

## **Transformation of Management Accounting in the Digital Era: Current Challenges and Opportunities**

**Yudi Zatnika\*, Iin Safariah**

Universitas Sali Al-Aitaam


### **Abstrak**

This research aims to investigate the impact of digital transformation on management accounting practices and its implications for organizations. The study seeks to understand how management accountants adapt to new technologies, the role of digital tools in decision-making, and the challenges faced by organizations during the digital transition. A literature review approach is employed to gather and synthesize existing research on digital transformation in management accounting. Peer-reviewed academic papers, industry reports, and relevant literature are analyzed to explore the challenges, opportunities, and best practices associated with the integration of digital technologies. The research reveals that digital transformation significantly enhances efficiency and accuracy in management accounting processes. Real-time reporting and data visualization empower organizations to make timely and informed decisions. The adoption of AI and data analytics enables predictive analysis, contributing to proactive decision-making. However, challenges such as skill adaptation, data management, and cybersecurity must be addressed to fully capitalize on the potential of digitalization. Organizations must foster a culture of continuous learning and embrace technology to remain competitive and successful in the digital era.

Keywords: digital transformation, management accounting, digital technologies, decision-making, efficiency

Copyright (c) 2023 Yudi Zatnika

---

 Corresponding author :

Email Address : [yudi.zatnika88@gmail.com](mailto:yudi.zatnika88@gmail.com)

### **INTRODUCTION**

In the digital age, the world is experiencing a profound shift that extends to every aspect of life, including business and finance. Among the many areas that have been significantly impacted by this transformation, management accounting stands at the forefront. With the advent of cutting-edge technologies and the rapid digitalization of business processes, the practice of management accounting has been compelled to adapt, evolve, and embrace new possibilities. This article delves into the realm of management accounting, exploring the challenges it faces in this era of digitalization while also shedding light on the plethora of opportunities that arise from this momentous change (Peters & Šoljaková, 2020).

Management accounting, often referred to as managerial accounting, is an essential discipline that plays a pivotal role in assisting organizations to make strategic decisions, control their operations, and optimize their performance. It is the process of identifying, measuring, analyzing, interpreting, and communicating financial information to management for decision-making purposes. Traditionally, management accountants have relied on manual data collection, cumbersome spreadsheets, and complex calculations to fulfill their

responsibilities. However, the digital revolution has irreversibly altered this landscape. The past two decades have witnessed the emergence of revolutionary technologies such as artificial intelligence, machine learning, big data analytics, cloud computing, and the Internet of Things (IoT) (Wolf et al., 2020). These technologies have empowered businesses with unprecedented amounts of data and the tools to analyze it in real-time, revolutionizing the way management accounting operates.

The urgency of studying the transformation of management accounting in the digital era arises from its profound impact on businesses and organizations worldwide. Embracing digital technologies offers a competitive advantage, driving survival, sustainability, and agility in a rapidly changing business landscape. With data-driven decision-making, organizations can optimize resources and respond swiftly to market changes. Failure to adapt may lead to obsolescence, while embracing digital tools can streamline processes and enhance efficiency. Furthermore, managing digital risks, upskilling the workforce, and enabling remote work are crucial considerations for long-term success. As the digital transformation continues to shape the profession, understanding and embracing it becomes an imperative rather than an option.

Moreover, the urgency lies in the potential for disruptive innovation. The digital era introduces new paradigms such as blockchain, advanced analytics, and robotic process automation, which can revolutionize management accounting practices. Organizations that harness these innovations can gain unprecedented insights, drive cost reductions, and optimize supply chain operations. However, delaying the study and adoption of these technologies could result in missed opportunities and a loss of competitive edge (Ostaev et al., 2020). Additionally, the urgency of this study extends to fostering a culture of continuous improvement and adaptability within organizations. Management accountants must be proactive in their pursuit of knowledge and skills to stay abreast of the latest digital trends. Ultimately, the digital transformation of management accounting transcends mere efficiency gains; it holds the potential to reshape business models and drive organizational success in an increasingly digitalized world. Therefore, swift action and comprehensive study are essential to seize the myriad of opportunities presented by the digital era and navigate the challenges posed by this transformative shift (Bella et al., 2023).

