

**Original Article****A SYSTEMATIC LITERATURE REVIEW ON THE DEVELOPMENT TRENDS
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Indonesia*Corresponding Author, E-mail : fauziah@iaingorontalo.ac.id**ABSTRACT**

Background. The emergence of digital tools, such as data analytics and automation, enhances decision-making, aligns with sustainability, and supports strategic goals, especially in the context of achieving Sustainable Development Goals (SDGs)

Research Purpose. The study aims to provide a comprehensive analysis of the developmental trends in management accounting by systematically reviewing recent literature. This review focuses on identifying key trends, existing gaps, and emerging themes to establish a framework for future research in this evolving field

ResearchMethod. Using a systematic literature review (SLR) approach, the research includes journal articles, conference proceedings, and reports published over the past decade. Articles were selected based on relevance to management accounting and sorted by topic, findings, and theoretical contributions.

Findings. Key trends in management accounting include the integration of digital technology (e.g., AI, blockchain) for efficiency, accuracy, and improved decision-making, alongside a strong focus on environmental sustainability. The study also found significant interest in sustainability management practices, particularly regarding their role in meeting SDGs and enhancing corporate performance

Conclusion. Management accounting is increasingly shaped by digitalization and sustainability imperatives. Technologies like AI and blockchain are reshaping data accuracy and efficiency, while sustainability practices encourage responsible business practices.

Keywords: Accounting information systems, Digitalization and technology, Efficiency and accuracy, Environmental accounting, Management accounting, Sustainability

BACKGROUND

Research in the field of management accounting continues to evolve in response to changes in the business environment and technological advancements. Today, management accounting is no longer confined to cost management and budgeting practices; it has transitioned to a strategic role in corporate decision-making and performance evaluation [1–3] with the advancement of digital technologies such as data analytics and automation, organizations now have increasingly sophisticated tools to support their strategic objectives, making the role of management accountants more dynamic and essential to achieving business success [4].

Recent literature shows a growing interest in the impact of digital technology and data analytics on management accounting. Studies have discussed how these technologies

can enhance decision-making processes, improve the accuracy of financial reporting, and support the integration of broader business strategies. Additionally, sustainability issues have also become a focus in management accounting research, especially in relation to achieving the Sustainable Development Goals (SDGs), which emphasize the importance of accounting practices that align with long-term objectives and stakeholder interests [5–7].

Despite advancements in management accounting research, there remains a need for comprehensive analysis of trends and research gaps in this field. The dynamic business environment and rapid technological developments require management accounting research to continuously adapt and explore new paradigms. Some studies indicate that while specific aspects of management accounting, such as performance measurement and digital technology integration, have been widely discussed, there is still a lack of holistic understanding regarding the direction of this field's development [1,2].

To address this issue, a systematic literature review is needed to provide a structured analysis of existing knowledge and synthesize findings to identify key trends, gaps, and emerging themes in management accounting research. By analyzing literature published over the past decade, this study aims to provide a comprehensive overview of how management accounting is evolving and highlight areas that require further exploration to guide the direction of future research [3,4,7].

Previous research has attempted to map developments in management accounting, focusing particularly on how companies integrate sustainability strategies and digital technology into their accounting practices. For instance, Pramono et al. (2023) emphasized the importance of Sustainability Management Accounting (SMA) in Indonesia's manufacturing sector, particularly in achieving the Sustainable Development Goals (SDGs). They found that the implementation of SMA, along with Environmental Management Systems (EMS), plays a key role in enhancing organizational performance, especially by helping companies monitor, measure, and manage the environmental impact of their business activities. This research demonstrates that SMA can aid companies not only in minimizing environmental impact but also in improving operational efficiency and enhancing corporate image in the eyes of consumers [2].

In addition, [1] highlighted the role of environmental accounting strategies and waste management in achieving sustainable performance in micro, small, and medium enterprises (MSMEs). They found that effective environmental accounting strategies can enhance MSMEs' sustainability performance, particularly through improved waste management. Their findings also suggest that management accounting can serve as a tool to identify non-value-added activities, helping MSMEs reduce environmental costs and increase resource use efficiency.

