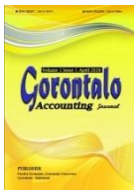

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Ethics in AI-Based Sustainability Accounting to Support SDGs: An ADO Model Approach

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Abstract. *This article analyzes the literature on artificial intelligence (AI) ethics in sustainability accounting and its contribution to the Sustainable Development Goals (SDGs). The study employs a Systematic Literature Review (SLR) approach based on the Antecedents, Decisions, and Outcomes (ADO) framework, which has rarely been applied to this topic. Data were obtained from the Scopus database, consisting of 57 articles published between 2020 and 2025. The findings indicate that AI has the potential to support sustainable development through effective risk management and the implementation of green innovation. Green innovation acts as a mediating variable between the application of AI in sustainability accounting and the achievement of the SDGs. In addition, industry competitiveness and environmental uncertainty serve as moderating factors influencing the effectiveness of AI implementation. Overall, the implementation of AI in sustainability accounting can enhance organizational reputation, strengthen stakeholder loyalty, and create competitive advantage.*

Abstrak. Artikel ini menganalisis literatur mengenai etika kecerdasan buatan (AI) dalam akuntansi keberlanjutan serta kontribusinya terhadap Sustainable Development Goals (SDGs). Studi ini menggunakan pendekatan Systematic Literature Review (SLR) berbasis kerangka Antecedents, Decisions, and Outcomes (ADO) yang masih jarang diterapkan pada topik tersebut. Data diperoleh dari basis data Scopus dengan total 57 artikel yang dipublikasikan selama periode 2020–2025. Hasil penelitian menunjukkan bahwa AI berpotensi mendukung pencapaian pembangunan berkelanjutan melalui pengelolaan risiko dan penerapan inovasi hijau. Inovasi hijau berperan sebagai variabel mediasi antara penerapan AI dalam akuntansi keberlanjutan dan pencapaian SDGs. Selain itu, daya saing industri dan ketidakpastian lingkungan menjadi faktor moderasi yang memengaruhi efektivitas implementasi AI. Secara keseluruhan, implementasi AI dalam akuntansi keberlanjutan dapat meningkatkan reputasi organisasi,

memperkuat loyalitas pemangku kepentingan, dan menciptakan keunggulan kompetitif.

Keywords:
AI Ethics; Sustainability Accounting; ADO Model

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Introduction

Artificial intelligence (AI) has become one of the most influential technologies in the digital era and is increasingly transforming organizational activities, including accounting and sustainability reporting practices. The rapid development of AI enables organizations to process large volumes of data more efficiently, accurately, and quickly to support strategic decision-making. In the context of sustainable development, AI is also considered capable of supporting the achievement of the Sustainable Development Goals (SDGs), which are part of the United Nations 2030 Agenda. Over the next five to ten years, AI is predicted to influence public life across various sectors, including healthcare, education, environmental protection, and economic development, both directly and indirectly (Periche & Pinto, 2024). AI can help address social challenges such as improving healthcare services, promoting gender equality, reducing poverty and inequality, and protecting the environment (Periche & Pinto, 2024).

In the field of accounting, AI provides significant benefits by improving operational efficiency through the automation of routine tasks, reducing human error, and accelerating data analysis processes (ICAEW, 2018; Pandey et al., 2021; Daud et al., 2024). AI also offers strong predictive capabilities and high accuracy in processing Environmental, Social, and Governance (ESG) information, thereby supporting sustainability accounting practices. Sustainability accounting itself has become an important mechanism for organizations to demonstrate accountability and transparency regarding the social and environmental impacts of their operations (Nain et al., 2024). In addition, sustainability accounting is closely related to sustainability reporting, corporate social responsibility (CSR), and other forms of non-financial reporting that are increasingly demanded by stakeholders (Vysochan et al., 2021; Erin & Olojede, 2024).

