Chapter 10:

Artificial Intelligence in Accounting: Opportunities, Risks, and Workforce Transformation

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ABSTRACT

AI has revolutionized accounting, increasing the degree of accuracy, efficiency and decision-making ability. Modern financial reporting, auditing, tax compliance and risk management technologies driven by AI predictive analytics, machine learning and robotic process automation. The highest advantages of deploying AI in business include processing transactions promptly and accurately, high-level fraud discovery, and accurate financial forecasts. But the acceleration of artificial intelligence in accounting also comes with ethical troubles, data security, and other dangers while also threatening job loss. This paper investigates the benefits as well as the drawbacks of artificial intelligence related to the accounting profession. By defining traditional accounting functions, it also highlights how AI-powered solutions can eliminate human errors, boost productivity, and offer enhanced financial insights. In addition, it explains the implications for artificial intelligence implementation in the regulatory compliance context, as well as it describes the skills set for accountants and the risks of overreliance on automated systems. Although the application of artificial intelligence can bring about revolutionary changes, the proper use of technology is crucial to avoid the risks of cybersecurity, openness, and bias. This study argues that AI is an enabler for human accountants and thus allows professionals to focus on strategic and advisory work. The accounting industry can navigate the AI-based future appropriately by adopting ethical AI practices, spending on the retirement of staff, and ensuring strong cybersecurity.

Key Words: Artificial Intelligence, Accounting, Automation, Cybersecurity, Financial Reporting, Ethical AI

1. INTRODUCTION

The rapid development and implementation of artificial intelligence (AI) across a variety of industries have resulted in numerous accounting industry advancements. Two technologies that are mostly used in accounting nowadays are robotic process automation and machine learning. Artificial intelligence-driven automation has shown great improvement in many fields of business operations. Adopting artificial intelligence-driven automation can speed up transaction processing by more than 50% and eliminate manual data input mistakes by up to 90%, according to Gartner research "The Impact of AI-Driven Automation in Accounting" (Srivastava et al., 2015). This slowing down in errors and speeding in processing could greatly affect the operational accuracy and efficiency. Moreover, organisations adopting artificial intelligence to settle disputes reported a 40% drop in month-end closing time based on a Deloitte study (Al-Hawari & Ward, 2006). This higher efficiency could help to simplify finance processes and raise general output. IBM's market research also shows that businesses applying artificial intelligence for predictive analytics have seen budget accuracy increases ranging up to 30%. Furthermore, Rawishdeh (2023) discovered that more budget accuracy helps companies to track their own performance and make wise financial decisions. An Accenture poll also shows that ratings of client satisfaction for financial services firms using artificial intelligence to offer customised advice rise 20%. Starker & colleagues 2018. This increase in consumer happiness would lead to more loyalty and closer client relationships. From improved financial performance and happier consumers to higher productivity and less blunders and artificial intelligence-driven automation into organisational operations, clearly shows different benefits. Still, artificial intelligence has disadvantages, the same as any other tool: ethical questions, job

displacement, reliance on automated systems, etc. Thus, the main objective of this paper is to identify how artificial intelligence affects accounting practices as well as the possible opportunities and challenges.

2. LITERATURE REVIEW

Artificial intelligence is significantly transforming financial reporting, auditing, and risk management by enabling technologies like machine learning, robotic process automation, and natural language processing (Odeyemi et al., 2024). These AI-powered tools are being increasingly adopted to enhance decision-making and overall efficiency (Askary et al., 2018). Besides, AI has been applied in accounting and auditing for over 25 years (Suleiman et al., 2020). Its application includes big data analysis to produce accurate, reliable, and timely accounting information (Askary et al., 2018). The following are the previous literature on AI issues:

Evolution of Artificial Intelligence in the Banking Industry

Thirty years ago, artificial intelligence (AI) initially found application in accounting (Abdolmohammadi, 2005). Early in the 1990s, artificial intelligence was first especially used in financial accounting and auditing (Etheridge & Sriram, 1997). Great progress in several areas of accounting and finance was attained following this time span. Including artificial intelligence in internal and outside accounting processes is benefiting businesses everywhere greatly. Artificial intelligence is applied inside the accounting division to provide more palatable and accurate financial reporting. Artificial intelligence's accuracy and consistency in assessing and interpreting accounting data help it to provide information faster than humans (Bose & Bhattacharjee, 2022). Artificial intelligence-powered accounting tasks can thus produce accurate and quick answers. This quick output helps users in making judgements and improves the timeliness of accounting information. Artificial intelligence will be more consistent and accurate if it is taught to reach accuracy and guided to follow accounting principles. Artificial intelligence is now applied by accounting firms to the audit process to guarantee compliance and lower managers' deliberate mistakes. Thus, the manager's application of specific financial function formulators will be restricted. While some accounting companies use artificial intelligence to manage audit risk, just a few of them employ it for auditing. Zhao and associates (2004).

As artificial intelligence advances, routine low-level auditing chores should eventually be handled by it. One low-level audit task is gathering and noting evidence from an audit client. Many of the chores now performed by staff-level auditors will be replaced by augmented artificial intelligence, which will also assess the results. From the audit client's perspective, the client's artificial intelligence might generate or enhance the required proof for the auditor. As the technology develops, the artificial intelligence systems on the client and auditor sides will be able to interact directly. After several iterations, this use can range from an augmented level to a more autonomous one, hence lowering the need for human assessment. A report by the World Economic Forum in 2015 predicts that artificial intelligence will handle thirty percent of corporate audits by 2025.

The Existing Research and Theoretical Perspectives on Artificial Intelligence in Accounting

Research in accounting consistently focuses on two topics, which is the automation of routine tasks and the use of AI in the strategy formulation process. Soori et al. (2023) recognizes the potential for AI systems to improve reporting and compliance procedures by alleviating the manual data entry and reconciliation processes. This is done with the aid of artificial intelligence. Similarly, Odonkor et al. (2024) also emphasize the fact that AI powered analytics improves accuracy of forecasting and budgeting due to the provision of real time financial data.

On the other hand, there are some researchers who are concerned with the negative side of AI. Zhang et al. (2023) argue that there is too much reliance on humans in the application of Artificial Intelligence in auditing on account of the algorithmic biases that exist in the automation systems. Besides, de Bruijn et al. (2022) warns us of the lack of accountability of AI in predictive financial analysis and its ethical implications. These differing arguments show the need for a holistic approach in the adoption and use of AI in accounting functions.

Empirical Gaps and Potential Future Directions

While in-depth studies on AI implementation in accounting are ample, still, many gaps remain unfilled. More research must be done to address how to improve AI's transparency and objectivity in financial decision-making (Banta et al. 2022) since there are ethical implications that accompany technologies integrating AI. In addition, there was an impact of artificial intelligence on the dynamics of job because this layer of modification of accounting jobs by AI beyond just automation lacks empirical evidence (Zhang et al. 2023). The larger quantity of knowledge regarding the consequences of AI includes the hazards around data breaches and cybersecurity risks that Brown-Liburd et al. 2015 suggested would need a greater amount of research. Cybersecurity in AI-enabled Accounting: While AI does boost fraud detection, more work needs to be done to investigate the fallout of AI.

3. DISCUSSION

Opportunities of Artificial Intelligence

When assessing artificial intelligence potential, it's important to consider that as the technology develops, more companies will find fresh uses for its benefits. The current developments in artificial intelligence technology, the auditing sector will be more profitable going forward. Artificial intelligence (AI) is predicted to augment accounting as technology develops rather than replace human labour totally. This perspective will become more relevant as the related technology develops (Kokina and Davenport, 2017). The fast technological developments in the sector have driven bigger accounting firms to include artificial intelligence in their integrated audit automation systems. Sophisticated AI-enabled tools have been developed over the last several years to help auditors come to well-informed decisions. This tool is supposed to help auditors find bias and mistakes in the decision-making process (Omotesso, 2012).