Furthermore, [6] their research on Material Flow Cost Accounting (MFCA) demonstrates that the MFCA approach can contribute to achieving several SDG targets by enhancing management decision-making. MFCA provides a deeper understanding of material flows and associated costs, enabling companies to identify areas for waste reduction and resource efficiency. They also emphasize that MFCA can be an essential step in integrating sustainability into management practices, allowing companies to develop more environmentally friendly and cost-effective business strategies.

Although various studies have provided insights into the importance of integrating technology and sustainability in management accounting, there is a gap in the holistic understanding of how these elements interrelate and shape the development of management accounting. Therefore, this study aims to bridge that gap by conducting a

systematic review of literature from the past decade to offer a comprehensive overview of how these trends are evolving and to identify areas that require further research.

Various studies indicate several critical areas in management accounting that require further exploration. [7] highlighting the relationship between sustainability performance and earnings management, specifically how companies may manipulate their financial performance to reflect compliance with sustainability practices. This study raises questions about the integrity and transparency of corporate reporting practices, especially amid increasing stakeholder pressure to prioritize sustainability.

On the other hand, [3] conducted a bibliometric analysis on research trends related to climate change and accounting. They found that topics such as environmental management accounting and carbon accounting are gaining increased attention in the accounting literature. However, they also noted a lack of systematic efforts to consolidate existing knowledge within the context of climate change and accounting. This indicates the need for a holistic approach to assess how accounting can contribute to addressing global environmental issues.

Additionally, the study by [5] revealed the importance of education and training in raising accounting students' awareness and understanding of corporate social and environmental responsibility. However, they noted that research on the impact of this training on the future attitudes and professional behaviors of accountants remains limited, indicating a gap in the literature regarding the role of education in shaping sustainable accountants.

From these various findings, it can be concluded that although many studies have examined specific aspects of management accounting, there remains a gap in research related to the integration of digital technology, sustainability, and business strategy. This gap includes a lack of comprehensive understanding of how management accounting strategies and tools can effectively support the achievement of the SDGs. Therefore, this study aims to address this gap through an in-depth analysis of literature from the past decade.

This research is different from the previous research where this research was conducted a systematic review of trends in management accounting research over the past decade. By synthesizing findings from various studies, it seeks to identify key trends, gaps, and emerging themes, with a particular focus on the integration of technology, strategic approaches, and sustainability practices in management accounting. The novelty of this research lies in its holistic approach to examining how different aspects of management accounting interrelate and shape the development of the field. By conducting a comprehensive analysis, this study aims to provide valuable insights and recommendations for future research, particularly in bridging the identified gaps and promoting advancements in the field of management accounting

RESEARCH METHOD

This study employs a systematic literature review (SLR) method to analyze research trends in management accounting over the past decade. The analysis draws primarily from literature in leading journals related to management accounting. Additionally, relevant documents such as conference proceedings and academic papers are included to enrich the research data. The scope of this research includes publications in both English and Indonesian, sourced from leading journals, conference proceedings, and academic papers over the past decade. The selection criteria for literature are based on the

contribution of the research to management accounting, focusing on publications within the last 10 years. Data collection involves selecting literature from academic databases such as Scopus and Google Scholar. The study includes journal articles, conference proceedings, and research reports that meet the criteria in both English and Indonesian and are relevant to management accounting. After gathering a substantial number of documents, articles were filtered based on titles, abstracts, and keywords to ensure alignment with the study's main topic, resulting in 81 articles. Articles that met the criteria were then analyzed further to identify trends, findings, and gaps in management accounting research.

The data collection process in this study follows systematic stages to extract information from each piece of literature. Filtered articles are analyzed by identifying frequently studied research issues, innovations in management accounting research, commonly used theories, and key findings in each article. Articles are classified based on topic, research method, main findings, and practical implications. This analysis provides a comprehensive understanding of recent developments in management accounting and underexplored research areas. The statistical analysis method used in this study is content analysis, which is applied to evaluate the main findings of each literature source and how these findings contribute to the understanding of management accounting trends. To ensure the validity and reliability of the results, an in-depth review is conducted, and articles selected for final analysis must meet strict quality criteria, including topic relevance and clear research methodology.

