

The Impact of Artificial Intelligence on Financial Accounting Efficiency and the Continued Importance of Human Oversight

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Abstract. This paper mainly examines whether artificial intelligence (AI) can really improve the efficiency of financial accounting work, and why accountants are still required to verify its outputs and provide necessary supervision. To address these issues, this study reviews academic papers and reports published by professional institutions. Based on these studies, AI has been shown to perform repetitive tasks that follow fixed procedures. In addition, it can process large volumes of transactions, detect potential errors, and use historical data to forecast future sales or cash flows. Thus, AI reduces the time accountants spend on manual processing, thereby enabling them to allocate more time to analyzing financial information and generating valuable business insights. However, if the data provided by the company is incorrect or incomplete, the results may also be inaccurate. Moreover, financial records may contain private information, such as bank details, employee salaries, and customer data. As a result, AI should assist accountants rather than replace them. In this process, accountants still need to verify AI-generated results, review relevant information, make judgments based on the company's actual situation, and take responsibility for final decisions.

Keywords: Artificial Intelligence, Financial Accounting, Accounting Efficiency, Human Oversight, Professional Judgement

1. Introduction

In daily financial accounting, accountants handle routine tasks, like invoices, transactions, account reconciliation, and data error detection. However, if the company needs to process hundreds or even thousands of transactions every day, it will take a lot of time to complete them completely manually. As companies accumulate more financial data, some have adopted artificial intelligence (AI) and automated tools to handle these tasks. With the increasing use of AI in accounting practices, many studies have examined its applications in this field. For example, the International Federation of Accountants pointed out that artificial intelligence and automated tools can perform repetitive and rule-based tasks, allowing accountants to focus on more valuable work [1]. In addition, Kureljusic and Karger examined the use of artificial intelligence in financial accounting forecasting [2]. They found that AI can use historical data to predict future sales or cash flows; but these predictions may not always be accurate. Furthermore, the OECD noted that artificial intelligence can create new

opportunities in finance, but its wider adoption may also increase existing risks [3]. Thus, AI-based predictions should be treated as references only and cannot guarantee future outcomes. However, enterprises must evaluate the efficiency of AI applications, the reliability of AI-generated results, and responsibility allocation when errors occur. This study examines whether artificial intelligence can improve the efficiency of financial accounting and why human supervision remains necessary. To explore these issues, academic papers and reports published by professional institutions are reviewed. The analysis focuses on the applications of artificial intelligence in accounting, its impact on efficiency, and the limitations that require manual supervision. And these findings explain how enterprises can maintain the reliability of financial information and clarify responsibilities while using artificial intelligence.

2. The applications of artificial intelligence in financial accounting

As AI becomes more common in accounting, it is increasingly used to perform various accounting tasks. In particular, some AI tools can perform simple and repetitive tasks, while others can help accountants analyze financial information and forecast future data. However, AI performance varies across tasks and depends on the quality of the data provided. Although some tools are effective for routine accounting work, they may produce errors in complex or unusual situations. The following sections examine two common applications of AI, including routine accounting tasks and financial analysis and forecasting.

2.1. Automation of routine accounting processes

In routine accounting processes, invoice processing and transaction matching are common tasks performed by accountants. After receiving an invoice, accountants first check the details, enter the information into the accounting system, and match the invoice with payment records. In addition, they compare bank and company records to confirm transaction consistency.

For these tasks, AI can assist with invoice data extraction and transaction matching. Specifically, it can identify information such as supplier names, dates, and amounts from invoices and enter these details into accounting systems. Besides, AI can compare transaction records from different sources and detect inconsistencies. Kokina and Davenport further noted that AI can process numerical data, documents, and electronic records [4]. Thus, AI can identify possible discrepancies for accountants to review.

However, AI cannot correctly process every invoice or transaction. For example, some invoices may contain missing information, unusual formats, or incorrect details. Moreover, AI may classify transactions into incorrect accounts when the available information is insufficient. In these cases, accountants need to examine the records and make necessary corrections. Moreover, Issa, Sun and Vasarhelyi argued that AI should support accountants' work rather than replace their professional judgment [5]. When AI identifies a discrepancy, accountants must examine the original invoice, payment records, and accounting entries to determine whether the difference results from an actual error or situations such as partial payments or a single payment covering multiple invoices.

2.2. AI-assisted financial analysis and forecasting

In daily operations, enterprises accumulate large amounts of financial data, including sales revenue, operating costs, company assets, liabilities, and transaction records. AI can process these data and identify unusual patterns, such as abnormal increases in expenses or unusual transaction activities.

These functions allow accountants to detect potential issues in financial information and conduct further analysis. Beyond identifying existing patterns in financial data, AI can also use historical information to forecast future sales, cash flows, and potential financial risks.

