

Table Of Content

Journal Cover	2
Author[s] Statement	3
Editorial Team	4
Article information	5
Check this article update (crossmark)	5
Check this article impact	5
Cite this article	5
Title page	6
Article Title	6
Author information	6
Abstract	6
Article content	8

Academia Open



By Universitas Muhammadiyah Sidoarjo

Originality Statement

The author[s] declare that this article is their own work and to the best of their knowledge it contains no materials previously published or written by another person, or substantial proportions of material which have been accepted for the published of any other published materials, except where due acknowledgement is made in the article. Any contribution made to the research by others, with whom author[s] have work, is explicitly acknowledged in the article.

Conflict of Interest Statement

The author[s] declare that this article was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Copyright Statement

Copyright © Author(s). This article is published under the Creative Commons Attribution (CC BY 4.0) licence. Anyone may reproduce, distribute, translate and create derivative works of this article (for both commercial and non-commercial purposes), subject to full attribution to the original publication and authors. The full terms of this licence may be seen at <http://creativecommons.org/licenses/by/4.0/legalcode>

EDITORIAL TEAM

Editor in Chief

Mochammad Tanzil Multazam, Universitas Muhammadiyah Sidoarjo, Indonesia

Managing Editor

Bobur Sobirov, Samarkand Institute of Economics and Service, Uzbekistan

Editors

Fika Megawati, Universitas Muhammadiyah Sidoarjo, Indonesia

Mahardika Darmawan Kusuma Wardana, Universitas Muhammadiyah Sidoarjo, Indonesia

Wiwit Wahyu Wijayanti, Universitas Muhammadiyah Sidoarjo, Indonesia

Farkhod Abdurakhmonov, Silk Road International Tourism University, Uzbekistan

Dr. Hindarto, Universitas Muhammadiyah Sidoarjo, Indonesia

Evi Rinata, Universitas Muhammadiyah Sidoarjo, Indonesia

M Faisal Amir, Universitas Muhammadiyah Sidoarjo, Indonesia

Dr. Hana Catur Wahyuni, Universitas Muhammadiyah Sidoarjo, Indonesia

Complete list of editorial team ([link](#))

Complete list of indexing services for this journal ([link](#))

How to submit to this journal ([link](#))

Article information

Check this article update (crossmark)



Check this article impact (*)



Save this article to Mendeley



(*) Time for indexing process is various, depends on indexing database platform

Developing an Accounting Information System Based on Artificial Intelligence to Improve the Quality of Accounting Information and the Decision-Making Process

Pengembangan Sistem Informasi Akuntansi Berbasis Kecerdasan Buatan untuk Meningkatkan Kualitas Informasi Akuntansi dan Proses Pengambilan Keputusan

Fayiz Hazem Al-Obaidy, fayiz.ha@hcu.edu.iq, (1)

⁽¹⁾ Corresponding author

Abstract

General Background: Artificial intelligence (AI) enables systems to understand and interpret data, facilitating intelligent decision-making without human interaction. **Specific Background:** Traditional accounting systems are fraught with flaws that compromise the quality of accounting information and decision-making processes. **Knowledge Gap:** There is a need for advanced AI applications to improve the accuracy of accounting data by precisely evaluating vast amounts of data, identifying errors and corrections, and accelerating financial report creation. **Aims:** This quantitative study aims to enhance accounting information quality by developing an AI-based accounting information system and examining its impact on the decision-making process. **Results:** The research utilized questionnaires to gather opinions from accountants at Rafidain Bank, Iraq, and analyzed the data using SPSS. Findings reveal that modern AI technologies significantly enhance accounting data accuracy, with a 90% success rate in detecting and correcting errors. Additionally, AI technology accelerates financial reporting, reducing the average response time to 250 milliseconds, thereby saving time and effort in accounting processes. **Novelty:** This study is pioneering in its comprehensive evaluation of AI's role in improving accounting data accuracy and operational efficiency within financial institutions. **Implications:** The research underscores the importance of upgrading device and data processing infrastructure to maximize the performance of AI-based accounting systems. The findings suggest that integrating contemporary AI technology in accounting can streamline operations, save accountants time, and boost the overall efficiency of financial and accounting institutions.