FINDINGS

Research in management accounting often focuses on various aspects of financial and operational management within organizations. Key issues frequently studied include the role of management accounting information systems in supporting decision-making and managerial effectiveness, the impact of management accounting practices on cost control and company profitability, and the challenges in implementing environmental management accounting to achieve business sustainability. Additionally, other commonly explored topics are the effects of digitalization, such as the application of artificial intelligence (AI) and blockchain technology, on the efficiency and accuracy of accounting practices. Financial management of SMEs, risk management, and the implementation of the Balanced Scorecard have also become major areas of focus, particularly in the context of changes in the business environment due to the COVID-19 pandemic and economic globalization.

Novelty in management accounting research often arises from the exploration of digital technologies and new strategic approaches within accounting practices. Many recent studies examine the application of artificial intelligence (AI) in management accounting, including the ethical challenges associated with its use. Additionally, recent research has focused on the role of management accounting in supporting sustainability, such as how Total Quality Management (TQM) and environmental accounting can enhance corporate performance. Further novelty has emerged in the context of SMEs, particularly in how they utilize management accounting strategies to survive and grow during crises like the COVID-19 pandemic. This research highlights the adaptation of management accounting to modern business needs, underscoring the importance of accounting information in strategic decision-making.

Management accounting research employs various theories to understand and analyze issues faced by organizations. Management Accounting Theory and Accounting

Information Systems Theory are among the most frequently utilized, especially in contexts involving decision-making, cost control, and managerial effectiveness. Additionally, Sustainability Theory and Green Accounting Theory are commonly applied in studies addressing environmental accounting and business sustainability. Contingency Theory is often used to evaluate how factors such as organizational structure, technology, and the business environment influence the implementation of management accounting systems. On the other hand, studies examining the application of AI in management accounting frequently draw on Professional Ethics Theory and the Information Systems Success Model to address ethical challenges and enhance understanding of digital technology implementation.

Previous research in management accounting has shown that the implementation of management accounting information systems (MAIS) positively influences decision-making effectiveness and managerial performance across various sectors, including SMEs and manufacturing firms. Other findings indicate that the adoption of sound management accounting strategies, such as Total Quality Management (TQM) and the Balanced Scorecard (BSC), significantly contributes to enhancing company profitability and competitiveness. Studies on the application of technologies like AI and blockchain in management accounting reveal improvements in efficiency, accuracy, and transparency, although ethical challenges remain that need to be addressed. Furthermore, research on environmental accounting underscores that environmental management accounting plays a crucial role in supporting business sustainability, particularly through cost management and the reduction of environmental impacts.

1. Trends in Management Accounting Research

Digitalization and Technology: A dominant trend in current management accounting research is the growing interest in the application of digital technologies such as Artificial Intelligence (AI), blockchain, and management accounting information systems. As technology continues to advance rapidly, digitalization is recognized as playing a crucial role in enhancing efficiency, accuracy, and the quality of decision-making within management accounting practices. [8,9] Research indicates that the adoption of these technologies facilitates more accurate data analysis and reporting, which in turn supports improved decision-making processes within organizations. Digitalization also enables businesses and organizations, including micro, small, and medium enterprises (SMEs), to be more responsive to changes in a dynamic business environment, thereby strengthening their competitiveness in an increasingly complex market [10]. Research in various countries, including Vietnam, indicates that the adoption of more complex management accounting systems is typically observed in larger companies due to their greater availability of resources [10].

Environmental Accounting and Sustainability: In recent years, the integration of environmental accounting practices and sustainability concepts has gained increasing attention due to the growing awareness of Corporate Environmental Responsibility (CER), which is essential for sustainable development [11]. Research shows that Corporate Environmental Responsibility (CER) is closely linked to achieving sustainability goals, particularly in the context of ecological balance and resource management. Additionally, various methodologies, such as Green Accounting and Environmental Management Accounting (EMA), assist companies in assessing environmental performance and its impact on financial outcomes [12,13]. By implementing Total Quality Management (TQM) with a focus on sustainability, businesses can respond to environmental issues more effectively and responsibly [14].