Despite the benefits offered by AI, its implementation in sustainability accounting also raises various ethical concerns. The effectiveness and accuracy of AI systems depend heavily on the quality of data and learning methods used, which may lead to bias, unfairness, and discriminatory decisions (Binns, 2018). Furthermore, the increasing use of AI in sensitive areas such as financial reporting and ESG disclosure creates challenges related to privacy, transparency, accountability, and data security (Schweitze, 2024; Tiron-Tudor & Deliu, 2022). According to Floridi et al. (2018), the implementation of AI should not only focus on efficiency and technological advancement but should also consider ethical principles to ensure responsible and fair decision-making processes. The unethical use of AI in sustainability accounting may lead to inaccurate reporting, reduce stakeholder trust, and potentially damage organizational reputation. Therefore, organizations need continuous monitoring mechanisms and collaboration among accountants, regulators, and AI developers to ensure ethical AI implementation (Ala-Luopa et al., 2024; Roselli et al., 2019).

The integration of AI into sustainability accounting is also closely related to the achievement of the SDGs. AI can support the development of transparent and accountable institutions (SDG 16), strengthen innovation and infrastructure (SDG

9), improve productivity and economic growth (SDG 8), and encourage multi-stakeholder collaboration (SDG 17) (Peng et al., 2023). Moreover, AI-driven technologies can help organizations improve carbon accounting systems, monitor environmental impacts, and increase the efficiency of sustainability reporting processes (Alqahtani, 2023). However, without proper ethical governance, the use of AI may create new social and economic inequalities, particularly between developed and developing countries, due to unequal access to technological resources (Si, 2022). Therefore, ethical AI implementation is essential to ensure that technological advancement remains aligned with sustainability principles and global development goals.

Several previous studies have discussed AI ethics, sustainability accounting, ESG reporting, and SDGs separately. However, most prior studies primarily focus on technical AI implementation, ethical challenges in accounting, or sustainability reporting practices independently. Limited studies have systematically integrated AI ethics, sustainability accounting, and SDGs within a comprehensive analytical framework. In particular, the Antecedents, Decisions, and Outcomes (ADO) framework has rarely been applied to examine the relationship between AI ethics in sustainability accounting and SDGs achievement. Therefore, a comprehensive literature review is necessary to identify the antecedents influencing ethical AI implementation, organizational decisions related to AI adoption, and the resulting outcomes for sustainability accounting and SDGs achievement.

This study aims to systematically analyze the literature on AI ethics in sustainability accounting and its contribution to SDGs achievement using the ADO framework. Specifically, this study explores the antecedents, decisions, and outcomes related to ethical AI implementation in sustainability accounting, as well as the theories used, geographical distribution, and publication trends of prior studies. This study contributes theoretically by integrating AI ethics, sustainability accounting, and SDGs within a single analytical framework. Methodologically, this study contributes through the application of the ADO framework in a systematic literature review (SLR), which remains limited in this research area. Practically, the findings are expected to provide insights for organizations, regulators, and policymakers regarding responsible and ethical AI implementation to support sustainable development goals.

Research Method

This study used the Systematic Literature Review (SLR) method with the PRISMA approach to collect research data. According to Aggarwal et al., (2024), The PRISMA technique is a systematic approach to carefully screen and include relevant studies from various databases. The PRISMA framework process involves four stages: identification, screening, eligibility, and inclusion.

The first stage is the identification stage for database searches. The identification stage was conducted from June 2025 to August 2025. During this stage, literature documents relevant to the topic of Ethical AI in Sustainability Accounting and the SDGs were identified in the Scopus database. The identification process was carried out by selecting research articles, literature reviews, and conceptual articles published between 2020 and 2025. Furthermore, for language aspects, only English-language articles were selected. The next stage of the identification process was by entering several keywords: "AI Ethics and Sustainability Accounting," "AI Ethics and the SDGs," "Sustainability Accounting and the SDGs," "AI and Sustainability Accounting," or "AI and SDGs." After the search process based on the inclusion criteria was carried out, a total of 692 articles were obtained.

The second stage is the screening stage to evaluate research articles, literature reviews, and conceptual articles relevant to the topic of Ethical AI in Sustainability Accounting and the SDGs. This stage was carried out by ensuring that both the abstract and title were relevant to the research topic. The screening phase resulted in 79 articles, while 613 articles were not relevant to the research topic.

