Volume 7 Issue 1 (2024) Pages 504 - 523
YUME : Journal of Management
ISSN : 2614-851X (Online)

From Ledger to Artificial Intelligence: Tracing the Evolution of Accounting in the Age of Technology

Nouke Sysca Oroh[1], Danny Ivan Rantung[2], Niel Ananto[3], Jimmy Moedjahedy✉[4]
[1,2,3] Program Studi Akuntansi, Universitas Klabat
[4] Program Studi Sistem Informasi, Universitas Klabat

Abstrak

Metode akuntansi tradisional, seperti buku besar manual, mulai ditinggalkan di era teknologi. Studi ini mencoba menggali lebih dalam perbaikan ini dan menjelaskan bagaimana teknologi telah meningkatkan pengambilan keputusan dalam akuntansi. Studi ini menggunakan metodologi PRISMA 2020, menganalisis 235 artikel dari Scopus dan Google Scholar yang diterbitkan antara tahun 2020 dan 2024, untuk menyelidiki dampak transformatif teknologi terhadap pengambilan keputusan akuntansi. Pemeriksaan mendetail terhadap 64 artikel mengungkapkan adanya pergeseran besar menuju digitalisasi, teknologi otomasi, kecerdasan buatan (AI), dan blockchain dalam sektor akuntansi. Kemajuan teknologi pemrosesan informasi mendorong digitalisasi, mengubah akuntansi keuangan menjadi sistem yang terhubung dan digital. Otomatisasi Proses Robot (RPA) dan otomatisasi yang didukung AI merupakan komponen penting yang mengoptimalkan operasi dengan meminimalkan pekerjaan manusia dan meningkatkan efektivitas organisasi. Strategi yang jelas sangat penting untuk mengoptimalkan adopsi teknologi karena hubungan simbiosis antara otomatisasi akuntansi dan AI. Mengotomatiskan penagihan dan entri jurnal secara real-time mengurangi beban kerja, mendorong perluasan organisasi. Menggabungkan teknologi blockchain dengan kecerdasan buatan menjamin transparansi dan keamanan dengan memanfaatkan catatan yang tidak dapat diubah, mengotomatisasi operasi, dan meningkatkan efisiensi transaksi keuangan. Kualitas audit berbasis AI meningkatkan akurasi dengan meminimalkan kesalahan. Konvergensi teknologi ini menunjukkan perubahan signifikan dalam industri akuntansi, meningkatkan efisiensi, meminimalkan tenaga kerja manual, dan mendorong kesuksesan perusahaan. Profesional akuntansi harus beradaptasi dan menegosiasikan perubahan ini untuk memastikan relevansi dan kekuatan sektor ini.

Kata Kunci: *Digitalisasi Akuntansi, Akuntansi Modern, Automasi Akuntansi*

Abstract

Traditional accounting methods, such as manual ledgers, are being phased out in the technological age. This study tries to delve deeper into these improvements and elucidate how technology has enhanced accounting decision-making. This study employs the PRISMA 2020 methodology, analyzing 235 articles from Scopus and Google Scholar published between 2020 and 2024, to investigate the transformative impact of technology on accounting decision-making. A detailed examination of 64 articles reveals a pronounced shift towards digitalization, automation technologies, artificial intelligence (AI), and blockchain within the accounting sector. The advancement of information processing technology is driving digitalization, transforming financial accounting into a connected and digitized system. Robotic Process Automation (RPA) and AI-powered automation are essential components that optimize operations by minimizing human work and improving organizational

effectiveness. Clear strategies are essential to optimize technology adoption due to the symbiotic relationship between accounting automation and AI. Automating billing and journal entries in real-time reduces workloads, promoting organizational expansion. Combining blockchain technology with artificial intelligence guarantees transparency and security by utilizing an unalterable record, automating operations, and enhancing the efficiency of financial transactions. AI-driven audit quality improves accuracy by minimizing mistakes. This technology convergence indicates a significant change in the accounting industry, enhancing efficiency, minimizing manual labour, and encouraging corporate success. Accounting professionals must adapt to and negotiate these changes to ensure the continued relevance and strength of the sector.

Keywords: *Digitalization Accounting, Modern Accounting, Automation Accounting.*

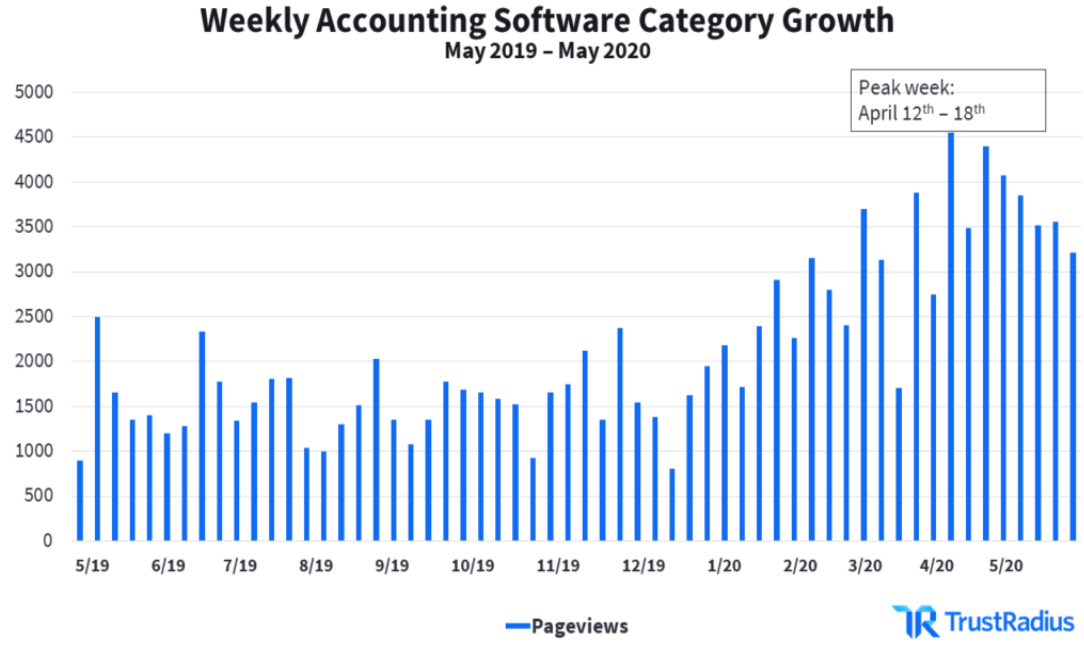
✉ Corresponding author :
Email Address : jimmy@unklab.ac.id

INTRODUCTION

Technology has emerged as an essential part of our lives in the ever-changing modern world. It dramatically affects various businesses, including accounting, a field often perceived as stagnant and unchanging. This study explores the shift of accounting operations from outdated ledger-based systems to advanced database-based systems. The rapid technological improvement has caused this significant transformation. Cloud computing, artificial intelligence, and databases have revolutionized the accounting profession, enhancing its accuracy, efficiency, and insightfulness. Technological developments have reduced human error, automated mundane tasks, accelerated financial management, and allowed accountants to focus on more strategic responsibilities.