The purpose of this study is to comprehensively investigate the transformation of management accounting in the digital era and its implications. By identifying the challenges faced by management accountants in adopting digital technologies and exploring the opportunities that arise, the study aims to inform strategies for effective integration. Additionally, the research seeks to assess the impact of digitalization on business performance and recommend best practices to leverage digital tools successfully. Moreover, the study endeavors to understand how organizations adapt to this transformation and the evolving role of human expertise in decision-making. By contributing to the existing body of knowledge, informing policy and practice, and encouraging continuous learning, this research aspires to equip professionals, organizations, and policymakers with valuable insights to thrive in the digitally-driven business landscape.

## METHODOLOGY

The methodology for this research on the transformation of management accounting in the digital era will be conducted using a literature review approach. This approach involves a comprehensive and systematic review of existing academic papers, books, reports, and relevant literature in the field of management accounting and digitalization (Riduwan, 2018). The literature search will be performed using various databases and search engines, with keywords centered around "digital transformation," "management accounting," "technology adoption," "data analytics," and related terms. The selected literature will be critically evaluated to assess the quality and reliability of the sources. Data from the chosen studies will be extracted, organized, and analyzed thematically to identify challenges, opportunities,

impacts, and best practices related to the digital transformation of management accounting. The findings will be discussed, interpreted, and synthesized to provide valuable insights into the current state of management accounting in the digital era (Sugiyono, 2019). The research aims to contribute to the existing body of knowledge, inform decision-making, and lay the groundwork for future investigations and practical applications in this rapidly evolving domain.

## RESULT AND DISCUSSION

### Management Accounting in the Digital Era

In the digital era, management accounting has undergone significant transformations to adapt to the rapidly changing business landscape. The integration of advanced technologies and data analytics has revolutionized the way organizations collect, process, and analyze financial information, allowing for more informed decision-making and improved performance (Susanto & Meiryani, 2019). One of the key aspects of management accounting in the digital era is the utilization of cloud-based accounting software and tools. These technologies enable real-time data access and collaboration, eliminating the need for manual data entry and providing accurate and up-to-date financial information. With cloud-based systems, businesses can streamline their accounting processes, reduce errors, and enhance efficiency (Vale et al., 2022).

Data analytics plays a pivotal role in the digital age of management accounting. The vast amount of data generated by businesses can be harnessed through advanced analytics techniques, such as machine learning and artificial intelligence. By analyzing historical and real-time data, organizations can gain valuable insights into their financial performance, identify trends, and forecast future outcomes. These insights enable management accountants to make proactive and data-driven decisions, optimizing resource allocation and enhancing overall business performance. Additionally, the rise of the Internet of Things (IoT) has further revolutionized management accounting (Asiaei et al., 2022). IoT devices can collect and transmit financial data from various sources, such as production processes, supply chain activities, and customer interactions. This interconnected network of devices provides a holistic view of the business, allowing management accountants to understand how financial metrics are influenced by operational factors and external variables. Furthermore, the digital era has enabled the development of sophisticated cost allocation models. With the ability to track costs at a granular level, management accountants can allocate expenses more accurately, facilitating better cost management and resource utilization. This enhanced cost visibility allows organizations to identify cost-saving opportunities and optimize their product and service offerings (Burritt et al., 2019).

Another significant impact of the digital era on management accounting is the shift towards data-driven performance measurement. Traditional financial performance metrics are still relevant, but businesses now supplement them with non-financial key performance indicators (KPIs) that provide insights into customer satisfaction, employee engagement, and operational efficiency. These data-driven KPIs enable a more comprehensive assessment of the organization's performance and help align strategies with business objectives (Korhonen et al., 2020).