The third stage was the feasibility stage, which assessed the quality of the articles' content. At this stage, the 79 articles were analyzed to determine whether their content contained discussions related to AI/AI Ethics/Sustainability Accounting/SDGs, or a combination of these keywords. The feasibility analysis process found that 9 articles were not suitable, leaving 70 articles.

The final stage was the inclusion stage, which ensured that the articles analyzed truly discussed the relationship between AI Ethics, Sustainability Accounting, and the SDGs. This meant that only articles with high-quality content and strong relevance to the research topic met the inclusion criteria. This inclusion stage reduced the number of articles from 70 to 57.

Result And Discussion

Based on 57 selected articles, a systematic analysis was conducted by classifying the research based on the theory used, country of origin of the author, year of publication, and content.

Theories Used

The literature examining the topics of AI ethics, sustainability accounting, and the SDGs utilizes several theories, as shown in the following table. The data in the table 2 shows that the most frequently used theory is stakeholder followed by legitimacy and RBV.

Table 2. The Theories Used

Theory	References
Upper Echelons Theory	(Cosma et al., 2022)
Actor Network Theory (ANT)	(Saraiva et al., 2024)
Agency Theory	(Ahmed, 2023; de Villiers et al., 2025; Ligorio et al., 2025; Casciello et al., 2025; Nguyen & Duong, 2025)
Institutional Isomorphism Theory	(Stefanescu, 2022)
Meta-governance Theory	(Lauwo et al., 2022)
Impression Management Theory	(Ferrero-Ferrero et al., 2024)
Institutional Theory	(Guermazi & Gharbi, 2024)
Legitimacy Theory	(Erin & Olojede, 2024; Hamad et al., 2023; Zampone & Guidi, 2024; Ferrero-Ferrero et al., 2024; Rizzato et al., 2024; Rezaee et al., 2023; de Villiers et al., 2025; del Río et al., 2024; Owusu & Ofori-Owusu, 2024; Zampone & Guidi, 2024; Jankalová & Jankal, 2024; Nguyen & Duong, 2025; Utami, 2015)
Economic Theory	(Gueddari et al., 2024)

Theory	References
Normative Stakeholder Theory	(Christ et al., 2024)
Institutional Theory	(Erin & Olojede, 2024; de Villiers et al., 2025; Di Vaio et al., 2024; Jankalová & Jankal, 2024); Utami, 2015)
Stakeholder Theory	(Erin & Olojede, 2024; Erin & Bamigboye, 2022; Zampone & Guidi, 2024; Ahmed, 2023; Owusu & Ofori-Owusu, 2024; Mohamed Riyath & Inun Jariya, 2024; Ngu & Amran, 2024; Di Vaio et al., 2024; Erin & Olojede, 2024); Sultana et al., 2024; Ligorio et al., 2025; Bose et al., 2024; Jankalová & Jankal, 2024; Yu et al., 2025)
Signalling Theory	(Rezaee et al., 2023; Nguyen & Duong, 2025)
Resource-Based View (RBV)	(Zampone & Guidi, 2024; Mohamed Riyath & Inun Jariya, 2024; Ngu & Amran, 2024; Di Vaio et al., 2024; Nguyen & Duong, 2025; Yu et al., 2025; Mustafa et al., 2025)
Resource Dependence Theory	(Zampone & Guidi, 2024; Jankalová & Jankal, 2024)

Source: Authors (2025)

Author Countries

The literature examining the topics of AI ethics, sustainability accounting, and the SDGs shows that the majority of data is from global countries (29 articles); Europe (7 articles); Australia (4 articles); Africa (3 articles); Italy (2 articles); and Malaysia (2 articles). Two articles did not specify the country of origin, and only one article included Nigeria, Tanzania, Saudi Arabia, Sri Lanka, Thailand, Portugal, Vietnam, and China as the object or sample of research on AI ethics in sustainability accounting and the SDGs as shown in table 3.