Accounting software has remained a continually popular category. 503 comprehensive evaluations were released in this area in the previous year, and the accounting software category receives an average of 2,689 pageviews every week as seen on figure 1. Due to significant buyer interest, accounting software is among our top 20 categories for new reviews in the past year, with thousands of detailed evaluations published so far (Huisache, 2020).

Figure 1. Accounting Software Growth (Huisache, 2020)



Koley & Kumar (2021) Examine the effects of computerized and manual accounting processes on Microfinance institutions in the Ranchi district of Jharkhand, India from 2020 to 2021. Research shows that computerized accounting systems have a greater impact on banks' stated profitability than manual accounting systems. Computerized systems notably save time for employees and improve overall efficiency. The report suggests implementing computerized accounting systems in Microfinance institutions in India to enhance profitability and operational efficiency. Ndubuisin et al. (2017) also evaluate the effects of computerized accounting systems compared to manual accounting methods in Nigerian micro-finance banks between 2006 and 2015. The research results suggest that computerized accounting systems have a greater favorable impact on the profitability of banks compared to manual systems. The study suggests that Microfinance institutions should implement computerized accounting methods to improve their profitability.

This study aims to examine these advancements in more depth and clarify how technology has improved accounting decision-making. The text explores how technology has improved financial forecasting and strategic planning, as well as made data processing more efficient. This provides a comprehensive understanding of current accounting methods and their evolution over time. This study also seeks to understand the broader implications of this technological change. The text examines the influence of this transition on firms, accountants, and the financial system as a whole. The text explores the challenges and opportunities the digital revolution presents, providing valuable information for professionals and scholars. This essay emphasizes the crucial role technology will play in the future of accounting. The text

explores potential future developments by analyzing how emerging technology may continue to revolutionize the sector. It aims to enhance the ongoing discussion about the relationship between technology and accounting by stimulating further research and discussion on this significant topic.

METHODOLOGY

The research approach adopted for this study toward accomplishing the objectives set forth is PRISMA 2020 (Page et al., 2021). This process serves as a substitute for the previous one, PRISMA 2009. One major distinction is the revised framework. The current version consists of two distinct sections that can be utilized if deemed suitable: identification research employing an alternative method and a preliminary investigation. Figure 2 has been modified to suit this inquiry, graphically presenting the procedural sequence of this process.

Figure 2. Research Flow using PRISMA 2020

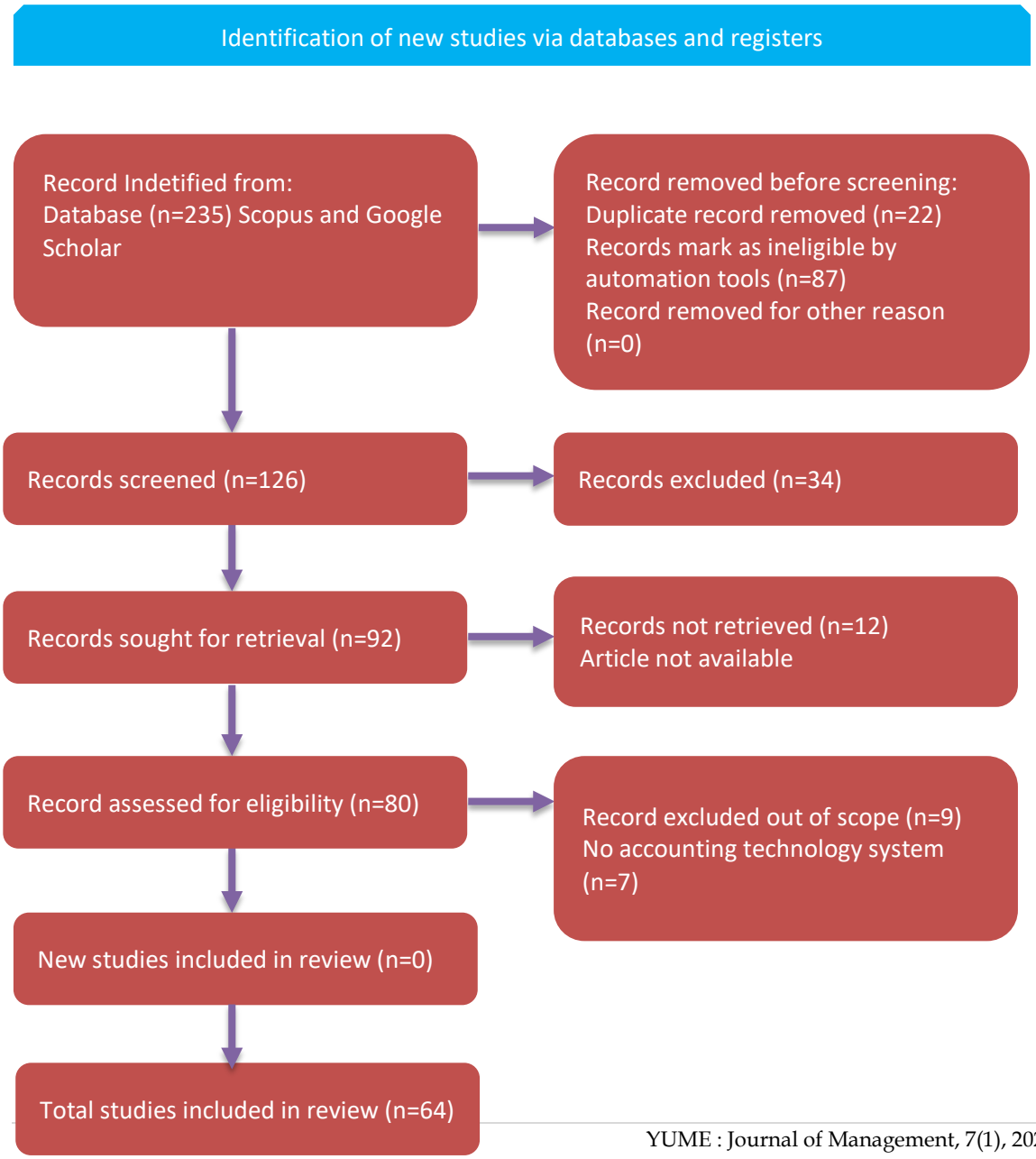


Table 1. Total studies included.