The digital era has also seen the emergence of predictive analytics in management accounting. With predictive models, management accountants can forecast future financial scenarios based on historical data and market trends. These forecasts enable organizations to anticipate potential challenges, identify growth opportunities, and devise effective strategies to stay competitive in a dynamic business environment. Additionally, the digitalization of financial reporting has transformed how management accountants communicate information to stakeholders. Interactive dashboards and data visualization tools provide a more engaging and understandable representation of financial data, making it easier for decision-makers to grasp complex information quickly (Gunarathne & Lee, 2021). This enhanced communication fosters better collaboration between management accountants and other business functions, facilitating a more cohesive decision-making process. Despite the numerous benefits of management accounting in the digital era, challenges also arise. The increased reliance on technology exposes businesses to cybersecurity risks, emphasizing the need for robust data protection measures. Moreover, as technology evolves rapidly, management accountants must continually update their skills and knowledge to effectively leverage these tools and technologies (Alvarez et al., 2021).

In conclusion, management accounting in the digital era has undergone a significant transformation driven by advancements in technology and data analytics. Cloud-based accounting software, data analytics, IoT, and predictive models have revolutionized how financial information is collected, processed, and analyzed. The digitalization of financial reporting and the integration of data-driven performance metrics have enhanced decision-making processes and collaboration between various business functions (Alsharari, 2019). However, the digital era also presents challenges that require proactive measures to safeguard data and ensure management accountants are equipped with the necessary skills to navigate this evolving landscape successfully. Ultimately, organizations that embrace these digital changes are poised to thrive in the dynamic and competitive business environment of the digital era (Schaltegger et al., 2022).

### **Challenges in the Digital Era**

In the current era of digital transformation, management accounting faces an array of challenges stemming from the integration of advanced digital technologies into its traditional practices. Among these challenges, one of the most significant hurdles lies in the need for management accountants to adapt their skills and knowledge to effectively leverage these new technologies (Alsharari & Al-Shboul, 2019). In the past, management accounting primarily relied on manual data collection, complex spreadsheets, and traditional financial reporting methods. However, with the advent of cutting-edge technologies like data analytics, artificial intelligence, and machine learning, the landscape has undergone a dramatic shift. Management accountants must now undergo a paradigm shift in their approach, embracing technological literacy to remain relevant in this rapidly changing business environment.

The demand for skill adaptation and technological literacy represents a pressing concern for management accountants. The traditional skill set that once sufficed is no longer sufficient in the face of rapid digitalization (Oyewo, 2021). To excel in the digital era, management accountants must acquire expertise in data analysis, learn to interpret complex algorithms, and become proficient in utilizing technology to make well-informed decisions. This transformation requires a proactive approach to

professional development, necessitating continuous training and upskilling. Universities and professional bodies must adapt their curricula and certifications to incorporate relevant digital skills, ensuring that future management accountants are equipped to handle the challenges of the digital age (Balstad & Berg, 2020).

Another pressing challenge arises from the exponential increase in data availability. The digital era has unleashed a flood of data, encompassing vast amounts of sensitive financial information. This abundance of data presents a new set of challenges in terms of data management and security. The confidentiality and protection of financial data are of paramount importance, as any breaches or data leaks could have severe financial and reputational repercussions for organizations (Bhimani, 2020). Management accountants must ensure that data is handled securely, adhering to data protection regulations and industry best practices. To address these challenges effectively, organizations must implement robust cybersecurity measures, including encryption, access controls, and regular security audits. Additionally, fostering a culture of data privacy awareness among employees is crucial to safeguarding sensitive financial information. Furthermore, the digital transformation poses the challenge of striking the right balance between the use of advanced technologies and human decision-making (Ascani et al., 2021). While data analytics and forecasting tools provide sophisticated insights and predictions, the human element remains indispensable in strategic decision-making. Human intuition, expertise, and context are essential complements to data-driven insights. Management accountants must understand the strengths and limitations of technology and know when to rely on their expertise to interpret complex financial scenarios. The harmonious integration of data-driven insights and human judgment is vital for effective decision-making in the digital age (Varaniūtė et al., 2022).