Table 3. Countries of the authors

Country	**Number of Articles**
Nigeria	1
Tanzania	1
Arab Saudi	1
Sri Lanka	1
Portugal	1
Thailand	1
Vietnam	1
China	1
Italia	2
Malaysia	2
Tidak disebutkan	2
Afrika	3
Australia	4
Eropa	7
Global	29
Total	**57**

Source: Authors (2025)

Publication Year

Based on articles relevant to this topic, data was obtained regarding the number of articles published on the topic of AI ethics in sustainability accounting and the SDGs each year from 2020 to 2025. The detailed data is as shown in table 4.

Table 4. Year of Publication

Year	Number of Articles
2020	2
2021	2
2022	8
2023	5
2024	24
2025	16

Source: Authors (2025)

The table 4 shows that the number of publications shows an increasing trend, with 2024 being the year with the highest number of articles published on the topic of AI ethics in sustainability accounting and the SDGs. 2025 also shows an increasing trend compared to 2024 because the data collection period was only August 2025, so there is still a possibility of additional articles being published in 2025.

AI dan Sustainability Accounting

Organizational ethical values, regulatory compliance, and pro-sustainability corporate culture act as drivers of ethical decisions on AI use. For example, companies that prioritize transparency will choose AI systems that can be audited and explained to stakeholders (Guidotti et al., 2019). The ethical challenges of AI use according to Periche & Pinto, (2024) are the risks that can arise if AI is not developed and implemented with human rights, justice, privacy, and its broad impact on society in mind. The ethical dimension of AI development and implementation, especially in the context of sustainable development. The concept of "algorithmocracy" suggests that algorithms can regulate human behaviour with the potential for large-scale bias. In addition, the unequal distribution of AI resources between high-income countries and the Global South is feared to hinder the achievement of the SDGs equally across the globe. The rapid expansion of AI has outpaced the development of legal and regulatory frameworks designed to govern it (Si, 2022). Daud et al., (2024) and Dell et al., (2024) explained that the integration of AI in accounting has raised various ethical issues, especially data privacy, transparency, data security, and accountability. The use of AI raises issues regarding security, reliability, and privacy (Si, 2022; Podile et al., 2024; Olatoye et al., 2024; and Owolabi et al., 2024).

In relation to environmental sustainability, technology companies are required to use tools to track and predict carbon footprints. This is so that companies can assess whether the benefits of the AI model are commensurate with its carbon footprint and environmental impact. Furthermore, to support accountability and transparency, the government should establish sustainable AI taskforces. Meanwhile, companies and public institutions are required to provide carbon emission reports as a basis for improving the AI system (Si, 2022). According to Alqahtani, (2023), the use of AI has significant potential to improve the accuracy, speed, and efficiency of carbon emissions prediction in carbon accounting. AI tools such as adaptive network-based fuzzy inference systems (ANFIS) and long short-term

memory (LSTM) are proven to significantly predict annual carbon emissions. However, existing AI applications are more general for accounting and have not been specifically developed for carbon accounting. In addition, the application of AI in carbon accounting also has constraints related to insufficient data quality and availability and the complexity of measuring emission sources consisting of three scopes (scope 1, 2, and 3).

The use of AI also has an impact on the Company's sustainability report. The use of AI has an impact on each stage of reporting for aspects of efficiency and assessment. 1). In terms of information generated by company management, AI can help automate the execution of routine tasks, analysis large amounts of data, and improve the efficiency of decision making (efficiency aspect). AI also has the potential to integrate financial and non-financial information to improve the perceived reliability of sustainability data (assessment). 2). With regard to reporting, the use of XBRL can improve standardization and transparency in reporting (efficiency). In addition, managers can use AI to create an initial draft of the report and then edit the draft (assessment). 3). Regarding the use of reports, investors can use big data to analysis narrative information and gain a competitive advantage. However, employees and customers do not have the resources to invest in AI, leading to the perception that investors dominate this aspect of sustainability assessment (de Villiers et al., 2023).