Artificial intelligence dramatically increases the accuracy and efficiency of accounting practises. By means of automated data entry, transaction classification, and advanced computations to save the time and effort required for repeated processes, accountants can focus on more strategic areas (Rawashdeh, Bakhit, & Abaalkhail, 2023). The predictive analytics features of artificial intelligence enable accountants to more wisely estimate and advice on finances, therefore supporting strategic planning and decision-making as well as providing an edge for companies (El Khouly, Yasser, & Yehia, 2022). Furthermore, artificial intelligence generates fresh prospects for creative accounting services and business models, enabling businesses to offer more customised and efficient services and leverage AI technology to boost client pleasure and involvement (Alghafiqi & Munajat, 2022). Moreover, the advanced algorithms of artificial intelligence can spot anomalies and trends suggestive of fraud, thereby enhancing the security and dependability of financial reporting (El Hajj & Hammoud, 2023).

Positive Consequences of Artificial Intelligence in Accounting

Accountants can now focus on more complex, value-adding tasks such as strategic analysis, financial planning, and advisory services since artificial intelligence is handling data entry and transaction processing. This is what distinguishes them from pure mathematicians and qualifies them as business partners (Boritz & Stratopoulos, 2023; Moll & Yigitbasioglu, 2019). This is true because AI provides accountants with quick and accurate access to data, which enables them to make better decisions without any bias. This application of data-driven intelligence enhances overall business performance and allows accountants to concentrate more on strategic activities (Zhang et al., 2023; Aldoseri et al., 2023).

In addition, artificial intelligence allows accounting firms to process increasing workloads without needing to hire more staff, which enhances scalability. This capability either maintains or improves the level of service, leading to accounting process efficiency and lowering costs significantly (Bose et al., 2023; Allioui & Mourdi, 2023). This is because AI processes are automated, accelerating the execution of tasks and reducing the likelihood of errors. As a result, accountants are more efficient and have additional time to focus on tasks that require human judgment and critical thinking, thereby adding value to their roles (Thakker & Japee, 2023; Jackson et al., 2023).

Negative consequences of Artificial Intelligence in Accounting

Artificial intelligence (AI) is revolutionizing most sectors, including accounting, by streamlining repetitive tasks and enhancing productivity (Mohammad et al., 2020). The transformation has both potential benefits and drawbacks, particularly concerning the workforce. Highlighting job displacement and reskilling needs, as well as the revolutionization of accounting careers, this discussion highlights the pros and cons of AI automation on accounting professionals. Most of the accounting work such as data entry, processing of transactions, and basic bookkeeping is influenced directly by the ability of AI to execute routine and repetitive tasks. Use of AI tools makes it possible for one to accomplish such tasks faster and more accurately, enhancing efficiency and reducing the cost of operations (Davenport et al., 2018). Conversely, the impact of AI-driven automation on employment and financial security raises serious questions about job displacement. Activities that involve repetitive, mundane tasks—like data entry, manufacturing, and basic customer service which are most vulnerable to automation and replacement by AI (Tschang and Almirall, 2021).

Moreover, addressing the ethical challenges of AI-based automation is imperative to make technology work for society in a fair and ethical manner. One of the primary ethical concerns is the transparency of AI systems. Machine learning-type AI algorithms (de Bruijn et al., 2022) can be complex and non-transparent in the sense that it is difficult to discern how they arrive at their conclusions. This lack of transparency is what leads to accountability issues, particularly when AI produces biased or wrong conclusions.

Case Study Corresponding to the Problem

A group of accounting researchers has released an apology after accidentally linking KPMG and Deloitte with AI-created false crises in their report to an Australian parliamentary inquiry based on artificial intelligence (AI).

Their suggestion implied more public accountability and legislative changes for the Big Four firms, based on issues like AI-created false information that wasn't verified prior to submission.