Highlight:

- AI improves accounting data accuracy with 90% error detection and correction.
- AI accelerates financial reporting, reducing response times to 250 milliseconds.
- Upgraded infrastructure is crucial for optimal AI system performance.

Keyword: Artificial Intelligence, Accounting Information, Data Accuracy, Financial Reporting, Decision-Making

Academia Open

Vol 9 No 2 (2024): December

DOI: 10.21070/acopen.9.2024.9411 . Article type: (Business and Economics)

Published date: 2024-08-07 00:00:00

Pendahuluan

Many organizations and companies are presently engaged in a remarkable technological transformation of the accounting industry, which involves the integration of modern technologies to enhance operations and efficiency. Artificial intelligence (AI) is one of the most often used technology in accounting attracting more and more interest. It refers to a collection of technologies meant to enable systems' data comprehension and learning so they may make intelligent decisions free from human intervention. AI can significantly enhance accounting data quality by quickly and precisely processing large amounts of data, identifying hidden trends and patterns. This intelligent technology may increase accounting efficiency, minimizing human mistakes and enhancing financial reporting. AI saves time by managing invoicing and payments. Unusual patterns might also indicate fraud. AI can guide accounting decisions with accurate recommendations and advanced analytics based on financial facts and company performance. This helps the company succeed and meet its goals. AI improves data quality, revolutionizing accountancy. Organizations and enterprises are implementing advanced technologies to improve operations and efficiency, resulting in a technological revolution in the sector. AI is a critical asset in the accounting industry, as interest in it is on the rise (Abdel-Rahim, 2023, p. 527). Human mistake and manual data entry reduce data accuracy in traditional accounting systems. This can distort financial records and assessments. Conventional accounting software also issues with massive datasets, delaying financial reporting and making management decisions harder. These systems may also lack sophisticated analysis or specific suggestions to aid decision-making, making them unable to offer accurate and timely information. Decisions without enough data might cause financial losses. Modern AI technologies have the potential to resolve these issues and enhance accounting systems, thereby enhancing institutional decision-making and accounting information (Al-Jaber, 2020, p. 20).

AI is transforming accounting and decision-making by enhancing financial reporting speed and accuracy. This technology boosts competitiveness, eliminates financial risks, and improves regulator and investor relations. AI technology can boost a company's market position by finding and fixing accounting difficulties. Thus, the project sought to create an AI-based accounting information system to improve accounting data quality and accelerate decision-making by answering the following questions:

How can AI techniques be used to improve the accuracy of accounting information?

Which AI technologies can be applied to accelerate financial reporting processes?

How can AI be employed to effectively detect and correct accounting errors?

What are the best practices for using AI to support decision-making in accounting?

Previous Studies

- A study conducted by (Al-Jaber, 2020), "The impact of artificial intelligence on the efficiency of accounting systems in Jordanian banks":

The study examined how AI affects Jordanian banks' accounting information. Financial department staff at 16 Jordanian banks were surveyed for the descriptive-inferential study. The results showed that using AI positively impacts the efficiency of accounting systems in these banks. The study underscored the necessity for bank management to aid expert systems in acquiring knowledge from stored knowledge bases, suggesting the enhancement of AI in banks to enhance efficiency and the need for senior management to assist these systems.

-A study conducted by (Abdel Rahim, 2023), "Using artificial intelligence applications in creating an accounting information system for e-government governance to combat corruption and achieve administrative reform in Egypt":

The study aims to enhance Egypt's e-government performance by utilizing artificial intelligence applications to build an advanced accounting information system. This will activate internal governance mechanisms like internal control, financial control, and internal audit, as well as develop external governance mechanisms like external audit, with the ultimate goal of curbing corruption and achieving administrative reform.

A Study conducted by (Mpofu, 2022), " Artificial intelligence augmented with accounting information systems (AIS): integration for SMEs ":

The study aims to develop a framework for SMEs to integrate artificial intelligence technology into their accounting systems, addressing issues faced in manual and traditional systems. A deductive literature review identified key challenges, weaknesses, and opportunities in AI technology use in SMEs. The study influenced the development of a new framework, helping SME managers choose and use AI solutions in their accounting systems.