Sustainability Accounting and SDGs

Researchers in the field of accounting conduct research on accountability and transparency as a form of sustainable practice (Cortese & Andrew, 2020). The increasing demand for sustainable practices in entities (Welbeck et al., 2017) makes sustainability accounting an interesting topic in both business and academic fields (Owusu & Ofori-Owusu, 2024; (Hahn & Kühnen, 2013). Sustainability accounting, over time, sustainability accounting can become a means of accountability for the social and environmental impacts arising from an entity's operations. SA is also linked to corporate social responsibility (CSR) reporting and non-financial reporting (Vysochan et al., 2021).

Non-financial reporting provides information on economic, environmental, social, and governance performance. Sustainability reporting is a form of non-financial reporting (Erin & Olojede, 2024). One way to provide SDG information is through non-financial reporting. According to stakeholder theory, management uses SDG disclosure as a tool to provide information to various stakeholders and also as a way to meet the diverse needs of stakeholders.

Ethical AI in Sustainability Accounting and SDGs

In sustainability accounting, it is necessary to pay attention to the ethical aspects of using AI to help companies achieve the SDGs. Because unethical use of AI can create public distrust and damage the company's reputation, which is counterproductive to the SDGs. The impact of using AI in sustainability accounting on achieving the SDGs, including: 1). SDG 4 (Quality Education), AI requires accountants to continuously improve digital and ethical skills through lifelong learning; 2). SDG 8 (Decent Work and Economic Growth), AI allows accountants to focus more on value-added work due to the automation of routine tasks.; 3). SDG 9 (Innovation and Infrastructure), where AI Integration strengthens smart and responsive accounting information infrastructure; 4). SDG 16 (Peaceful and Inclusive Institutions), where the transparency of AI systems can increase public trust in financial statements; and SDG 17 (Partnerships), where AI adoption encourages collaboration between the technology sector, regulation, and the accounting profession (Peng et al., 2023). To achieve the SDGs with the help of AI, a principles-based approach is not enough; a human-centric approach and a human rights

framework are required. The success of AI systems depends on the interaction between three components: algorithms, data, and people (Astobiza et al., 2021).

Several case study results show the relevance of using AI in sustainability accounting that impacts the achievement of SGDs. First. World Kinect uses IoT & 5G sensors to track truck emissions in real-time, replacing manual spreadsheets that are prone to human error. AI aids granular analysis to support carbon reduction strategies. The company's study supports the achievement of SDG 13 (Climate Action), SDG 9 (Industry, Innovation), and SDG 12 (Responsible Consumption). Second, Airbus used AI algorithms to design a 45% lighter aircraft "bionic partition" saving up to 465 tons of CO_2 per aircraft per year. Airbus' innovation supports SDG 9 (Industry, Innovation) and SDG 13 (Climate Action). Third, Unilever reported a 50% reduction in GHG emissions thanks to predictive analytics AI (saving 100,000 tons of CO_2/year). Unilever's activities demonstrate AI-based efficient design that directly supports carbon emission reduction strategies that support SDG 13 (Climate Action). Fourth, Microsoft managed to reduce water consumption by 75% through AI monitoring. Microsoft's activities show that the use of AI can save water usage by 75% (SDG 6-Clean Water) and improve resource use efficiency (SDG 12- Responsible Consumption & Production). Fifth, Salesforce has relied on AI to automate carbon emissions data in its fiscal 2020 SEC 10 K report, thereby improving reliability and efficiency in the disclosure process, which demonstrates support for SDG 16. This suggests that AI-based reporting automation improves corporate governance. Vinuesa et al., (2020) recommend that AI applications used to support the achievement of the SDGs must adhere to ethical principles and existing guidelines.

Anteseden

Management must ensure that the AI tools used meet transparency, fairness, and sustainability standards. Furthermore, careful use of AI in sustainability accounting, including ESG, is crucial to prevent the risk of biased data that could lead to incorrect conclusions. Therefore, human oversight is necessary to ensure that AI models align with corporate values and stakeholder commitments (Khaddam & Alzghoul, 2025). Furthermore, sustainability reports produced by entities can influence stakeholder perceptions. Therefore, if reports are generated using AI, human review for grammar, tone, and writing style is required (de Villiers et al., 2023). Yet, the negative impact of greenwashing on sustainability can be mitigated by leveraging AI and machine learning (Moodaley & Telukdarie, 2023). Eager et al., (2024) recognizes that accountants contribute to a more sustainable world. For professional accountants, AI has the potential to provide consulting services at a much faster pace.