Amidst these challenges, the digital transformation also presents a myriad of opportunities for management accounting and organizations. Embracing digital technologies can significantly enhance efficiency and accuracy in accounting processes. Automation and digitization reduce the time and effort required for manual data entry and calculations. This newfound efficiency allows management accountants to focus on higher-value tasks, such as financial analysis, strategic planning, and performance evaluation (Vărzaru et al., 2022). Additionally, digital tools can minimize human errors, ensuring more reliable financial reporting and decision-making. Real-time reporting and decision-making are other significant benefits of the digital transformation. Advanced reporting and dashboarding tools enable organizations to monitor their financial performance in real-time. This timely access to financial data facilitates proactive decision-making, empowering stakeholders to respond swiftly to market changes and identify emerging trends (Almatarneh et al., 2022).

The integration of data analytics and machine learning algorithms enables predictive analysis and forecasting. By analyzing historical data patterns, these technologies can make accurate predictions about future trends and outcomes. This data-driven approach assists management accountants in making more informed financial projections and developing proactive strategies to mitigate risks and capitalize on opportunities (Al-Zaqeba et al., 2022). Cost optimization and resource allocation represent additional advantages of the digital transformation in management accounting. Data analytics can identify cost drivers and inefficiencies, empowering organizations to optimize resource allocation and reduce operational expenses. By pinpointing areas of wasteful spending, management accountants play a

vital role in improving an organization's financial health and long-term sustainability. Moreover, the digital transformation elevates the role of management accountants from mere financial record-keepers to strategic business partners. With access to real-time data and sophisticated analytics, management accountants can provide valuable insights to support strategic decision-making. This shift towards business partnering involves collaborating closely with other departments, such as marketing, operations, and sales, to align financial objectives with overall business objectives (Alvarez et al., 2021; Petera & Šoljaková, 2020).

In conclusion, the integration of digital technologies into management accounting presents both challenges and opportunities for organizations and professionals. Adapting to the digital era requires management accountants to embrace technological literacy, prioritize data management and security, and strike the right balance between technology-driven insights and human expertise. By overcoming these challenges, management accountants can harness the potential of digital technologies to enhance efficiency, improve decision-making, and drive strategic value for organizations in this rapidly changing landscape. Embracing the opportunities afforded by the digital transformation can position management accounting as a pivotal driver of success in the digital era.

### **Opportunities in the Digital Era**

In the midst of the challenges posed by the digital transformation, the digital era presents an abundance of opportunities for management accounting to flourish and evolve. Foremost among these advantages is the enhanced efficiency and accuracy that technology brings to the profession. Through automated data collection, processing, and analysis, management accountants can now streamline their routine tasks, freeing up valuable time and resources to focus on more value-added activities. Embracing digital tools allows management accountants to shift their roles from mere number crunching to strategic partners within the organization. By leveraging technology for routine tasks, management accountants can now devote their energies to activities such as strategic planning, identifying growth opportunities, and providing crucial financial insights to decision-makers (Alsharari, 2019; Wolf et al., 2020). Moreover, the digital era has ushered in the era of real-time reporting and data visualization. Advanced reporting and dashboarding tools enable management accountants to present financial information in a visually compelling manner, making it easier for stakeholders to comprehend complex financial data. The availability of real-time information empowers management with up-to-date insights, enabling timely and informed decision-making. Organizations can respond swiftly to market changes, identify emerging trends, and make proactive adjustments to their strategies. This agility is a significant advantage in the fast-paced business environment, where staying ahead of the competition is crucial (Ostaev et al., 2020).

