pose various considerations as to their impact and ramifications (Leitner-Hanetseder et al; (2021). There is scholarly consensus about the transformative role of AI in accounting and finance. Nevertheless, the academia also calls for careful integration of technology into accounting because of job displacements and security of sensitive financial information.

RESEARCH METHODOLOGY

The purpose of this paper is to provide a comprehensive overview of artificial intelligence and the paradigm shift in accounting and finance. The study analyses the literature review, reports and case studies spanning 2019-till current time in to meticulously map the contours of technology into accounting and finance. The nature of paper is qualitative and only those study materials were selected which aligned with the purpose of paper and key themes were identified. The search was limited to English language materials. Materials in other languages were excluded.

FINDINGS AND DISCUSSION

The emerging era of AI has presented the world of accounting and finance with huge opportunities to improve efficiency and accuracy. It has transformed the role of A&F professionals from book keeper or analysts to a strategic partner in decision making process. They are expected to perform more complex tasks.

The highly sophisticated AI algorithms have empowered the financial world not only in computing and data entry but also in investment management, fraud detection, analysis of trends, accuracy in prediction and many more. The development of robotics has again empowered this field manifold.

AI tools and its transformative role

The review of literature has identified AI tools which are pivotal in this transformation. The evolution and emergence of AI has completely changed accounting systems (Berdiyeva, Islam & Saeedi 2021).

Cloud computing enables business accessibility to financial data from anywhere substantially benefitting the small and medium enterprises. It helps save huge investment in AI infrastructure and instead focus on expansion and efficient management of business. Literature review has highlighted the role of cloud computing in reducing the manual errors in accounting (Groenewald & Kilag 2024); consequently, leading to streamlined financial operation. Natural language processing (NLP) enables extractions of specific concept from unstructured data. The textual analysis allows analysis and interpretation of unstructured financial data into structured meaningful data pertaining to specific purpose.

Blockchain technology has considerably transformed the landscape of financial sector (Groenewald & Kilag (2024). It has increased transparency and security in financial transactions leading to compliance and benefitting the areas of auditing. the review of literature has also revealed a transformative role of blockchain in enhancing traditional audit processes. The enhanced audit trail transparency and the unalterable nature of recorded information in blockchain (Groenewald & Kilag 2024); ensures robust compliance and regulatory accountability.

Robotics process Automation (RPA) has become significant in every aspect of business (Berdiyeva, Islam & Saeedi (2021). Voluminous repetitive tasks such as quarterly reports and preparation of balance sheet come under the domain of RPA. The adaption of RPA in accounting sector has been rapid with market for automated process is growing fast (Doguc, 2021); predicting the shift towards robots for considerable part of accounting tasks. The automation will generate new responsibilities and alteration of professional trajectory for accountants. The transformation due to RPA will drive accountants to acquire new soft skills, learn and adapt to new technology and data skills (Jędrzejka,2019; Oyeniyi et al;2024).

Challenges in integration of Artificial intelligence in Accounting and Finance

The integration of AI in accounting and finance has presented with new challenges and opportunities for the business world.

Smooth integration of AI into Accounting process: the primary challenge is the seamless integration of AI into accounting processes without disrupting the existent system (
 Hashem Alshurafat, 2023).

Gap between required skill and existing skill among practitioners: since there have been dramatic changes in traditional role of accounting professionals a significant lack of expertise among professionals has been accentuated in the review. Concerns of job displacement has been highlighted in many studies. There has been shift in expectations from professionals and they are exoected to acquire new skill set (Gambhir and Bhattacharjee (2021). They need to update themselves and adapt themselves to leverage the benefits of AI (Groenewald & Kilag (2024). Doshi et al; (2020) propose six determinants for accountants to embrace technology. Digital mapping of strategy, project creation, employing correct skills, mastering data science, developing and planning a digital endeavor and substantial ecosystem to support, implement and benefit from AI.

Concerns of data privacy and security: The literature also acknowledges challenges data privacy and security concerns associated with AI adoption in accounting. This demands robust security measures related to data privacy for protection of sensitive financial information.

Emergence of big data, gig economy and professional hybrids: big data is characterized by large volume which poses as advantage as well as threat. The ginormous data can be beneficial for companies if managed properly. Another significant transformation has been in workplace scenario where AI has enabled remote working and emergence of freelancers or hybrid professionals. Changing regulations and standards: the technological advancements warrant for stricter regulations and standards is a critical area. The emergence of new regulations necessitates continuous updating to keep the usefulness of AI. This require human expertise as well as investments which many small and medium companies are unable to sustain (Hasan,2022).

AI not only poses challenges but also offers tons of opportunities. The primary being accuracy and efficiency in accounting. machine learning tools enables analysis of large number of contracts in short time frames and extract accurate information (Ukpong,2019). It has opened new avenues of whole new service industry offering fintech solutions and softwares to businesses. The paradigm shift in workplace has brought forth a new set of skill and new job portfolio in the form of freelancers and hybrid professionals or remote working.

There is a scholarly consensus that AI brings new challenges and opportunities in the landscape of accounting and finance. Strategic planning, proper training and robust solutions can overcome challenges and leverage AI benefits to its full potential.

FUTURE RESEARCH AVENUES

The paper scratches the surface of this field of AI yet future research is imminent in various dimensions of AI. The review paper has highlighted a major lacuna in this area. There is lack of empirical data supporting the extant literature on AI. The literature is dominated by qualitative studies which provide an excellent opportunity for researchers to conduct more studies empirically. Cao et al;(2023) have cited the need for future studies in robustness of solutions in AI. More studies are stressed upon in the field of determinants of AI implementation success and failures specific to firm or industry (Hasan,2022). Further studies are warranted to understand the symbiotic relationship between humans and AI in the field of accounting and financial sector.

CONCLUSION

The review has been beneficial in understanding the complex interplay of accuracy and efficiency offered by AI and the challenges as well as ethical concerns in the context of accounting and finance. The emergence of fintech companies provide a whole new transformative environment. The AI tools like cloud computing, Natural language processing, blockchain, machine learning and robotics have opened a new era of revolutionized accounting procedures. The roles of accounting professionals have been redefined from mere record keeper to strategic planner and decision maker. They are expected to embrace and work in conjunction new advancements and developments in technology (Gambhir and Bhattacharjee (2021). The review further underscored the importance of education, training and transformation of accounting skills. The study also emphasizes on the regulatory aspect which should be formulated keeping in view of changing and evolving nature of AI technologies. A regulatory body has been suggested to monitor the development and implementation of AI contextual to accounting and auditing (Zemánková ,2019).

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