Accounting Information Systems and Decision-Making: Accounting Information Systems play a crucial role in supporting better decision-making across various sectors, including SMEs, by providing relevant and accurate financial information for planning, control, and performance evaluation [15,16]. Accounting Information Systems functions not only as a recording tool but also as a strategic information source that enables cost control and enhances managerial effectiveness. In a digital context, Accounting Information Systems integrated with e-commerce platforms assists entrepreneurs in making better decisions regarding marketing and inventory management [17]. Research shows that management support and users' technical skills significantly influence the effectiveness of AIS in decision-making [18].

Balanced Scorecard (BSC) and Corporate Performance: Recent trends indicate an increased use of the Balanced Scorecard (BSC) as a strategic tool for comprehensively measuring and managing corporate performance. Developed by Kaplan and Norton in the 1990s, the BSC combines financial and non-financial performance indicators across four key perspectives: financial, customer, internal processes, and learning and growth [19,20]. This multidimensional approach enables organizations to align their operations with strategic objectives, leading to improved overall performance [21]. In the healthcare sector, for instance, the BSC is used to address data complexity and the need for comprehensive evaluation [22,23]. Effective implementation of the BSC has been shown to enhance communication of strategic goals and understanding of performance drivers [24,25].

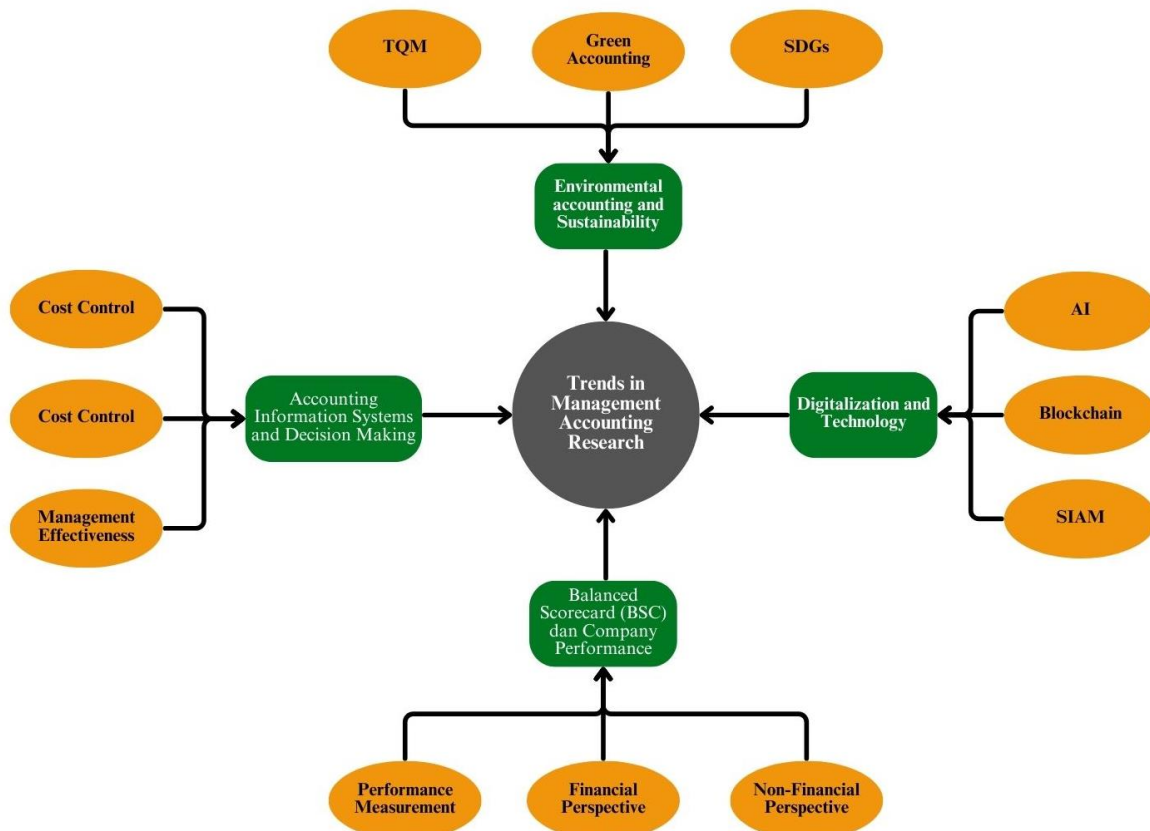


Figure 1. Trends Management Accounting Research

2. Findings in Management Accounting Research

Impact of Technology on Effectiveness and Efficiency: The application of information technology (IT), such as AI and blockchain, plays a crucial role in enhancing effectiveness, efficiency, and accuracy in management accounting. IT enables process

automation, improved data management, and enhanced internal communication, all of which contribute to optimized decision-making and rapid response to market changes [26,27] Research indicates that the implementation of integrated information systems across various sectors enhances managerial performance by helping organizations achieve their goals and utilize resources optimally [28,29]

The Role of Management Accounting in Sustainability: Management accounting plays a crucial role in supporting organizational sustainability by providing information that aids strategic decision-making, taking into account social and environmental impacts. By integrating economic goals with social responsibility, management accounting serves as a tool for achieving sustainability [30,31] An effective management accounting information system assists managers in planning, controlling, and evaluating performance, as well as identifying areas for improvement [32,33]. The implementation of environmental management accounting enables companies to manage environmental risks and improve environmental performance, thereby supporting long-term sustainability goals [31,34].

SIAM as a Decision-Making Support: Management Accounting Information Systems (SIAM) play a crucial role in enhancing the quality of decision-making by providing relevant and accurate data for management. By integrating various system components, SIAM enables companies to control costs, evaluate performance, and implement more effective business strategies [28,35] In the context of SMEs, the implementation of SIAM has been shown to improve operational efficiency and competitive ability by helping managers make decisions that are more responsive to market changes and customer needs. SIAM also enhances transparency and accountability in resource management, supporting the achievement of the organization's strategic objectives [36].