A study conducted by (Fadaly, 2023), "Artificial intelligence in the accounting profession: Egypt's case":

The study aims to enhance e-government performance in Egypt by utilizing artificial intelligence applications like expert systems, neural networks, and genetic algorithms to build an advanced accounting information system. This will activate internal governance mechanisms like internal control, financial control, and internal audit, and develop external governance mechanisms like external audit, thereby curbing corruption and achieving administrative reform in Egypt. The following are the most notable characteristics that distinguish the current study from previous ones:

The objective: The current study aims to enhance accounting information accuracy and decision-making using advanced artificial intelligence techniques. While previous studies focused on different topics, such as the impact of artificial intelligence on the efficiency of accounting systems in banks or the use of artificial intelligence applications in building an accounting information system for e-government.

The methodology: The current study adopts an exploratory methodology, exploring the relationship between using artificial intelligence techniques and improving the quality of accounting information. While previous studies adopted descriptive-inferential methodologies or deductive literature reviews.

The findings: The current study found that modern AI techniques in big data analysis increased accounting information accuracy by 90%. This shows the system's error detection and correction capabilities.

The recommendations: Similar to previous recommendations for improving bank AI use and providing a framework for SME organizations to integrate AI into accounting information systems, the study recommends improving hardware and data processing infrastructure to improve system performance.

Literature Review

Accounting and accounting information systems

Accounting, as the language of business, allows for the recording, summarizing, and communicating financial information to stakeholders. Accounting methods have evolved greatly throughout time as a result of technical advancements and regulatory changes. The emergence of accounting information systems (AIS) in recent years has revolutionized the processing and reporting of financial data (Abdul-Rahim, 2023, p. 528).

The role of accounting

Accounting is critical in modern business processes by providing stakeholders with accurate and timely financial information. It serves several purposes, including (Al-Jaber, 2020, p.20):

Preparing financial reports: Accounting creates financial statements such as the balance sheet, income statement, and cash flow statement, which summarize the organization's financial performance and position.

Decision-making: Managers rely on accounting data to make informed decisions regarding resource allocation, investment opportunities, and strategic planning.

Compliance: Accounting ensures that all legal and regulatory requirements are met, such as tax laws, accounting standards, and industry rules.

Performance evaluation: Accounting helps to evaluate a company's performance by comparing actual results with budgets and benchmarks.

The Properties of the current accounting information systems

The modern accounting information system uses advanced technology to simplify accounting processes and enhance decision-making capabilities. The main properties are summarized as below (Muhammad, 2019, p. 335):

The accounting information system integrates different accounting functions, including general ledger, accounts payable, and accounts receivable, into a unified system, eliminating manual data entry and reconciliation (Culén & Kriger, 2014).

It facilitates the automatic execution of routine accounting tasks, including invoice processing, bank reconciliations, and journal entries, thereby enhancing efficiency and minimizing errors.

It gives stakeholders real-time access to financial data, which enables them to monitor business performance and make fast decisions based on most current information.

It uses advanced analytical techniques to examine enormous amounts of financial data in search of important trends and insights that would help companies decide strategically.

It may be customized to fit the demands of many different sectors and companies, therefore enabling scalability

and agility as corporate needs evolve.

The advantages of the existing accounting information systems

There are numerous advantages for organizations that implement the current accounting information systems. These advantages are provided below (Fouad and Abadiya, 2017, p. 30):

Automating and integrating reduce the need for human intervention, streamline accounting processes, and speed up the processing of transactions.

AIS ensures data integrity and minimizes human mistake, making financial information more reliable and accurate.

AIS is a cost-effective solution since it increases efficiency and decreases the likelihood of financial disparities and personnel expenses.

Using real-time access to financial data and advanced analytics to make data-driven decisions helps managers improve business growth and profitability.

AIS facilitates compliance checks and generates precise financial reports to ensure adherence to regulatory requirements and accounting standards (Bostrom, 2014, p. 6).

The challenges and considerations

The following are some of the concerns and difficulties brought up by present accounting information systems, notwithstanding their many advantages (Farraj, 2021, p. 185):

The initial investment required to implement AIS, including software licenses, hardware upgrades, and staff training, can be significant.

Protecting sensitive financial information from cyber attacks and data breaches is vital, necessitating strict cybersecurity measures and adherence to data protection standards.

Integrating AIS with existing systems and processes can be complex, requiring careful planning and coordination to ensure compatibility and data integrity.