No.	Author/Year	Title	Database
1	(Lv, 2021)	Computer Information Processing Technology in Financial Accounting Information System	Google Scholar
2	(Zheng, 2022)	Construction Research of Accounting Information System Based on Data Visualization Technology	Google Scholar
3	(Yin, 2023a)	Design and Implementation of Financial Accounting System Based on Cloud Computing Technology(Liu & Jia, 2024)	Google Scholar
4	(Liu & Jia, 2024)	Design of Chain Store Accounting Information System Based on Blockchain Technology	Google Scholar
5	(Sun, 2022a)	Design of Information System for Accounting File Management Based on Computer Technology	Google Scholar
6	(Luo, 2022)	Design of Intelligent Accounting Education System Based on Data Processing Technology	Google Scholar
7	(Q. Dai, 2022a)	Designing an Accounting Information Management System Using Big Data and Cloud Technology	Google Scholar
8	(A. Wang & Chu, 2023)	Development of Enterprise Management Accounting Information System Based on Big Data Technology	Google Scholar
9	(Sari et al., 2021)	How information technology and financial accounting system impact information quality of governmental financial statement	Google Scholar
10	(Lim, 2013)	Impact of Information Technology on Accounting Systems	Google Scholar
11	(Hardika, 2020)	Increasing Managerial Performance through The Use of Information Technology and Decentralization Characteristics of the Management Accounting System	Google Scholar
12	(Chowdhury, 2023a)	Integration of Artificial Intelligence Technology in Management Accounting Information System: An Empirical Study	Google Scholar
13	(Yang, 2020)	On the Credibility Guarantee Mechanism of Accounting Information System	Google Scholar
14	(X. Dai, 2021a)	Optimization of Accounting Management Information System Under the Background of Block Chain Technology	Google Scholar

15	(Mingming, 2020a)	Research on the Application of Blockchain Technology in Accounting Information System	Google Scholar
16	(Suarta et al., 2022)	Technology and Information System Expertise Demand for Accounting Professionals: A Requirements Analysis of Job Advertisements	Google Scholar
17	(Astuti & Augustine, 2022)	The Effect of Digital Technology and Agility On Company Performance with Management Accounting System as Mediation	Google Scholar
18	(Taufik, 2022)	The Effect of Using Information Technology, User Involvement, and Support from Top Management on Performance of Accounting Information System	Google Scholar
19	(Qatawneh, 2022a)	The influence of data mining on accounting information system performance: A mediating role of information technology infrastructure	Google Scholar
20	(Chen & Long, 2023)	The Empowerment and Subversion of Information Technology to Accounting Information System	Google Scholar
21	(Vărzaru et al., 2022)	Assessing Users' Behavior on the Adoption of Digital Technologies in Management and Accounting Information Systems	Scopus
22	(Ionescu, 2022)	Big Data Algorithms and Artificial Intelligence Technologies in Cloud-based Accounting Information Systems	Scopus
23	(Cazazian, 2022)	Blockchain Technology Adoption in Artificial Intelligence-based Digital Financial Services, Accounting Information Systems, and Audit Quality Control	Scopus
24	(Al-Okaily et al., 2023)	Blockchain technology and its applications in digital accounting systems: insights from Jordanian context	Scopus
25	(Nguyen, 2023)	Blockchain technology and sustainable performance: moderated-mediating model with management accounting system and digital transformation	Scopus
26	(Khoruzhy et al., 2023)	Cloud Technologies in the Accounting Information System of Interorganizational Cooperation	Scopus
27	(S. Li, 2022)	Construction of Accounting Technology Block Analysis System Under the Background of Big Data Cloud Computing	Scopus
28	(H. Wang et al., 2024)	Construction of Enterprise Asset Management Accounting System Based on Blockchain Technology	Scopus

29	(Yin, 2023b)	Design and Implementation of Financial Accounting System Based on Cloud Computing Technology	Scopus
30	(Sun, 2022b)	Design of Information System for Accounting File Management Based on Computer Technology	Scopus
31	(Q. Dai, 2022b)	Designing an Accounting Information Management System Using Big Data and Cloud Technology	Scopus
32	(Chowdhury, 2023b)	Integration of Artificial Intelligence Technology in Management Accounting Information System: An Empirical Study	Scopus
33	(Xie, 2021)	Management Accounting Innovation System Based on Artificial Intelligence Technology	Scopus
34	(X. Dai, 2021b)	Optimization of Accounting Management Information System Under the Background of Block Chain Technology	Scopus
35	(Mingming, 2020b)	Research on the application of blockchain technology in accounting information system	Scopus
36	(B. Li, 2023)	Research on the Application of Computer Intelligent ERP Technology in Corporate Financial Accounting Fund Audit System	Scopus
37	(Yoshikuni et al., 2023)	Role of Emerging Technologies in Accounting Information Systems for Achieving Strategic Flexibility through Decision-Making Performance: An Exploratory Study Based on North American and South American Firms	Scopus
38	(Meiryani et al., 2021b)	The Effect of Information Technology Development on The Quality of Accounting Information Systems	Scopus
39	(Abdullah et al., 2023)	The impact of information technology on accounting systems towards SME performance in Malaysia	Scopus
40	(Qatawneh, 2022b)	The Influence of Data Mining on Accounting Information System Performance: A Mediating Role of Information Technology Infrastructure	Scopus
41	(Bako & Tanko, 2022)	The Place of Artificial Intelligence in Accounting Field and the Future of Accounting Profession	Scopus
42	(Huisache, 2020)	Accounting Software Statistics and Trends	Scopus
43	(Sumarna, 2020)	Reshaping Future Skills of Professional Accountants	Scopus
44	(Karmańska, 2023)	Coding Skills in the Automation of Accounting Processes	Scopus