AI provides easy-to-use and reliable applications that facilitate public access to financial services to increase financial inclusion. Increased financial inclusion can result in high GDP growth and debt reduction, which supports the achievement of the SDGs. The related SDG achievements are: SDG 1. All people have equal rights to financial services; SDG 2. all people have equal access to financial services; SDG 5. gender equality in accessing financial services; SDG 8 increasing access to financial services for all; SDG 9. small-scale should be integrated into affordable financial services; and SDG 10 that financial inclusion reduces inequality (Fazal et al., 2025). Thanyawatpornkul, (2024) recommends infrastructure investment to bridge the digital divide so that AI-driven innovations can reach all levels of society. Develop regulations, standards, and guidelines for the ethical and responsible use of AI (Ghelani & Kian Hua, 2022).

Decision

Companies must align their strategies with sustainability principles and the SDGs. Alignment requires strong commitment and support from top management, effective communication and collaboration among various stakeholders, and the development of clear performance metrics and targets. Companies are expected to invest in workforce development by providing them with the necessary skills, knowledge, and expertise. Collaboration and partnerships with various stakeholders. It is essential to identify collaboration opportunities, share best practices, and co-create innovative solutions. Companies should have guidelines on the ethics and principles of responsible innovation. Companies can implement Agile and Lean methodologies that encourage adaptability, efficiency, and iterative progress. Based on the explanation above, AI can contribute to achieving sustainable development if companies can manage and mitigate potential risks (Kulkov et al., 2024).

Mustafa et al., (2025) explains that AI can encourage green innovation, where the development of environmentally friendly technologies and practices can achieve sustainability, as also found in the research of (Camilleri et al., 2024). Therefore, green innovation plays an intervening role between the use of AI in sustainability accounting to achieve the SDGs. Furthermore, Mustafa et al., (2025) explains that the effectiveness of AI use in sustainability reporting is influenced by geographic region (Liu et al., 2024), manufacturing, service, or other sectors (Kazemi et al., 2023), and company size (Liu et al., 2024; Camilleri et al., 2024). (Yu et al., 2025) research shows that ESG performance is in the form of increased efficiency in both production and supply chains when utilizing AI. As companies prioritize short-term survival over long-term investment, industrial competitiveness strengthens AI's positive impact on ESG, while environmental uncertainty weakens it.

AI can accelerate the achievement of a sustainable culture by enhancing collaboration and innovation initiatives. Executives can develop strategies to enhance corporate sustainability through the integration of AI into ESG and appropriate stakeholder engagement. Furthermore, third-party assurance is recommended to enhance the credibility of ESG reports. Sustainable AI is permitted for ESG data analysis as long as it is conducted responsibly (Mohamed Riyath & Inun Jariya, 2024).

Outcome

According to Sætra, (2021)**,** ESG reporting should be linked to AI ethics by using the SDGs as the basis for analysing AI impacts and the relationships between them. This is done to examine the overall micro, meso, and macro impacts, and to distinguish between direct and indirect effects (Manokha, 2020). Positive micro impacts are demonstrated by how a company's entire business chain enables employee convenience and productivity, cost savings, and more effective management. However, there are also negative impacts for employees (Sætra, 2021b)**.** Meso-level impacts are demonstrated by increased company profitability, and macro-level impacts are demonstrated by potential economic growth (SDG 8) and infrastructure improvements (SDG 9). Furthermore, it is necessary to acknowledge that AI may have negative impacts related to gender equality (SDG 5). The sustainability impacts related to AI, by more actively using SDGs in ESG accounting and reporting, could lead to companies engaging in greenwashing by using SDGs merely as a decoration to illustrate how well the company is performing. Therefore, transparent and honest disclosure is needed in ESG reporting, which basically means that the ESG report communicates the positive and negative impacts of the company's activities realistically.