Employees may only accept new accounting technologies due to unfamiliarity or concerns about job displacement, highlighting the importance of comprehensive training and change management strategies.

The role of artificial intelligence in accounting

Artificial intelligence (AI) is revolutionizing several sectors, including accounting. AI can transform accounting operations because it can evaluate large data volumes, detect trends, and automate repetitive tasks (Fadaly, 2023, p. 72).

The current applications of artificial intelligence in accounting

Entering the data automatically: AI-powered tools can extract relevant information from invoices, receipts, and other financial documents, eliminating manual data entry and reducing errors.

Detecting the Fraud: AI algorithms can analyze transaction patterns and identify anomalies that indicate fraudulent activity, helping organizations detect and prevent financial fraud.

Financial prediction: AI models can analyze past financial data and market patterns to make accurate predictions and forecasts for strategic planning and budgeting.

Audit automation: AI-powered audit software can analyze financial data, identify risks, check compliance, speed up audits, and improve accuracy.

Expense Management: Cost management with AI save time by classifying spending, finding policy violations, and automating reimbursements (Abdel-Rahim, 2023, p. 530).

Potential applications of artificial intelligence in accounting

Predictive analysis: AI can predict future patterns and results from historical data, helping firms anticipate market shifts and make proactive decisions.

Smart reports: AI-powered reporting tools can give real-time insights and analysis of financial reports tailored to stakeholders.

Risk Management: Organizations can reduce risks and increase risk-adjusted returns by using AI algorithms to evaluate the risks involved in financial transactions and investments.

Tax Compliance: AI-powered tax software can comprehend complicated tax regulations, determine deductions, and optimize tax strategies to reduce tax bills and ensure compliance.

Virtual assistants: AI-powered virtual assistants can answer accounting queries, do routine tasks, and offer insights and recommendations, improving efficiency and decision-making.

Strategic analysis, decision-making, data entry automation, and predictive analytics are changing accounting with AI. This technology improves accuracy, efficiency, and decision-making. Financial management will be affected more as AI technology advances. To truly utilize AI in accounting, firms must handle data privacy, ethics, and labor reskilling (Florida, 2019, p. 3).

The challenges and benefits of artificial intelligence

AI could revolutionise businesses and task performance. Although AI has many benefits, its widespread use faces some problems. This study examines AI's pros and cons in several industries (Russell, 2021, p. 5). Some of AI challenges are referred to in the following:

Data privacy and security: AI relies on data, raising security and privacy concerns. Organizations must protect AI system data from unauthorized access, misuse, and breaches.

Bias and Fairness: Biases in AI algorithm training may lead to unfair results and prejudice. Data selection, algorithmic transparency, and ongoing assessment are needed to reduce AI bias.

Ethical considerations: Due to the ethical implications of AI technology on society, employment, and decision-making, it is imperative that organizations ensure transparency, accountability, and responsible usage.

Skill shortages and workforce displacement: The integration of AI could lead to job displacement, which would require the reskilling and upskilling of the workforce, as well as the investment in training and education programs to enable employees to utilise AI technologies effectively.

Regulation and Governance: Due to regulatory and governance concerns, the rapid advancement of AI necessitates the establishment of frameworks and regulations for responsible AI technology development.

AI poses problems as well as many benefits. By tackling these problems, companies may maximize their innovation, efficiency, and expansion. Implementation has to take technological, ethical, legal, societal consequences into account. Proper application can revolutionize sectors and improve personal and communal quality of living (Davenport, 2018, p. 2).

Developing and evaluating the system

The design of the system

This section describes the key system components together with their interactions with an artificial intelligence-based accounting information system.

First: The components of the system

The basic elements of the AI-based accounting information system consist in:

Database: The organization's accounting information is kept and handled in a database that can easily handle increasing amounts of data and is designed to withstand failures, ensuring the reliable management of enormous volumes of data.

Data collection system: Remote sensing and IoT among other modern technologies can automatically and constantly gather data from bills, financial transactions, customer and supplier information.

Data analysis system: Extensive accounting information is extracted and notable trends and patterns are found using artificial intelligence and data analysis tools including machine learning, big data analysis, and natural language processing.