Kureljusic and Karger reviewed 47 studies related to financial forecasting and found that AI has been used in various areas of financial prediction [2]. However, practical experience with AI-based forecasting remains limited, and further research is needed to evaluate its reliability in real business environments. Sutton, Holt and Arnold also examined the role of AI in accounting work and found that current AI technologies primarily support data processing and analysis rather than replace accountants in making final financial and business decisions [6].

Despite its forecasting ability, AI predictions are subject to several limitations. As AI forecasts are mainly based on historical data, their accuracy depends on whether past patterns remain relevant in the future. For example, unusually high past sales may result from temporary promotions, and AI may overestimate future sales if these temporary factors are not identified. The reliability of AI predictions may also be affected when historical data is incomplete or does not include unexpected situations. Besides, changes in market conditions, customer preferences, competition, and economic environments can further reduce the accuracy of prediction models. Therefore, accountants need to assess AI forecasts and update them with new information.

3. The impact of AI on the efficiency of financial accounting

AI can automate certain accounting tasks and reduce the need for repetitive manual work. However, adopting an AI system does not automatically improve accounting efficiency. The actual impact depends on how the system is implemented and used within the company. This chapter explores the effects of AI on accountants' workload and business decision-making.

3.1. AI-driven operational efficiency and workload reduction

In routine accounting operations, AI can improve the efficiency of tasks such as invoice processing, transaction matching, and account reconciliation. These tasks often require accountants to review large amounts of information manually, especially during month-end or year-end closing periods. In this process, AI can help accountants handle documents and transaction records through automated processing.

Moreover, AI can also support the faster processing and analysis of financial information. In this regard, Moll and Yigitbasioglu noted that AI, big data, and other digital technologies can improve access to financial information and help companies respond to issues more effectively [7]. Similarly, IFAC reported a demonstration in which Pascal Bornet used ChatGPT to analyse Tesla's annual report, identify key risks, evaluate performance, and develop an audit plan [1]. This shows that AI can support the initial review of complex financial documents. However, the demonstration does not provide evidence of actual time savings, making the extent of efficiency improvement difficult to measure.

Despite these advantages, AI does not eliminate the need for human review. In data processing, AI may reduce certain data-entry errors by following predefined procedures consistently. However, incorrect input data or unsuitable system settings may produce inaccurate results, hence requiring accountants to verify and correct them. In practice, the efficiency gains from AI depend on effective implementation, including reliable data, suitable software, and employees with the skills needed to use the system. Technical issues and system adjustments during adoption may temporarily increase

workload. Therefore, AI improves efficiency only when it is properly integrated into accounting processes.

3.2. AI-assisted decision-making support and enhancement

In business decision-making, managers depend on financial information to prepare budgets, control costs, and evaluate investment opportunities. However, large amounts of financial data and complex business conditions can make it difficult to identify important information. In this context, AI can support decision-making by integrating data from different departments and identifying changes in business conditions, like increasing costs or changes in customer payment patterns. These results can provide managers with additional information for decision-making, but they should only serve as a reference rather than a final basis for decisions.

At the same time, AI-based analysis has certain limitations. The OECD noted that AI can create new opportunities in finance but may also introduce new risks [3]. In particular, AI-based analysis may overlook important company-specific factors, like strategic plans, management decisions, and external changes. As a result, it may identify financial changes without accurately explaining their underlying causes. Thus, accountants continue to play an important role in evaluating AI-generated results. Although AI can analyze financial data and identify potential issues, accountants are still required to determine whether the results reflect the company's actual circumstances and exercise professional judgment in decision-making.

4. Issues and limitations of using AI in financial accounting

Though AI can process accounting data quickly, fast processing does not guarantee accurate results. Therefore, AI outputs should not be accepted without verification. In addition, accounting records contain sensitive information, so companies need to consider data security when using AI.

4.1. Reliability of AI-generated financial information

The reliability of AI-generated financial information largely depends on the quality of the input data. Inaccurate or incomplete input data may directly affect the results produced by AI. For example, duplicate invoice entries may cause costs to be calculated twice, while missing transaction records may lead to inaccurate financial totals. Because AI processes only the data provided to it, it may not detect these data quality issues automatically. Therefore, accountants need to verify the original records before relying on AI-generated results.

Beyond data quality issues, errors may also arise from limitations in AI models. AI systems learn patterns from historical training data, but these patterns may not apply to all types of transactions. For instance, uncommon or complex transactions that are not well represented in the training data may be classified incorrectly. In addition, if historical records contain inaccurate classifications or biased patterns, AI may reproduce these problems when analysing new data. Therefore, accurate input data alone does not guarantee completely reliable AI outputs.