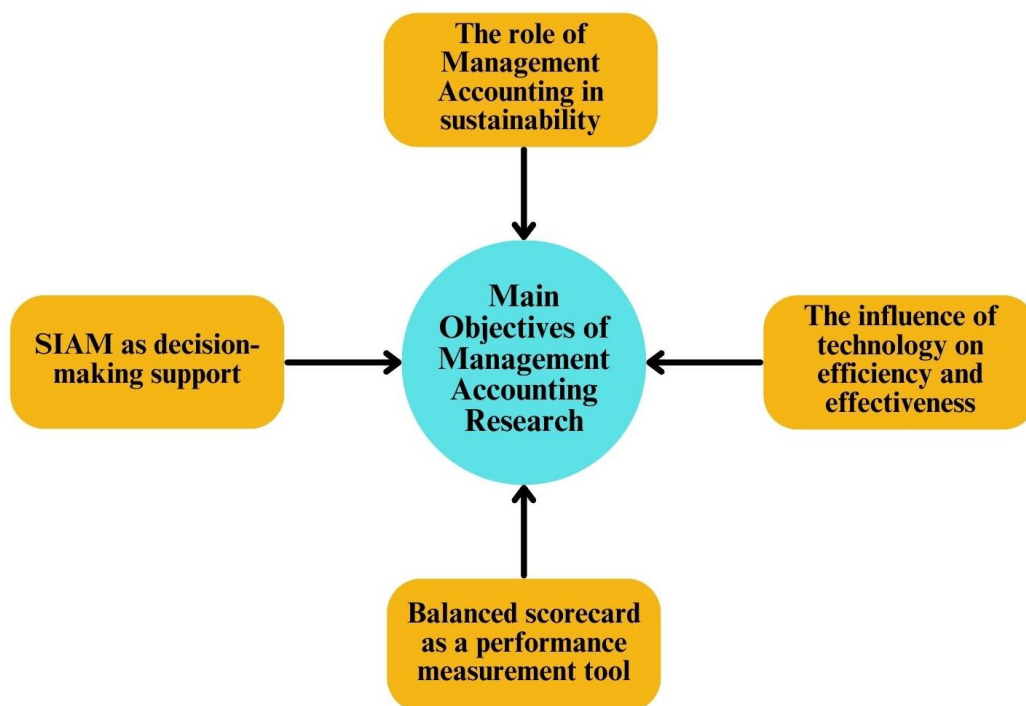


Figure 2. Main Objectives of Management Accounting Research

Balanced Scorecard as a Performance Measurement Tool: The Balanced Scorecard (BSC), introduced by Kaplan and Norton in the early 1990s, has proven to be an effective tool for measuring and enhancing organizational performance holistically by considering four key perspectives: financial, customer, internal processes, and learning and growth [37]. This approach enables companies to link strategic objectives with desired outcomes, not only based on historical data but also for future planning ("Research on the optimization measures of balanced scorecard in enterprise management," 2023). In the healthcare sector, for instance, the BSC is used to evaluate departmental performance through a multidimensional approach that supports enhanced competitiveness and efficiency [38,39]. Additionally, the BSC serves as a communication tool that helps align the organization's vision and strategy with employee actions, proving effective across various sectors, including education [40,41].

3. Research Gaps in Management Accounting

Ethical Challenges in Technology Application: Although digital technologies such as AI and blockchain have proven to enhance effectiveness in management accounting, their application also presents significant ethical challenges. A primary concern is data privacy and security, especially regarding the collection of personal data without consent, as seen in the use of RFID technology [42]. In the healthcare sector, for instance, the application of AI raises concerns about algorithmic bias that could impact patient diagnosis outcomes, highlighting the importance of ethical guidelines to protect patient rights [43,44]. Another challenge includes the social impact of new technologies, such as deepfake, on public trust in democracy [45]. An inclusive approach is needed to ensure that technology provides equitable benefits without creating new injustices [46,47].

Implementation of Management Accounting Across Sectors: The implementation of management accounting across various sectors has shown a significant impact on decision-making and organizational performance by providing relevant and accurate information for planning, control, and evaluation [48]. In the industrial sector, management accounting systems help monitor expenses and revenues more efficiently, supporting optimal resource allocation. In the service sector, research shows