User Interface: Users should be able to enter data, search accounting data, and obtain system reports and analytics thanks to an easily navigable user interface.

Report creating system: Comprehensive financial reports and analysis produced by the accounting information system might include financial balances, statements, analysis, and performance from accounting data.

Second: The Integration of the components

Therefore, it was necessary to clarify the most important characteristics that the system must possess to achieve the goals for which it was developed, which are: accuracy, speed, flexibility, reliability, data and information security, feedback self-monitoring, and cost (Al-Shanti, 2013, 101).

This section seeks to properly organize each developed component to form the final system. Component integration consists of the following phases:

To ensure compatibility and efficient functioning, the source code, files, libraries, databases, and other components of the system implementation are gathered and compiled.

After the assembly process, the components are tested to verify that they are properly integrated, connect with each other, exchange data correctly, operate as a system, have smooth data flow, and interact with other components.

The system's performance is evaluated to verify that it can handle the predicted workload, is responsive and efficient, and protects data using appropriate security methods. These tests are critical to system operation.

Following passing integration, performance, and security testing final integration gets the system ready for manufacturing. Here happens data transmission, configuration, and user requires adjustment.

The system is installed in a production environment and deployed to end users after final testing, requiring routine monitoring to ensure optimal functionality and resolve any malfunctions or issues.

After deployment, system continuity and user demands are ensured through bug patches, software upgrades, performance improvements, and technical assistance.

Behavioral patterns represent the cultural and social behavior patterns of the environment surrounding the economic unit, the impact of which is reflected in accounting information systems (Abdullah and Qatnani, 2007, 8). Behavioral considerations must be taken into account when developing and testing the developed system because these systems face strong resistance from various groups in the facility and to confront this resistance. The following must be taken into account (Saad and Al-Hasoumi, 2017, 13):

Effective participation of users in developing information systems.

Full senior management support for these systems development activities and processes.

C. Clarifying the policies of the economic unit and the challenges it faces and mobilizing efforts to support the development and application of the information systems necessary to meet those challenges.

In summary, component integration is indispensable for the success of a system, as it guarantees the desirable performance and effective interaction of every component. The system is constructed, tested, and deployed by the development team.

Developing the system

The system is developed through various steps that are displayed as below (Sarwar et al., 2021, 220):

At the beginning of the development process, the functional and technical requirements of an accounting system that is based on artificial intelligence are developed. These requirements include objectives, features that are essential, and features such as data analysis and advanced accounting reports.

In the second step, which was previously mentioned in the question, the system's design and its fundamental components are defined. Figure out the layout of the database, the user interface, and the tools that will be used for accounting reporting and data analysis.

This step involves programming and creating design-stage components. System components are built and tested using the relevant programming languages and development tools. You should verify component compatibility and integration.

A comprehensive system test is conducted to guarantee that it satisfies the established standards. This encompasses the evaluation of the system's functionality, compatibility, and performance. It is imperative to resolve any issues or vulnerabilities that are discovered during the testing procedure.

Following the testing stage, the technology finds application in the actual production environment. Data is shared, users are trained to operate the system suitably, and the system is setup.

System performance and dependability are evaluated after deployment. Review of the system's use and accounting data helps one evaluate accounting information quality and influence on decision-making.

The development of accounting information systems is a translation of the requirements that were previously identified into an integrated framework for information systems. Development is ideal if the information systems are compatible with the circumstances and capabilities of the economic unit, according to the feasibility studies carried out by the administration before the system design phase. Accountants play an important role in The system development stage is due to their knowledge of the users' need for information, and the system developer must decide, based on the recommendations of the systems analyst, the method by which the information system will be developed (Naseer, 2018, 48).

The development team of an AI-based accounting information system must select the appropriate tools and programming languages. These are explained in the following:

Python, Java, or C++ are popular for developing systems in artificial intelligence due to their simplicity and compatibility with AI packages like TensorFlow and PyTorch, while Java and C++ can be used for complex systems.

TensorFlow, PyTorch, and Scikit-learn are advanced AI and machine learning technologies that enable complex model and algorithm implementation with powerful analysis functions.

Either MySQL, PostgreSQL, or MongoDB is a fast-performance, safe database suitable for storing the accounting data.

Development and source code administration are simplified by integrated development technologies such as Git and frameworks like Flask or Django.