In addition, AI-generated results may lack explainability. Some AI systems can identify unusual transactions or potential risks but cannot clearly explain the basis for their conclusions. This lack of transparency may make it difficult for accountants to evaluate whether the results are reasonable. Munoko, Brown-Liburd and Vasarhelyi discussed challenges related to AI bias, explainability, and responsibility in accounting applications [8]. Therefore, accountants need to review AI-generated results against original documents and professional knowledge before making final judgments.

4.2. Data privacy and cybersecurity risks

When AI is applied in accounting, companies may need to provide sensitive information, including bank details, employee salaries, customer data, and internal financial records. However, unlike traditional accounting systems, some AI tools may involve external platforms or third-party service providers, which creates additional concerns regarding data storage, access control, and information security. If sensitive data is not properly protected, it may be leaked, modified, or accessed without authorization. Besides, employees may unintentionally upload confidential documents to unsecured AI platforms, increasing the risk of data leakage. The OECD highlighted that data protection and cybersecurity are important challenges for the financial sector when adopting AI [3].

To manage these risks, companies need to establish clear policies on AI usage, including which types of information can be processed by AI systems and which data should remain restricted. In addition, access permissions should be controlled to ensure that only authorized employees and systems can view sensitive information. Before using external AI services, companies should also evaluate how providers collect, store, and protect financial data. From an accounting perspective, accountants play an important role in maintaining data security during AI adoption. They need to use approved AI tools, avoid uploading confidential documents without authorization, and follow internal procedures when security issues occur. Therefore, the use of AI in accounting requires not only technological capabilities but appropriate data governance and employee awareness to protect financial information.

5. The importance of human oversight in AI-driven financial accounting

Though AI can assist with accounting tasks, it cannot guarantee that every output is accurate. Thus, accountants cannot rely on AI-generated information without proper review. When errors occur in financial information, responsibility cannot be attributed solely to the AI system. Accountants and managers who approve the information remain responsible for the results.

5.1. Professional judgement and accountability

In accounting practice, many decisions cannot be made based on numbers alone. Accountants often need to assess whether financial information is reasonable, determine appropriate accounting treatments, and collect additional evidence when available information is insufficient.

While AI can assist accountants by organizing information and identifying potential issues, it may lack a complete understanding of the factors behind a transaction. As a result, AI-generated suggestions require professional review before use. Munoko, Brown-Liburd and Vasarhelyi noted that the use of AI in professional work requires clear responsibility and effective system governance [8]. If AI recommendations conflict with the company's situation, accountants need to examine the reasons and check the supporting evidence. However, this does not mean that AI outputs are always unreliable, but that accountants must understand the basis of the results and apply professional judgement before making decisions. In accounting, this cautious approach is known as professional scepticism.

5.2. Human-AI collaboration in accounting practice

AI is not intended to completely replace accountants but to support their work through collaboration. Although AI can automate routine accounting tasks, accountants remain responsible for assessing

results, considering business conditions, and making professional judgements in complex situations.

Leitner-Hanetseder et al. found that AI may change accounting tasks, but accountants continue to play an important role in accounting practice [9]. As routine tasks become increasingly automated, accountants may spend less time on manual data processing and more time on tasks that require analysis and professional judgement. To work effectively with AI, accountants need to develop several capabilities, including understanding how AI tools operate, selecting appropriate data for processing, and evaluating whether AI-generated results are reliable. Furthermore, accountants need stronger data analysis skills to interpret financial information and explain the business meaning behind the results. Finally, professional judgement remains essential, as accountants must consider the company's circumstances before accepting AI recommendations.

The application of AI also varies across companies depending on their resources, business needs, and technological capabilities. In this regard, Rikhardsson et al. found that companies have different experiences and requirements when adopting AI [10]. Large companies may have greater access to advanced systems and trained employees, while smaller companies may rely on simpler tools. In practice, AI may assist with tasks such as invoice processing, financial forecasting, and anomaly detection, while accountants review the results and determine appropriate actions. Therefore, AI can support accounting work, but responsibility for final decisions remains with human professionals.

6. Conclusion

Based on the review of existing studies, this study finds that AI can support financial accounting by automating repetitive tasks, processing financial data, and assisting analysis. Yet, AI effectiveness depends on data quality, system capabilities, and implementation. Although AI can improve certain accounting processes, accountants remain essential in reviewing AI-generated results, applying professional judgement, and ensuring the reliability of approved financial information. This study has limitations because it is based on existing academic studies and professional reports rather than empirical data from companies using AI in practice. Thus, actual efficiency gains cannot be directly measured, and the findings may not apply to all organisations. Future research could compare AI adoption across companies of different sizes by examining changes in working hours, error rates, and implementation outcomes, as well as exploring how accountant training and human review processes affect the effectiveness of AI in accounting.

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