that management accounting information systems enhance data processing effectiveness, thereby strengthening company competitiveness [49]. In the public sector, accrual-based accounting has been adopted to enhance transparency and accountability in government financial management [50]. Environmental management accounting is also being applied across various sectors to support sustainability by providing information that aids in managing environmental impacts [31].

Impact of Accounting Strategies on Sustainability: Accounting strategies play a vital role in supporting long-term sustainability, especially among SMEs and large corporations. Sustainable accounting helps manage finances while also achieving broader social and environmental goals, such as those outlined in the Sustainable Development Goals (SDGs) [51]. The application of GRI principles, for example, encourages SMEs to enhance transparency and accountability, building stakeholder trust through clear sustainability indicators [52]. Additionally, research shows that companies integrating sustainable accounting practices demonstrate better social and environmental performance [53]. The implementation of environmental accounting is also key to sustainability strategies, helping companies identify and manage environmental impacts within the context of climate change [54].

The Use of the Balanced Scorecard in Diverse Contexts: The Balanced Scorecard (BSC) has proven to be a flexible performance measurement tool across various sectors,

from business to education, healthcare, and the public sector. In the education sector, for example, the BSC is used to enhance operational and academic performance, helping higher education institutions identify areas for improvement and focus efforts on achieving strategic goals [55]. In the public sector, the implementation of the Balanced Scorecard (BSC) in government institutions, such as the Regional Revenue Agency of Mojokerto, enhances transparency and accountability while aligning organizational goals with expected performance outcomes [56]. The healthcare sector also leverages the Balanced Scorecard (BSC) to comprehensively evaluate hospital performance from multiple perspectives, contributing to improved patient care services [57,58]. In the business sector, such as at Matahari Department Store, the Balanced Scorecard (BSC) has proven to enhance managerial performance by providing relevant information for strategic decision-making [59].