45	(Coman et al., 2022)	Digitization of Accounting: The Premise of the Paradigm Shift of Role of the Professional Accountant	Scopus
46	(Kovalenko et al., 2021)	Artificial intelligence in the accounting profession	Scopus
47	(Noviani & Muda, 2022)	The Evolution of Accounting Software: Review of Blockchain Technology in Audit	Scopus
48	(Shevchenko et al., 2021)	Improving Methods of Accounting for Working Time in the Context of Digitalization	Scopus
49	(Shevchenko et al., 2021)	Improving Methods of Accounting for Working Time in the Context of Digitalization	Scopus
50	(Teru et al., 2019)	The Impact of E - Accounting in Modern Businesses	Scopus
51	(Nikolova, 2023)	The Accounting Education: Is a Paradigm Shift Needed?	Scopus
52	(Bellucci et al., 2022)	Blockchain in accounting practice and research: systematic literature review	Scopus
53	(Alghafiqi & Munajat, 2022)	Impact of Artificial Intelligence Technology on Accounting Profession	Scopus
54	(Hesam, 2017)	Impact of Information Technology in Evplution of Traditional Accounting to Modern Accounting	Scopus
55	(Azman et al., 2021)	Artificial Intelligence in Automated Bookkeeping: A Value-added Function for Small and Medium Enterprises	Scopus
56	(Ware, 2015)	Computerised Accounting System an Effective Means of Keeping Accounting Records in Ghanaian Banks: a Case Study of the Ga Rural Bank	Scopus
57	(Nasution, 2022)	Digital Accounting Application in Oil Palm Plantation in Indonesia	Scopus
58	(L. N. Wang, 2011)	Impact of information technology on accounting	Scopus
59	(Tilahun, 2019)	Determinants of Computerized Accounting Information System Adoption by Hospital in Addis Ababa, Ethiopia	Scopus
60	(Zhong et al., 2022)	Research on Enterprise Financial Accounting Information Security Model Based on Big Data	Scopus
61	(Chanthinok & Sangboon, 2021)	The Development of Digital Accounting System on Cloud Computing	Scopus
62	(Koley & Kumar, 2021)	Comparative Analysis of Computerized Accounting System and Manual Accounting System in Ranchi at Jharkhand	Scopus

63	(Ndubuisin et al., 2017)	Comparative Analysis of Computerized Accounting System and Manual Accounting System of Quoted Microfinance Banks (MFBs) in Nigeria	Scopus
64	(Sapkota, 2022)	Computerized Accounting Information System in Nepalese SMEs	Scopus

Figure 3. Article bibliometric on scopus database

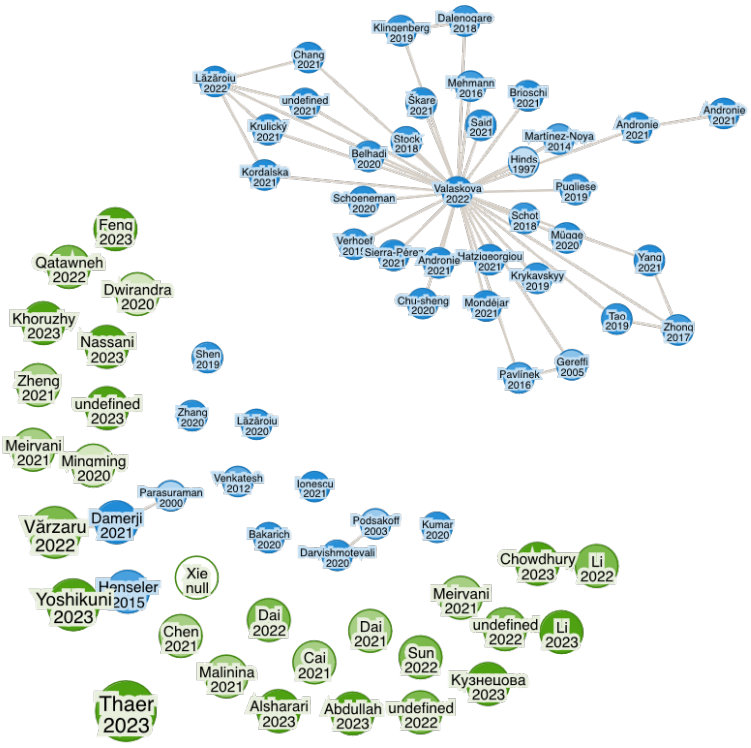
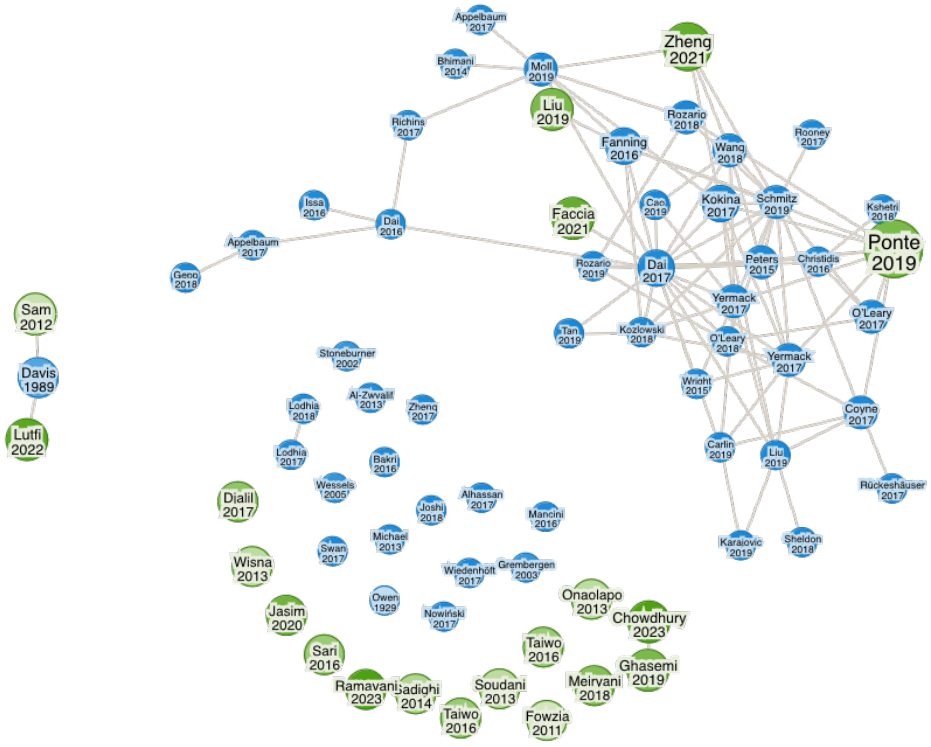


Figure 4. Article bibliometric on Google Scholar database



RESULT AND DISCUSSION

An in-depth review of 64 articles released from 2020 to 2024 showed that the accounting industry is shifting towards digitalization, automation technologies, artificial intelligence, and blockchain.