In summary, the team's competencies and system requirements should dictate the selection of programming languages and tools, while the quality and stability of the system are maintained by software development and security best practices.

Evaluating the system

System performance evaluation is a crucial process that utilizes tests and case studies to assess a system's ability to meet user needs and goals. The following are some typical approaches of system performance evaluation:

Load tests that simulate real-world activity are used to assess a system's performance under very high loads. Under control are the response rate, time, and concurrent users of the system (Ortiz et al., 2020, 338).

Functional Performance Testing assesses, in terms of execution time, success and failure rates, and other functional aspects, the performance of the system. Accounting information systems have the ability to record transactions correctly through modern technical means, which requires the presence of an accounting system characterized by the following: efficiency, effectiveness, and speed. In proving transactions in a timely manner and providing the necessary information in a timely appropriate (Al-Fatlawi, 2013, 295).

Response Time Testing is employed to evaluate the length between when a user request is received and when the system answers, in order to quantify the system's performance and provide a seamless user experience (Ghani & Muhammad, 2019, 28).

Case studies evaluate the efficacy of a system in real-world situations, examining the benefits and potential difficulties, and assessing the system's ability to solve issues and achieve goals (Al-Jazrawi and Saeed, 2009).

Assessing the performance of a system requires analyzing data, interpreting tests, and submitting a comprehensive report that outlines results and proposes improvements. This process involves using certain metrics and criteria (Smeda, 2015).

Response Rate: The system's response time is measured, taking into account the number of requests received and processed within the specified timeframe.

Error Rate: The program calculates the percentage of errors or failures in operations, establishes acceptable error rate limits, and counts the number of errors successfully resolved.

Resource Efficiency: The system's resource consumption, including memory, processing, and network, is evaluated based on concurrent users and processing load size, and is compared to available resources and the system's effective resource management.

Performance Requirements: System performance is assessed against pre-defined standards, including response time and concurrent user handling, to determine necessary performance standards without negatively impacting system performance.

Because artificial intelligence is the result of the convergence of modern science and technology, this convergence has given it a number of characteristics, including the following (Deif et al., 2023, 447).

The ability to respond by dealing with difficult and complex situations and use intelligence to solve problems. The ability to deal with ambiguous situations while trying to deal with incomplete information, as well as the ability to present or present different perceptions. The ability to use old experiences and employ them in new situations, use trial and error to discover different matters, and distinguish the relative importance of elements of a situation or circumstances. The ability to learn: Most intelligent systems have the ability to learn from their experiences and tasks, and even have the ability to derive the appropriate model to solve the problem that is the subject of the decision, by using hundreds and thousands of transactions that occurred in the past, as is the case in applications of neural network systems and genetic algorithms.

In brief, regular system performance evaluations are crucial for maintaining good performance and continuous improvement, requiring specialized tools and collaboration between the development team and end users to ensure accurate and reliable results. It increases the possibility of its maintainability, as well as addressing the problems of monitoring or decision-making problems that are not easily defined by mathematical models (Al-Obaidi, 2023, 88).

Metode

The research is a quantitative study that aims to develop an artificial intelligence-based accounting information system to improve the quality of accounting data and the decision-making process. This study studied the relationship between using artificial intelligence technology and raising the level of accounting information using the exploratory method.

The instruments of the study

The research used a variety of tools and techniques to collect the data. Questionnaires were used to collect the opinions and evaluations of accountants and financial managers about the quality of accounting information and the decision-making process. Interviews were also conducted with experts in the fields of accounting and artificial intelligence to obtain deeper and more detailed insights. Secondary data from previous studies and financial reports of financial institutions were also used.

The Sample of the study

The statistical analysis of the study

The study utilized both quantitative and qualitative data analysis methods, including SPSS, regression analysis, correlation analysis, and content analysis, to examine the relationship between artificial intelligence technologies and the enhancement of accounting information quality, as well as qualitative data from interviews and secondary reviews.

Hasil dan Pembahasan

The extent of the accuracy of the accounting results that the economic unit relies on in formulating policies for planning and achieving control generally depends on the efficiency and effectiveness of the accounting information systems used in these units. It is perhaps necessary that when designing, developing and operating these systems, they be able to provide accurate financial results and reduce Opportunities to make mistakes, preserve the assets of the economic unit, combat negatives, and prevent fraud, embezzlement, and manipulation (Al-Tayeb et al., 2017, 62).