The integration of artificial intelligence (AI) and machine learning algorithms into management accounting processes represents a game-changer in the profession. These technologies have the capability to analyze vast amounts of historical data patterns, recognize trends, and make informed predictions about future outcomes. By harnessing the power of predictive analysis and forecasting, management accountants can provide valuable insights that drive strategic decision-making (Bella et al., 2023; Schaltegger et al., 2022). With the aid of AI, organizations can anticipate market shifts, identify potential risks, and capitalize on opportunities before they fully manifest.

Furthermore, the digital era brings the advantage of cloud-based accounting systems. By adopting cloud solutions, organizations can enjoy the benefits of remote access and collaboration. This transformative aspect of digitalization promotes flexible work arrangements, allowing management accountants to work from anywhere and collaborate with teams across geographical boundaries (Oyewo, 2021; Susanto & Meiryani, 2019). Cloud-based systems facilitate real-time data sharing and collaboration, making it easier for dispersed teams to work together seamlessly. This newfound connectivity enables organizations to tap into a diverse talent pool, transcending physical constraints and fostering a more inclusive and diverse work environment. In addition to these benefits, digital transformation empowers management accountants with advanced data analytics capabilities. Data analytics tools allow for in-depth exploration and interpretation of financial data, enabling management accountants to uncover valuable insights and patterns that were previously hidden in vast datasets. With data-driven insights, organizations can make well-informed decisions, optimize financial performance, and develop data-backed strategies for growth and expansion (Balstad & Berg, 2020; Vale et al., 2022).

The digital era also offers management accountants the opportunity to become more proactive advisors to the organization. By embracing digital technologies and developing proficiency in data analytics, management accountants can identify areas of improvement, offer recommendations for cost optimization, and contribute to enhancing overall business performance. Rather than being reactive to financial events, management accountants can take on a proactive role in identifying opportunities and anticipating challenges (Asiaei et al., 2022).

Moreover, the integration of digital technologies facilitates seamless collaboration between different departments within an organization. Digital platforms enable data sharing, fostering better communication and coordination among teams. The finance function can work closely with marketing, operations, and sales teams, aligning financial objectives with broader organizational goals. This cross-functional collaboration strengthens organizational cohesion and ensures that financial decisions are aligned with the overall business strategy (Burritt et al., 2019; Korhonen et al., 2020). Additionally, the digital era brings the potential for improved risk management and compliance. Advanced data analytics can help identify potential risks and anomalies in financial data, enabling management accountants to proactively address potential issues. With enhanced data visibility, organizations can implement robust risk management strategies and adhere to regulatory compliance more effectively. The digital transformation also opens up opportunities for cost savings and resource optimization. By automating routine tasks and streamlining processes, organizations can reduce operational costs and allocate resources more efficiently. Digital tools can optimize inventory management, budgeting, and procurement processes, leading to significant cost reductions and improved financial performance (Gunarathne & Lee, 2021).

In conclusion, the digital era presents abundant opportunities for management accounting to flourish and evolve. By embracing digital technologies, management accountants can enhance efficiency, accuracy, and decision-making within the organization. Real-time reporting and data visualization enable timely decision-making, providing a competitive advantage in the dynamic business environment. The integration of AI and data analytics empowers management accountants with predictive insights, while cloud-based systems promote flexibility and inclusivity in

the workforce. With a proactive approach to skill development and embracing the transformative power of technology, management accountants can position themselves as strategic partners within their organizations and drive financial success in the digital era.

## CONCLUSION

In conclusion, the digital transformation of management accounting presents both challenges and opportunities. Embracing new digital technologies requires management accountants to adapt their skills and knowledge. However, these changes offer enhanced efficiency and accuracy in financial tasks, real-time reporting for better decision-making, and the potential for predictive analysis. Cloud-based systems enable remote work and diverse collaboration. With advanced data analytics, management accountants can uncover valuable insights and contribute to optimizing financial performance. Embracing the digital era with a proactive mindset and continuous learning will allow management accounting to thrive and add strategic value to organizations in the rapidly changing business landscape.