Digitalization on Accounting

Users are more likely to adopt digital technology in decision-making since artificial intelligence (AI) plays a big role in handling monotonous chores. (Vărzaru et al., 2022). Traditional accounting methods typically fail to meet the information requirements of business management. Digitalization concentrates on utilizing computer information processing technologies to improve financial accounting processes. Business data can be extracted, organized, and loaded into the data warehouse by using pre-defined data warehouse models and technologies such as SQL Server. The system automatically creates accounting vouchers according to predefined standards, enabling accounting staff to concentrate on classification and summarization processes. This simplifies the entire accounting process, from data collection to output, greatly decreasing the workload for accountants. Digital signatures streamline the process of authorizing approval, allowing for a networked and digital financial system. The adoption of network finance has increased company processing speed by 27.5% and enhanced production and procurement plan accuracy from 30% to above 90%. (Lv, 2021). Organizations are working to utilize information technology by adopting the concepts of "digital transformation" and "digitalization of business," which are extensively debated in various communication platforms. Digital

transformation can improve both the accounting profession and organizations. Technologies present challenges for accountants, which result in new perspectives and the enhancement of essential skills, promoting creativity and opening up new possibilities. Professionals are increasingly recognizing the advantages of updating and advancing accounting process models, as seen by the growing prominence of the word "digitisation." (Fredo et al., 2023)

Automation and Artificial Intelligence (AI) Technologies on Accounting

Robotic Process Automation has become widely utilized over the past two decades and is a valuable tool for various company administration jobs. Robotic Process Automation is a system that automates standardized and rule-based tasks through the use of scripts. Robots can be utilized to transfer data between systems, such invoicing and payrolls. Utilizing software robots to automate operations is simple to set up and can be deployed to automate manual tasks. They are capable of tasks including transferring data between applications, comparing data across different systems, and performing advanced operations. (Gotthardt et al., 2020). AI-based accounting automation technology allows for the speedy and accurate automation of accounting tasks, reducing the need for a large workforce. Many technologies adopted by SMEs failed not because of the technology itself, but because of underestimating the influence of other interconnected aspects. There is a favorable relationship between accounting automation and AI adoption. Stakeholders should prioritize how artificial intelligence may enhance the automation process by establishing a clear vision and strategy to increase technology adoption. The study discovered that timesaving has a significant and beneficial impact on the adoption of accounting automation and AI. This discovery provides technology providers with insight into the decision-making process of enterprises when it comes to adopting new technologies.

An example of this technology in action is the automated bookkeeping system. Implementing invoice automation and journal entry automation significantly eased the everyday responsibilities of most employees and decreased their workloads. The implementation of real-time invoicing and journal entry processes has significantly impacted the company's growth. The automated bookkeeping system has a beneficial impact on the functioning of SMEs and helps them overcome problems. The solution aids small and medium-sized enterprises in boosting their growth rate and maintaining efficient in-house record-keeping (Azman et al., 2021). In small and medium-sized organizations, accounting department roles are often not categorized into traditional accounting categories. Financial fraud may occur due to disorganization within the finance team, as granting access to accounting and cash flow to all team members could enable narcissistic criminals to benefit. Artificial intelligence allows computers to perform various accounting tasks, reducing the accounting staff's role to inputting and validating instructions. The system automatically generates bills and does a trial billing at the conclusion of the term (Bako & Tanko, 2022).

AI technology has the potential to transform management accounting by improving processes and enhancing decision-making. Using this technology has benefits since AI simplifies everyday activities, greatly decreasing the need for manual work in data entry, reconciliation, and reporting. Automating these activities allows accountants to concentrate on more strategic parts of their profession. AI-driven automation reduces human errors common in manual operations. Precise data input and calculations result in more dependable financial records. AI algorithms scrutinize financial data accurately. They offer crucial insights that assist in making strategic decisions. Data-driven recommendations improve overall business performance. (Chowdhury, 2023a).

Blockchain on Accounting

According to (Cazazian, 2022), There are three contexts for this implementation: blockchain's synergy with AI, smart contracts and automation, and AI-driven audit quality. Blockchain offers openness and security through its decentralized and tamper-proof ledger. It guarantees that transactions are permanently stored throughout a network of nodes without the possibility of being altered. Conversely, artificial intelligence excels in data-driven capabilities. Machine learning algorithms process extensive datasets, identify patterns, and generate predictions. The synergy is found in the complementing characteristics of the two elements. The dependability of blockchain improves the reliability of AI-generated insights, while the analytical capability of AI boosts the utility of blockchain data. Smart contracts on a blockchain automatically carry out predetermined actions according to set parameters. They remove the necessity of intermediaries. Smart contracts can manage functions such as loan approvals, payments, and supply chain transactions in financial operations. Efficiency improves by eliminating manual involvement. A supply chain smart contract could initiate payment to a supplier upon the delivery and verification of products. Auditing entails examining financial documents to ensure correctness and adherence to regulations. Artificial intelligence has the potential to completely transform this process. AI algorithms identify anomalies, inconsistencies, or suspicious trends by examining blockchain data. These observations improve the quality of the audit. AI's accuracy in spotting fraudulent transactions and guaranteeing regulatory compliance minimizes the chances of oversight. Overall, combining blockchain and AI shows great potential for improving financial services and audit procedures. It optimizes procedures, improves decision-making, and strengthens confidence in the digital era.