Figure 3. Research Gaps in Management Accounting

DISCUSSIONS

Overall, trends in management accounting research show an increased focus on the application of technology, sustainability, and the use of accounting information systems in decision-making. Research findings confirm the critical role of management accounting in enhancing organizational effectiveness, efficiency, and sustainability. However, gaps remain in ethical aspects of technology application, implementation across sectors, the impact of accounting strategies on long-term sustainability, and the application of measurement tools such as the Balanced Scorecard in various business contexts.

Identifying these trends, findings, and gaps can guide the direction of future research in management accounting.

Recent Developments in Management Accounting

In recent years, technological advancements have been a primary driver of change in management accounting. Recent studies highlight the importance of adopting technologies such as Artificial Intelligence (AI), blockchain, and management accounting information systems (SIAM) in improving accuracy, efficiency, and decision-making. AI, for instance, has proven effective in processing large volumes of accounting data quickly, enabling managers to make informed decisions based on up-to-date information. Blockchain has also transformed transaction recording, enhancing transparency and reducing the risk of errors in financial reporting. Additionally, SIAM has become a crucial tool for companies to optimize performance management and cost control. The implementation of these technologies impacts not only internal efficiency but also companies' ability to compete in an ever-changing global market. However, studies indicate that the adoption of these technologies still faces ethical challenges, particularly regarding data privacy and security, necessitating further research to develop effective and widely acceptable solutions.

Furthermore, research in management accounting has shifted its focus toward sustainability issues and corporate social responsibility. Environmental accounting and sustainability practices have become primary concerns, especially in relation to the Sustainable Development Goals (SDGs). Recent studies explore how management accounting practices, such as Total Quality Management (TQM) and Green Accounting, can help companies identify and mitigate the environmental impact of their operational activities. Research also indicates that companies implementing sustainability practices tend to perform better in the long term. However, there remains a research gap in measuring the long-term impact of sustainable accounting practices on firm value and the achievement of SDGs. With growing attention to environmental and social issues, further in-depth research is needed to develop a clear framework on how management accounting strategies can be integrated with sustainability practices.

On the other hand, there are underexplored areas in management accounting research, particularly in specific business sectors such as healthcare, education, and the public sector. Most research has focused on the manufacturing and SME sectors, while studies on the application of management accounting in other sectors remain limited. Furthermore, although the Balanced Scorecard (BSC) is widely recognized as an effective performance measurement tool, research on BSC implementation across different types and sizes of organizations, including startups and nonprofit organizations, is scarce. Studies on how small enterprises and nonprofit organizations can adapt performance measurement tools like the BSC to enhance their efficiency and effectiveness are much needed. Additionally, the challenges of applying management accounting in companies operating in highly uncertain environments, such as agribusiness and tourism, require further investigation to identify the most suitable accounting methods under such conditions. In-depth studies in these areas would provide valuable insights to strengthen the role of management accounting across diverse business contexts.

CONCLUSION

This study concludes that trends in management accounting are increasingly influenced by the adoption of digital technologies, the implementation of sustainability

practices, and the use of more integrated accounting information systems to support strategic decision-making. The literature review indicates that technologies such as artificial intelligence (AI) and blockchain play a crucial role in enhancing accuracy and operational efficiency. Additionally, the growing focus on sustainability issues encourages companies to integrate environmental accounting into business practices to achieve the Sustainable Development Goals (SDGs). The primary novelty of this research lies in its systematic approach to highlighting the relationship between technology, sustainability, and accounting strategies within the context of modern management. By reviewing recent literature, this study provides a holistic overview of the new dynamics facing management accounting, particularly regarding the expanding role of digital technology and sustainable accounting across various business sectors.

The urgency of this research lies in the critical need for a deep understanding of the impact of digital technology and sustainability on management accounting practices, especially amid rapidly changing business environments. With ethical challenges in the application of new technologies, such as privacy and transparency concerns, this study emphasizes the importance of strong ethical standards to maintain trust in data management and accounting information systems. Recommendations for future research include further exploration of management accounting applications in under-researched sectors, such as healthcare and education, as well as the adaptation of sustainability strategies in various business contexts. Additionally, further studies should focus on how performance measurement tools like the Balanced Scorecard can be tailored to meet the needs of small and nonprofit organizations, thereby providing a more comprehensive guide for the advancement of management accounting.

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