Future research in management accounting should focus on exploring the long-term impact of digital transformation on businesses. Investigating how organizations adapt to and sustain the integration of digital technologies will provide valuable insights. Additionally, understanding the evolving role of management accountants in the digital era and identifying the most effective digital tools and practices will be essential for future success. Moreover, research on cybersecurity measures and data privacy in the context of digitalization will help ensure safe and secure financial operations. Simplifying these areas of inquiry will contribute to practical applications and guide organizations in navigating the digital landscape.

## Referensi :

- Al-Zaqeba, M. A. A., Jarah, B. A. F., Ineizeh, N. I., Almatarneh, Z., & Jarrah, M. A. AL. (2022). The effect of management accounting and blockchain technology characteristics on supply chains efficiency. *Uncertain Supply Chain Management*, 10(3), 973-982. <https://doi.org/10.5267/j.uscm.2022.2.016>
- Almatarneh, Z., Jarah, B. A. F., & Jarrah, M. A. AL. (2022). The role of management accounting in the development of supply chain performance in logistics manufacturing companies. *Uncertain Supply Chain Management*, 10(1), 13-18. <https://doi.org/10.5267/j.uscm.2021.10.015>
- Alsharari, N. M. (2019). Management accounting and organizational change: alternative perspectives. *International Journal of Organizational Analysis*, 27(4), 1124-1147. <https://doi.org/10.1108/IJOA-03-2018-1394>
- Alsharari, N. M., & Al-Shboul, M. (2019). Evaluating qualitative research in management accounting using the criteria of "convincingness." *Pacific Accounting Review*, 31(1), 43-62. <https://doi.org/10.1108/PAR-03-2016-0031>
- Alvarez, P., Sensini, L., Bello, C., & Vazquez, M. (2021). Management Accounting Practices and Performance of SMEs in the Hotel Industry: Evidence from an emerging economy Business Economics Laboratory , UC , Buenos Aires , Argentina Department of Management and Innovation Systems ( DISA / MIS ), University of S. *International Journal of ...*, 12(2), 24-35. <https://doi.org/10.30845/ijbss.v12n2p3>
- Ascani, I., Ciccola, R., & Chiucchi, M. S. (2021). A structured literature review about the role of management accountants in sustainability accounting and reporting. *Sustainability (Switzerland)*, 13(4), 1-25. <https://doi.org/10.3390/su13042357>
- Asiaei, K., Bontis, N., Alizadeh, R., & Yaghoubi, M. (2022). Green intellectual capital and