AI has a stronger relationship with the Environmental SDGs than with the Social (e.g., poverty, hunger, gender equality) and Economic (e.g., working conditions, economic growth, reduced inequality, partnerships to promote the SDGs). The use of AI can improve environmental performance, which in turn increases a company's reputation, value, and customer loyalty. AI can also significantly reduce costs by optimizing energy efficiency. Entities are using AI to support environmental sustainability and align with market expectations, thereby enhancing competitive advantage. Therefore, to address the increasingly complex challenges of social and economic growth, policymakers need to be encouraged to develop guidelines for AI utilization (Spagnuolo et al., 2025).

Conclusions and Recommendations

This article aims to conduct a systematic literature review on AI Ethics in sustainability accounting and its support for the SDGs using the ADO model. The systematic literature review process was conducted on articles sourced from the Scopus database. The results of the systematic literature review process using the ADO model produced a total of 57 articles for further analysis. The analysis results indicate that the use of AI in sustainability accounting has an impact on increasing efficiency and accelerating the process of analysis and interpretation of the resulting reports. Sustainability reports produced by entities will be able to influence stakeholder perceptions. Therefore, human roles are still needed to check the grammar, tone, and writing style of sustainability reports resulting from the use of AI. To prevent the misuse of AI, regulations and guidelines are needed on how to use AI responsibly and ethically.

This article recommends several things: first, companies that utilize AI are expected to be able to manage and mitigate potential risks and develop green innovations to contribute to the achievement of the SDGs. Second, in preparing sustainability reports that utilize AI, it can be done effectively by considering the geographic region, company sector, and company size. Third, to support the achievement of the SDGs, the implementation of sustainability accounting using AI must prioritize long-term investments and consider industry competitiveness and environmental uncertainty. Fourth, future researchers are expected to assess micro, meso, and macro impacts and distinguish between direct and indirect impacts in research topics on ESG, AI ethics, and the SDGs.

References

Aggarwal, S., Dsouza, S., Joshi, M., Antoun, R., & Phan, D. H. T. (2024). Environmental, social and governance investing: systematic literature review using ADO model. *Journal of Accounting Literature*. https://doi.org/10.1108/JAL-11-2024-0319

Ahmed, M. M. A. (2023). The relationship between corporate governance mechanisms and integrated reporting practices and their impact on sustainable development goals: evidence from South Africa. *Meditari Accountancy Research*, *31*(6), 1919–1965. https://doi.org/10.1108/MEDAR-06-2022-1706

Ala-Luopa, S., Olsson, T., Väänänen, K., Hartikainen, M., & Makkonen, J. (2024). Trusting Intelligent Automation in Expert Work: Accounting Practitioners' Experiences and Perceptions. *Computer Supported Cooperative Work: CSCW: An International Journal*, *33*(4), 1343–1371. https://doi.org/10.1007/s10606-024-09499-6

Alqahtani, A. S. H. (2023). Application of Artificial Intelligence in Carbon Accounting and Firm Performance: A Review Using Qualitative Analysis. *International Journal of Experimental Research and Review*, *35*, 138–148. https://doi.org/10.52756/ijerr.2023.v35spl.013

Astobiza, A. M., Toboso, M., Aparicio, M., & López, D. (2021). AI ethics for sustainable development goals. *IEEE Technology and Society Magazine, 40*(2), 66–71. https://doi.org/10.1109/MTS.2021.3056290

Binns, R. (2018). Fairness in Machine Learning: Lessons from Political Philosophy. *Proceedings of Machine Learning Research*, *81*, 1–11.