Among the falsehoods were accusations against KPMG for a "7-Eleven wage theft scandal" that never existed and that it had audited the Commonwealth Bank during a financial crisis, when it never even had the bank as a client. Deloitte was also unfairly accused of cooking books for Patisserie Valerie and of being part of an imaginary "National Australia Bank financial planning scandal" in a court action against other firms.

One of the researchers, Professor James Guthrie, explained that while they had utilized Google Bard, a tool based on artificial intelligence, in their submission, it didn't quite function so well to provide accurate information. He expressed regret over the mistakes and insisted that the core reform recommendations remained the same regardless of the errors being rectified. This incident, one of the first instances of AI-generated disinformation cited in a parliamentary report, underscores the dangers of using untested AI in high-stakes situations.

4. RECOMMENDATION

Accountants should get regular training on new artificial intelligence tools and technologies to ensure they are ready to work with ai systems. Many large accounting firms, including Deloitte, PwC, and KPMG, have developed internal training programs to help staff members become more upskilled. Professionals in the industry often lead practical training using artificial intelligence technology in these events, which can include seminars and workshops. Academic institutions and accounting firms working together could lead to the development of specialist programs focused on artificial intelligence and data analytics (Choose, 2024). Including these accounting courses in degrees will help recent graduates be ready for the expectations of the modern workforce. As artificial intelligence substitutes for tedious tasks, accountants can focus on more analytical and strategic duties. Accountants will have to change from transactional to advisory duties if they are to provide insights and recommendations based on data processed by artificial intelligence systems.

Ensuring ethical AI use through transparency and accountability: AI systems, particularly those based on machine learning, often function as "black boxes," making it challenging to understand their decision-making processes. This lack of transparency leads to two significant ethical dilemmas: biased outcomes and accountability issues. To address these concerns, companies should implement explainable artificial intelligence (XAI) systems and create clear ethical guidelines for AI usage in accounting. Emphasizing the importance of transparency in AI systems is crucial for ensuring accountability. For instance, if an AI system makes an error in financial reporting, it should be possible to trace the decision-making process and identify the root cause.

Strengthening data privacy and security measures: the use of artificial intelligence in accounting involves handling large amounts of sensitive financial data, making data security and privacy paramount. Companies must implement robust cybersecurity measures, such as encryption, multi-factor authentication, and regular security audits, to prevent data breaches. Additionally, strict adherence to data protection regulations like GDPR is essential. This highlights the potential for cyberattacks on ai systems if their security is inadequate. For example, a breach in an ai-driven accounting system could expose sensitive client information, jeopardize the company's reputation and potentially lead to legal repercussions. Adopting modern security protocols is vital to mitigate these risks.

5. CONCLUSION

Artificial intelligence offers some benefits as well as drawbacks when incorporating into accounting processes. Though it can increase production, accuracy, and decision-making, AI generates problems with data privacy, ethical use, and employment displacement. To stay up with these technical developments, the accounting sector must adopt ethical standards, upskill its employees, and guarantee the security and openness of artificial intelligence systems. Ultimately, artificial intelligence (AI) should be considered as a tool to improve human knowledge rather than replace it, therefore enabling accountants to focus on higher-value work and improving general service delivery. There is substantial discussion on how artificial intelligence (including financial, management, and auditing accounting) may affect the accounting profession. Although some worry that artificial intelligence will make their profession useless, others think technology could help the accounting sector grow (Zhang et al., 2023). AI can handle routine tasks such as data input, invoice processing, bank reconciliation, and tax computation, therefore sparing accountants' time for more important work. While artificial intelligence can help with data analysis, people still have to weigh the results and make decisions on the best path forward. Artificial intelligence might improve data analysis. Moreover, compared to other accounting positions, those requiring critical thought, in-depth investigation, and human judgement are less likely to be filled by machines (Zhang et al., 2023). By automating basic and repetitive tasks and elevating accountants in roles requiring more

human judgement, strategic thinking, and analysis, artificial intelligence is usually expected to revolutionise the accounting sector (Zhang et al., 2023).

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