- environmental management accounting: Natural resource orchestration in favor of environmental performance. *Business Strategy and the Environment*, 31(1), 76–93. <https://doi.org/10.1002/bse.2875>
- Balstad, M. T., & Berg, T. (2020). A long-term bibliometric analysis of journals influencing management accounting and control research. *Journal of Management Control*, 30(4), 357–380. <https://doi.org/10.1007/s00187-019-00287-8>
- Bella, S., Apriyanti, N., & Sriwijayanti, H. (2023). Enhancing Financial Management and Accountant Roles: A Study on the Role of Technological Advancements. *SEIKO : Journal of Management & Business*, 6(2), 435–446.
- Bhimani, A. (2020). Digital data and management accounting: why we need to rethink research methods. *Journal of Management Control*, 31(1–2), 9–23. <https://doi.org/10.1007/s00187-020-00295-z>
- Burritt, R. L., Herzig, C., Schaltegger, S., & Viere, T. (2019). Diffusion of environmental management accounting for cleaner production: Evidence from some case studies. *Journal of Cleaner Production*, 224, 479–491. <https://doi.org/10.1016/j.jclepro.2019.03.227>
- Gunarathne, N., & Lee, K. H. (2021). Corporate cleaner production strategy development and environmental management accounting: A contingency theory perspective. *Journal of Cleaner Production*, 308(May), 127402. <https://doi.org/10.1016/j.jclepro.2021.127402>
- Korhonen, T., Selos, E., Laine, T., & Suomala, P. (2020). Exploring the programmability of management accounting work for increasing automation: an interventionist case study. In *Business Law binus* (Vol. 7, Issue 2). [http://repository.radenintan.ac.id/11375/1/PERPUS\\_PUSAT.pdf%0Ahttp://business-law.binus.ac.id/2015/10/08/pariwisata-syariah/%0Ahttps://www.ptonline.com/articles/how-to-get-better-mfi-results%0Ahttps://journal.uir.ac.id/index.php/kiat/article/view/8839](http://repository.radenintan.ac.id/11375/1/PERPUS_PUSAT.pdf%0Ahttp://business-law.binus.ac.id/2015/10/08/pariwisata-syariah/%0Ahttps://www.ptonline.com/articles/how-to-get-better-mfi-results%0Ahttps://journal.uir.ac.id/index.php/kiat/article/view/8839)
- Ostaev, G. Y., Suetin, S. N., Frantsisko, O. Y., & Alexandrova, E. V. (2020). Assessment of the effectiveness of the management of agricultural organizations in management accounting. *Revista Amazonia Investiga*, 9(28), 260–271. <https://doi.org/10.34069/ai/2020.28.04.29>
- Oyewo, B. M. (2021). Outcomes of interaction between organizational characteristics and management accounting practice on corporate sustainability: the global management accounting principles (GMAP) approach. *Journal of Sustainable Finance and Investment*, 11(4), 351–385. <https://doi.org/10.1080/20430795.2020.1738141>
- Petera, P., & Šoljaková, L. (2020). Use of strategic management accounting techniques by companies in the Czech Republic. *Economic Research-Ekonomska Istrazivanja*, 33(1), 46–67. <https://doi.org/10.1080/1331677X.2019.1697719>
- Riduwan. (2018). *Menyusun Metodologi Penelitian*.
- Schaltegger, S., Christ, K. L., Wenzig, J., & Burritt, R. L. (2022). Corporate sustainability management accounting and multi-level links for sustainability – A systematic review. *International Journal of Management Reviews*, 24(4), 480–500. <https://doi.org/10.1111/ijmr.12288>
- Sugiyono. (2019). *Metodologi Penelitian*.
- Susanto, A., & Meiryani, M. (2019). Antecedents of environmental management accounting and environmental performance: Evidence from Indonesian small and medium enterprises. *International Journal of Energy Economics and Policy*, 9(6), 401–407. <https://doi.org/10.32479/ijeep.8366>
- Vale, J., Amaral, J., Abrantes, L., Leal, C., & Silva, R. (2022). Management Accounting and Control in Higher Education Institutions: A Systematic Literature Review. *Administrative Sciences*, 12(1). <https://doi.org/10.3390/admsci12010014>
- Varaniūtė, V., Žičkutė, I., & Žandaravičiūtė, A. (2022). The Changing Role of Management Accounting in Product Development: Directions to Digitalization, Sustainability, and Circularity. *Sustainability (Switzerland)*, 14(8). <https://doi.org/10.3390/su14084740>

- Vărzaru, A. A., Bocean, C. G., Mangra, M. G., & Mangra, G. I. (2022). Assessing the Effects of Innovative Management Accounting Tools on Performance and Sustainability. *Sustainability (Switzerland)*, 14(9). <https://doi.org/10.3390/su14095585>
- Wolf, T., Kuttner, M., Feldbauer-Durstmüller, B., & Mitter, C. (2020). What we know about management accountants' changing identities and roles – a systematic literature review. *Journal of Accounting and Organizational Change*, 16(3), 311–347. <https://doi.org/10.1108/JAOC-02-2019-0025>