The summary of the tests

- The number of conducted tests: 100
- The standards used for evaluation: system accuracy, response time, user satisfaction

The performance of the system

- Average response time: 250 milliseconds
- System accuracy rate: 90%
- User satisfaction rate: 85%

The analysis of performance

-The results indicate that the system responds quickly, with a short average response time.

-The system's accuracy is high, exceeding 90%, indicating that it works efficiently to achieve the correct results.

-However, there are some areas that could use improvement to boost user satisfaction and enhance the user experience.

Concerning the first aim of the current study, using modern AI techniques to improve the accuracy of accounting information by analyzing large amounts of data more accurately and detecting errors and corrections more effectively, The system achieved an accuracy rate of 90%, indicating an increase in accuracy. Using AI in system applications increases large data analysis, allowing for more accurate error detection and repairs. The study aims to use AI technology to expedite financial report creation, save time, and enhance accounting procedures. The system, which reacts quickly, improves efficiency by speeding up operations and enhancing accuracy of accounting information. The application and evaluation align with research objectives. The system's implementation and evaluation results provide valuable insights into its performance, highlighting its strengths and areas for improvement. In light of previous literature, these findings are listed below:

System accuracy: The system's effectiveness in attaining accurate results is evidenced by its high accuracy rate of 90%. This aligns with previous literature emphasizing the importance of accuracy in AI systems (Floridi, 2019). High accuracy is crucial, especially in finance, healthcare, and security fields, where errors can have serious consequences (Russell, 2021).

Response Time: The system's rapid average response time of 250 milliseconds is crucial for user satisfaction and ease of use, as shorter response times lead to increased satisfaction, as highlighted by Davenport (2018).

User satisfaction: Even 85% client satisfaction is high, there is always room for improvement. Satisfaction indicates system adoption and usability. Early research has underlined user experience as vital to AI system acceptability and performance. Higher general system efficacy, user engagement, and productivity can all follow from increased user satisfaction (Floridi, 2019).

Recommendations: The guidelines match AI system performance literature. In AI research, responsiveness, accuracy, and user experience are often addressed. To solve these problems, researchers have suggested algorithm, data quality, and user interface improvements (Bostrom, 2014).

Conclusions: The study highlights the system's efficiency and accuracy while suggesting improvements. This proactive approach to system evaluation and enhancement is crucial to AI system performance and relevance (Russell, 2021).

Simpulan

According to the investigation's results, the following conclusions are drawn:

Modern AI-powered data analysis has improved accounting data accuracy. The system detected and corrected problems with 90% accuracy.

AI technology enhance financial reporting speed. With an average response time of 250 milliseconds, the system saved accounting time and effort.

The findings imply that contemporary AI technology may improve accounting accuracy and speed up financial reporting. This may streamline accounting operations, save accountants time, and boost financial and accounting institution efficiency.

References

1. K. A. Abdullah and K. Qatnani, "The Banking Environment and its Impact on the Efficiency and Effectiveness of Accounting Information Systems - An Analytical Study on Jordanian Commercial Banks," *Jordanian Journal of Applied Sciences*, University of Applied Sciences, Amman, Jordan, vol. 10, no. 1, 2007.
2. L. N. Al-Fatlawi, "The Accounting Environment and Indicators of its Adaptation to Information Technology," *Journal of the Baghdad University College of Economic Sciences*, special issue of the college conference, 2013.
3. I. M. A. Al-Jazrawi and L. M. Saeed, "Information Technology Tools and Their Role in the Efficiency and Effectiveness of Accounting Information," *Journal of Management and Economics*, no. 75, 2009.
4. F. H. Al-Obaidi, "The Effect of Digital Transformation on the Design of Accounting Information Systems Within the Framework of the Economic Unit Strategy," Ph.D. dissertation, College of Administration and Economics, University of Mosul, Iraq, 2023.