CONCLUSION

The thorough analysis of 64 articles from 2020 to 2024 highlights the major changes happening in the accounting sector, such as the increasing focus on digitalisation, automation technologies, artificial intelligence (AI), and blockchain. Each topic has unique ramifications for accounting processes, as shown by the combination of scholarly contributions. Digitalisation is a significant factor transforming the accounting field, propelled by developments in computer information processing technologies. Digital transformation and the "digitalisation of business" represent a paradigm shift that improves financial accounting operations, rather than just a technology evolution. It simplifies the process of gathering, organising, and summarising data, reducing the workload for accountants and promoting a connected and digitised financial system. The acknowledgement of the benefits of modernising accounting process models reflects an increasing focus on digitisation in the accounting field. Automation technologies and artificial intelligence are becoming important aspects of the changing accounting field. Robotic Process Automation (RPA) is a valuable tool for automating rule-based operations, such as data transfer, invoicing, and payroll. AI-powered accounting automation technology enhances these endeavours by providing fast and precise task automation, decreasing the reliance on a sizable workforce. The relationship between accounting automation and AI adoption highlights the significance of having a well-defined vision and strategy to improve technology adoption. Automated bookkeeping solutions, such as real-time invoicing and journal entry processes, offer practical benefits like decreased workloads and enhanced organisational growth. Blockchain technology revolutionises accounting by synergizing with AI, smart contracts, and automation. The decentralised and tamper-proof ledger of blockchain ensures transparency and security, which improves the trustworthiness of AI-generated insights. Smart contracts on blockchain platforms automate certain processes, removing intermediaries and improving efficiency in financial transactions. Furthermore, AI-powered audit quality utilises AI's analytical capabilities to examine blockchain data, enhancing audit precision and minimising the risk of errors. The integration of blockchain with AI has great potential for enhancing financial services, streamlining audit processes, and fostering trust in the digital age. The interaction of digitalisation, automation, AI, and blockchain represents a significant change in the accounting business. Organisations are moving towards greater efficiency, less manual effort, better decision-making, and superior commercial success as they adjust to technology changes. The academic literature reviewed in this study confirms the importance for accounting professionals and stakeholders to adapt and navigate the technological advancements in order to maintain the relevance and strength of the accounting field in the digital era.

ACKNOWLEDGEMENT

The authors are thankful to Universitas Klabat for their financial support, which helped in completing this research. Universitas Klabat's financing was essential in covering publication fees and enabling the dissemination of our findings. We value their dedication to promoting academic research and supporting scholarly pursuits.

References

Abdullah, S. N., Aziz, A. A., & Saifulazri, B. Q. (2023). The impact of information technology on accounting systems towards SME performance in Malaysia. *Journal of Social Economics Research*, *10*(2), 69–80. https://doi.org/10.18488/35.v10i2.3406

Alghafiqi, B., & Munajat, E. (2022). Impact of Artificial Intelligence Technology on Accounting Profession. *Berkala Akuntansi Dan Keuangan Indonesia*, *7*(2), 140–159. https://doi.org/10.20473/baki.v7i2.27934

Al-Okaily, M., Al-Majali, D., Al-Okaily, A., & Majali, T. (2023). Blockchain technology and its applications in digital accounting systems: insights from Jordanian context. *Journal of Financial Reporting and Accounting*. https://doi.org/10.1108/JFRA-05-2023-0277

Astuti, W. A., & Augustine, Y. (2022). The Effect of Digital Technology and Agility On Company Performance with Management Accounting System as Mediation. *International Journal of Research and Applied Technology*, *2*(1), 11–29. https://doi.org/10.34010/injuratech.v2i1.6552

Azman, N. A., Mohamed, A., & Jamil, A. M. (2021). Artificial Intelligence in Automated Bookkeeping: A Value-added Function for Small and Medium Enterprises. *JOIV : International Journal on Informatics Visualization*, *5*(3), 224. https://doi.org/10.30630/joiv.5.3.669

Bako, P. M., & Tanko, U. M. (2022). The Place of Artificial Intelligence in Accounting Field and the Future of Accounting Profession. *Journal of Artificial Intelligence, Machine Learning and Neural Network*, *25*. https://doi.org/10.55529/jaimlnn.25.15.21

Bellucci, M., Cesa Bianchi, D., & Manetti, G. (2022). Blockchain in accounting practice and research: systematic literature review. *Meditari Accountancy Research*, *30*(7), 121–146. https://doi.org/10.1108/MEDAR-10-2021-1477

Cazazian, R. (2022). Blockchain Technology Adoption in Artificial Intelligence-based Digital Financial Services, Accounting Information Systems, and Audit Quality Control. *Review of Contemporary Philosophy*, *21*(0), 55. https://doi.org/10.22381/RCP2120224

Chanthinok, K., & Sangboon, K. (2021). The Development of Digital Accounting System on Cloud Computing. *Journal of Computer Science*, *17*(10). https://doi.org/10.3844/jcssp.2021.889.904

Chen, Y., & Long, X. (2023). The Empowerment and Subversion of Information Technology to Accounting Information System. In *Proceedings of the 2022 3rd International Conference on E-commerce and Internet Technology (ECIT 2022)* (pp. 384–392). Atlantis Press International BV. https://doi.org/10.2991/978-94-6463-005-3_38

Chowdhury, E. K. (2023a). Integration of Artificial Intelligence Technology in Management Accounting Information System: An Empirical Study. In *Novel Financial Applications of Machine Learning and …* (pp. 35–46). Springer. https://doi.org/10.1007/978-3-031-18552-6_3

Chowdhury, E. K. (2023b). Integration of Artificial Intelligence Technology in Management Accounting Information System: An Empirical Study. In *International Series in Operations Research and Management Science* (Vol. 336, pp. 35–46). https://doi.org/10.1007/978-3-031-18552-6_3

Coman, D. M., Ionescu, C. A., Duică, A., Coman, M. D., Uzlau, M. C., Stanescu, S. G., & State, V. (2022). Digitization of Accounting: The Premise of the Paradigm Shift of Role of the Professional Accountant. *Applied Sciences*, *12*(7), 3359. https://doi.org/10.3390/app12073359

Dai, Q. (2022a). Designing an Accounting Information Management System Using Big Data and Cloud Technology. *Scientific Programming*, *2022*, 1–11. https://doi.org/10.1155/2022/7931328

Dai, Q. (2022b). Designing an Accounting Information Management System Using Big Data and Cloud Technology. *Scientific Programming*, *2022*, 1–11. https://doi.org/10.1155/2022/7931328

Dai, X. (2021a). Optimization of Accounting Management Information System Under the Background of Block Chain Technology. In *Application of Intelligent Systems in Multi-modal …* (pp. 559–566). Springer. https://doi.org/10.1007/978-3-030-74811-1_81

Dai, X. (2021b). Optimization of Accounting Management Information System Under the Background of Block Chain Technology. In *Advances in Intelligent Systems and Computing* (Vol. 1384, pp. 559–566). https://doi.org/10.1007/978-3-030-74811-1_81

Fredo, A. R., Motta, M. E. V. da, Camargo, M. E., & Priesnitz, M. C. (2023). Digital transformation: the digitization of accounting. *REVISTA DE GESTAO E SECRETARIADO-GESEC*, *14*(1).