5. A. M. Al-Shanti, "The Impact of Applying Accounting Information Systems on Improving the Effectiveness and Efficiency of Internal Auditing in the Jordanian Industrial Sector," *Journal of the Islamic University for Economic and Administrative Studies*, vol. 21, no. 1, pp. 99-125, 2013.
6. I. M. Al-Tayeb et al., "Accounting Information Systems and Their Role in Rationalizing Investment Decisions - A Field Study," *Journal of the Sudan University of Science and Technology, Faculty of Business Studies, Department of Accounting and Finance*, no. 1, 2017.
7. M. F. Dhaif, A. S. Shehata, and D. Anathan, "The Impact of Digital Transformation Technology on the Quality of Auditing Work," *Alexandria Journal of Accounting Research, Accounting and Auditing Section*, vol. 7, no. 1, pp. 1-27, 2023.
8. G. Al-Jaber, "The Impact of Artificial Intelligence on the Efficiency of Accounting Systems in Jordanian Banks," M.S. thesis, Middle East University, Amman, Jordan, 2020.
9. F. Hamzawi and N. Abadalia, "The Accounting Information System and its Impact on the Quality of Accounting Information," *Tebessa: Larbi University of Tebessi*, 2017.
10. M. H. Farrag, "The Implications of the Use of Digital Systems on Management Accounting and the Challenges Facing Management Accountants (A Field Study)," *Journal of Business Research*, pp. 181-139, 2021.
11. A. I. Naseer, "The Role of Computerized Accounting Information Systems in Enhancing the Efficiency of Administrative Decisions in Jordanian University Hospitals - A Field Study," M.S. thesis, Jadara University, Irbid, Jordan, 2018.
12. R. J. Muhammad, "Accounting Information System Using Ready-Made Programs," *College of Arts Research Journal, Menoufia University*, pp. 333-350, 2019.
13. M. A. T. Ali and F. M. Al-Hasoumi, "Accounting Information Systems and Their Impact on Decision-Making, an Applied Study on the Sorman Feed Factory," *Journal of Human and Society Studies*, no. 3, 2017.
14. S. A. Rahim, "Using Artificial Intelligence Applications to Build an Accounting Information System for E-Government Governance to Combat Corruption and Achieve Administrative Reform in Egypt," *Journal of Financial and Business Studies*, vol. 525, no. 553, pp. 1-28, 2023.
15. A. Mpofu, "Artificial Intelligence Augmented with Accounting Information Systems (AIS): Integration for SMEs," presented at the International Conference of Accounting and Business (ICAB), Johannesburg, South Africa, 2022.
16. C. V. Guzmán-Ortiz, N. G. Navarro-Acosta, W. Florez-Garcia, and W. Vicente-Ramos, "Impact of Digital Transformation on the Individual Job Performance of Insurance Companies in Peru," *International Journal of Data and Network Science*, vol. 4, 2020.
17. A. L. Culén and M. Kriger, "Creating Competitive Advantage in IT-Intensive Organizations: A Design Thinking Perspective," presented at the International Conference on HCI in Business, Springer, Cham, June 2014.
18. D. S. Fadaly, "Artificial Intelligence in the Accounting Profession: The Egypt," *Scientific Journal of Business Research*, pp. 71-132, 2023.
19. E. K. Ghani and K. Muhammad, "Industry 4.0: Employers Expectations of Accounting Graduates and its Implications on Teaching and Learning Practices," *International Journal of Education and Practice*, vol. 7, no. 1, 2019.
20. L. Floridi, "Artificial Intelligence: Challenges and Opportunities," in *The Routledge Handbook of Philosophy of Information*, Routledge, pp. 461-476, 2019.
21. N. Bostrom, *Superintelligence: Paths, Dangers, Strategies*, Oxford University Press, 2014.
22. S. J. Russell, *Artificial Intelligence: A Modern Approach*, Pearson, 2021.
23. S. M. Imran et al., "Data Vaults for Blockchain Empowered Accounting Information Systems," *IEEE*, vol. 9, pp. 117306-117324, 2021.
24. J. Smeda, "Benefits, Business Considerations and Risks of Big Data," Stellenbosch University, Faculty of Economic and Management Sciences, School of Accounting, Thesis (MComm), Stellenbosch, Western Cape Province, South Africa, 2015.
25. T. H. Davenport, "Artificial Intelligence for the Real World," *Harvard Business Review*, vol. 96, no. 1, pp. 108-116, 2018.