Gotthardt, M., Koivulaakso, D., Paksoy, O., Saramo, C., Martikainen, M., & Lehner, O. (2020). Current state and challenges in the implementation of smart robotic process automation in accounting and auditing. *ACRN Journal of Finance and Risk Perspectives*, *9*(1). https://doi.org/10.35944/JOFRP.2020.9.1.007

Hardika, A. L. (2020). Increasing Managerial Performance through The Use of Information Technology and Decentralization Characteristics of the Management Accounting System. *International Journal of Psychosocial Rehabilitation*, *24*(2), 2752–2756. https://doi.org/10.37200/IJPR/V24I2/PR200572

Hesam, D. (2017). Impact of Information Technology in Evplution of Traditional Accounting to Modern Accounting. *International Journal of Management and Applied Science*, *3*(5). https://doi.org/http://iraj.doionline.org/dx/IJMAS-IRAJ-DOIONLINE-8169

Huisache, S. (2020, July 7). *Accounting Software Statistics and Trends*. Trust Radius. https://solutions.trustradius.com/vendor-blog/accounting-software-statistics-trends/

Ionescu, L. (2022). Big Data Algorithms and Artificial Intelligence Technologies in Cloud-based Accounting Information Systems. *Analysis and Metaphysics*, *21*(0), 42. https://doi.org/10.22381/am2120223

Karmańska, A. (2023). Coding Skills in the Automation of Accounting Processes. *Folia Oeconomica Stetinensia*, *23*(1), 107–123. https://doi.org/10.2478/foli-2023-0006

Khoruzhy, L. I., Katkov, Y. N., & Romanova, A. A. (2023). Cloud Technologies in the Accounting Information System of Interorganizational Cooperation. In *Innovation, Technology and Knowledge Management* (pp. 25–37). https://doi.org/10.1007/978-3-031-13913-0_4

Koley, S., & Kumar, A. (2021). Comparative Analysis of Computerized Accounting System and Manual Accounting System in Ranchi at Jharkhand. *Shodh Samagam (A MULTI DISCIPLINARY AND MULTILINGUAL RESEARCH JOURNAL)*, *04*(04).

Kovalenko, S. N., Kalutskaya, N. A., Bolvachev, A. I., Prodanova, N. A., Sotnikova, L. V., & Shevchenko, O. P. (2021). Artificial intelligence in the accounting profession. *LAPLAGE EM REVISTA*, *7*(Extra-B), 378–383. https://doi.org/10.24115/S2446-622020217Extra-B938p.378-383

Li, B. (2023). Research on the Application of Computer Intelligent ERP Technology in Corporate Financial Accounting Fund Audit System. *2023 IEEE International Conference on Sensors, Electronics and Computer Engineering (ICSECE)*, 954–958. https://doi.org/10.1109/ICSECE58870.2023.10263556

Li, S. (2022). Construction of Accounting Technology Block Analysis System Under the Background of Big Data Cloud Computing. *2022 International Conference on Applied Artificial Intelligence and Computing (ICAAIC)*, 767–770. https://doi.org/10.1109/ICAAIC53929.2022.9792809

Lim, F. P. C. (2013). Impact of Information Technology on Accounting Systems. *Asia-Pacific Journal of Multimedia Services Convergent with Art, Humanities, and Sociology*, *3*(2), 93–106. https://doi.org/10.14257/AJMSCAHS.2013.12.02

Liu, B., & Jia, Y. (2024). Design of Chain Store Accounting Information System Based on Blockchain Technology. *International Journal of Business Management and Economics and Trade*, *5*(1). https://doi.org/10.38007/IJBMET.2024.050101

Luo, Y. (2022). Design of Intelligent Accounting Education System Based on Data Processing Technology. In *International Conference on E-Learning, E-Education …* (pp. 391–402). Springer. https://doi.org/10.1007/978-3-031-21161-4_30

Lv, R. (2021). Computer Information Processing Technology in Financial Accounting Information System. In *… Conference on Applications and Techniques in Cyber …* (pp. 200–205). Springer. https://doi.org/10.1007/978-3-030-79200-8_28

Meiryani, M., Cornelia, C., Ulinnuha, H., Angelus, M., Priandhana, F., Kresnandita, S. P., Lidiyawati, L., & Steelyana, E. (2021). The Effect of Information Technology

Development on The Quality of Accounting Information Systems. *2021 3rd International Conference on E-Business and E-Commerce Engineering*, 53–57. https://doi.org/10.1145/3510249.3510259

Mingming, T. (2020a). Research on the Application of Blockchain Technology in Accounting Information System. *2020 International Conference on Virtual Reality and Intelligent Systems (ICVRIS)*, 330–334. https://doi.org/10.1109/ICVRIS51417.2020.00084

Mingming, T. (2020b). Research on the Application of Blockchain Technology in Accounting Information System. *2020 International Conference on Virtual Reality and Intelligent Systems (ICVRIS)*, 330–334. https://doi.org/10.1109/ICVRIS51417.2020.00084

Nasution, M. I. (2022). Digital Accounting Application in Oil Palm Plantation in Indonesia. *International Journal of Social Science Research and Review*, *5*(6). https://doi.org/10.47814/ijssrr.v5i6.320

Ndubuisin, A. N., Chidoziem, A. M.-F., & Chinyere, O. J. (2017). Comparative Analysis of Computerized Accounting System and Manual Accounting System of Quoted Microfinance Banks (MFBs) in Nigeria. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, *7*(2). https://doi.org/10.6007/IJARAFMS/v7-i2/2787

Nguyen, N. M. (2023). Blockchain technology and sustainable performance: moderated-mediating model with management accounting system and digital transformation. *Environment, Development and Sustainability*. https://doi.org/10.1007/s10668-023-04189-7

Nikolova, B. (2023). The Accounting Education: Is a Paradigm Shift Needed? *Journal of Higher Education Theory and Practice*, *23*(5). https://doi.org/10.33423/jhetp.v23i5.5932

Noviani, N., & Muda, I. (2022). The Evolution of Accounting Software: Review of Blockchain Technology in Audit. *Proceedings of the 1st International Conference on Social, Science, and Technology, ICSST 2021, 25 November 2021, Tangerang, Indonesia*. https://doi.org/10.4108/eai.25-11-2021.2318839

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., … Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. In *The BMJ* (Vol. 372). https://doi.org/10.1136/bmj.n71

Qatawneh, A. (2022a). The influence of data mining on accounting information system performance: A mediating role of information technology infrastructure. *Journal of Governance and Regulation*, *11*(1), 141–151. https://doi.org/10.22495/jgrv11i1art13

Qatawneh, A. (2022b). The influence of data mining on accounting information system performance: A mediating role of information technology infrastructure. *Journal of Governance and Regulation*, *11*(1), 141–151. https://doi.org/10.22495/jgrv11i1art13

Sapkota, S. P. (2022). Computerized Accounting Information System in Nepalese SMEs. *Journal of Balkumari College*, *11*(1), 33–38. https://doi.org/10.3126/jbkc.v11i1.53021

Sari, R. P., Nugraha, Y. P., & ... (2021). How information technology and financial accounting system impact information quality of governmental financial statement. *Proceedings UPY …*. https://proceeding.upincase.upy.ac.id/index.php/Proceedings/article/view/45

Shevchenko, E., Efremova, A., Oshovskaya, N., Voloshin, A., & Finogentova, A. (2021). Improving Methods of Accounting for Working Time in the Context of Digitalization. *SHS Web of Conferences*, *93*, 03011. https://doi.org/10.1051/shsconf/20219303011

Suarta, I. M., Suwintana, I. K., & Sudiadnyani, I. G. A. O. (2022). Technology and Information System Expertise Demand for Accounting Professionals: A Requirements Analysis of Job Advertisements. *… Science and Technology …*. https://doi.org/10.2991/assehr.k.220301.046

Sumarna, A. D. (2020). Reshaping Future Skills of Professional Accountants. *Ultimaccounting : Jurnal Ilmu Akuntansi*, *12*(2), 134–151. https://doi.org/10.31937/akuntansi.v12i2.1516

Sun, Y. (2022a). Design of Information System for Accounting File Management Based on Computer Technology. In *The International Conference on Cyber Security …* (pp. 19–27). Springer. https://doi.org/10.1007/978-3-030-96908-0_3

Sun, Y. (2022b). Design of Information System for Accounting File Management Based on Computer Technology. In *Lecture Notes on Data Engineering and Communications Technologies* (Vol. 123, pp. 19–27). https://doi.org/10.1007/978-3-030-96908-0_3

Taufik, W. M. (2022). The Effect of Using Information Technology, User Involvement, and Support from Top Management on Performance of Accounting Information System. *Jurnal Akuntansi, Perpajakan Dan Auditing*, *1*(1), 31–50. https://doi.org/10.21009/japa.0101.03

Teru, S. P., Idoko, I. F., & Bello, L. (2019). The Impact of E - Accounting in Modern Businesses. *International Journal of Accounting & Finance Review*, *4*(2), 1–4. https://doi.org/10.46281/ijafr.v4i2.355

Tilahun, M. (2019). Determinants of Computerized Accounting Information System Adoption by Hospital in Addis Ababa, Ethiopia. *Strategic Journal of Business & Change Management*, *6*(1). https://doi.org/10.61426/sjbcm.v6i1.1030

Vărzaru, A. A., Bocean, C. G., Mangra, M. G., & Simion, D. (2022). Assessing Users' Behavior on the Adoption of Digital Technologies in Management and Accounting Information Systems. *Electronics*, *11*(21), 3613. https://doi.org/10.3390/electronics11213613

Wang, A., & Chu, Z. (2023). Development of Enterprise Management Accounting Information System Based on Big Data Technology. In *2022 International Conference on Bigdata …* (pp. 1561–1571). atlantis-press.com. https://doi.org/10.2991/978-94-6463-030-5_157

Wang, H., Zhang, Y., Chen, X., & Wu, J. (2024). Construction of Enterprise Asset Management Accounting System Based on Blockchain Technology. *Applied Mathematics and Nonlinear Sciences*, *9*(1). https://doi.org/10.2478/amns-2024-0231

Wang, L. N. (2011). Impact of information technology on accounting. *Advanced Materials Research*, *219–220*. https://doi.org/10.4028/www.scientific.net/AMR.219-220.1224

Ware, E. O. (2015). Computerised Accounting System an Effective Means of Keeping Accounting Records in Ghanaian Banks: a Case Study of the Ga Rural Bank. *International Journal of Research in Business Studies and Management*, *2*(11).

Xie, D. (2021). Management Accounting Innovation System Based on Artificial Intelligence Technology. *2021 3rd International Conference on Artificial Intelligence and Advanced Manufacture*, 812–816. https://doi.org/10.1145/3495018.3495282

Yang, X. (2020). On the Credibility Guarantee Mechanism of Accounting Information System. *Proceedings of the 2020 the 3rd International Conference on Computers in Management and Business*, 53–58. https://doi.org/10.1145/3383845.3383885

Yin, F. (2023a). Design and Implementation of Financial Accounting System Based on Cloud Computing Technology. *2023 Asia-Europe Conference on Electronics, Data Processing and Informatics (ACEDPI)*, 58–62. https://doi.org/10.1109/ACEDPI58926.2023.00018

Yin, F. (2023b). Design and Implementation of Financial Accounting System Based on Cloud Computing Technology. *2023 Asia-Europe Conference on Electronics, Data Processing and Informatics (ACEDPI)*, 58–62. https://doi.org/10.1109/ACEDPI58926.2023.00018

Yoshikuni, A. C., Dwivedi, R., Dultra-de-Lima, R. G., Parisi, C., & Oyadomari, J. C. T. (2023). Role of Emerging Technologies in Accounting Information Systems for Achieving Strategic Flexibility through Decision-Making Performance: An Exploratory Study Based on North American and South American Firms. *Global Journal of Flexible Systems Management*, *24*(2), 199–218. https://doi.org/10.1007/s40171-022-00334-9

Zheng, R. (2022). Construction Research of Accounting Information System Based on Data Visualization Technology. *Proceedings of the International Conference on Information Economy, Data Modeling and Cloud Computing, ICIDC 2022, 17-19 June 2022, Qingdao, China*. https://doi.org/10.4108/eai.17-6-2022.2322869

Zhong, R., Zhang, Q., & Zhao, Y. (2022). Research on Enterprise Financial Accounting Information Security Model Based on Big Data. *Wireless Communications and Mobile Computing*, *2022*. https://doi.org/10.1155/2022/7929846