Bose, S., Khan, H. Z., & Bakshi, S. (2024). Determinants and consequences of sustainable development goals disclosure: International evidence. *Journal of Cleaner Production*, *434*. https://doi.org/10.1016/j.jclepro.2023.140021

Camilleri, M. A., Zhong, L., Rosenbaum, M. S., & Wirtz, J. (2024). Ethical considerations of service organizations in the information age. *Service Industries Journal*, *44*(9–10), 634–660. https://doi.org/10.1080/02642069.2024.2353613

Casciello, R., Maffei, M., & Meucci, F. (2025). Board characteristics and Sustainable Development Goals disclosure: evidence from European state-owned enterprises. *Journal of Public Budgeting, Accounting and Financial Management*, *37*(2), 224–253. https://doi.org/10.1108/JPBAFM-06-2023-0099

Christ, K. L., Dijkstra-Silva, S., Burritt, R. L., & Schaltegger, S. (2024). Sustainability management accounting – enabling macro-level sustainability transformation towards the United Nations Sustainable Development Goals. *Meditari Accountancy Research*, *32*(3), 923–944. https://doi.org/10.1108/MEDAR-03-2023-1952

Cortese, C., & Andrew, J. (2020). Extracting transparency: the process of regulating disclosures for the resources industry. *Accounting, Auditing and Accountability Journal*, *33*(2), 472–495. https://doi.org/10.1108/AAAJ-11-2017-3226

Cosma, S., Leopizzi, R., Nobile, L., & Schwizer, P. (2022). Revising the Non-Financial Reporting Directive and the role of board of directors: a lost opportunity? *Journal of Applied Accounting Research*, *23*(1), 207–226. https://doi.org/10.1108/JAAR-04-2021-0102

Daud, D., Kishan, K., & Azhar, Z. (2024). A systematic review on ethical challenges of emerging AI in accounting using the ADO model. *International Journal of Research and Innovation in Social Science, 8*(19). https://doi.org/10.47772/IJRISS.2024.ICAME2407

de Villiers, C., Dimes, R., & Molinari, M. (2023). How will AI text generation and processing impact sustainability reporting? Critical analysis, a conceptual framework and avenues for future research. *Sustainability Accounting, Management and Policy Journal*, *15*(1), 96–118. https://doi.org/10.1108/SAMPJ-02-2023-0097

de Villiers, C., Dimes, R., & Molinari, M. (2025). Determinants, mechanisms and consequences of UN SDGs reporting by universities: conceptual framework and avenues for future research. *Journal of Public Budgeting, Accounting and Financial Management*, *37*(2), 329–349. https://doi.org/10.1108/JPBAFM-07-2023-0125

Dell, S., Akpan, M., & Carr, A. (2024). Aligning artificial intelligence with ethical accountancy: A global perspective on emerging frameworks. *Corporate Ownership and Control*, *21*(1), 47–54. https://doi.org/10.22495/cocv21i1art5

Di Vaio, A., Zaffar, A., & Chhabra, M. (2024). Intellectual capital through decarbonization for achieving Sustainable Development Goal 8: a systematic literature review and future research directions. *Journal of Intellectual Capital*, *25*(7), 54–86. https://doi.org/10.1108/JIC-05-2024-0131

Eager, B., Deegan, C., & Fiedler, T. (2024). Insights into the application of AI-augmented research methods for informing accounting practice: the development – through AI - of accountability-related prescriptions pertaining to seasonal work. *Meditari Accountancy Research*, *32*(5), 1977–1997. https://doi.org/10.1108/MEDAR-08-2023-2116

Erin, O. A., & Bamigboye, O. A. (2022). Evaluation and analysis of SDG reporting: evidence from Africa. *Journal of Accounting and Organizational Change*, *18*(3), 369–396. https://doi.org/10.1108/JAOC-02-2020-0025

Erin, O. A., & Olojede, P. (2024). Do nonfinancial reporting practices matter in SDG disclosure? An exploratory study. *Meditari Accountancy Research*, *32*(4), 1398–1422. https://doi.org/10.1108/MEDAR-06-2023-2054

Fazal, A., Ahmed, A., & Abbas, S. (2025). Importance of artificial intelligence in achieving sustainable development goals through financial inclusion. *Qualitative Research in Financial Markets*, *17*(2), 432–452. https://doi.org/10.1108/QRFM-04-2023-0098

Ferrero-Ferrero, I., Muñoz-Torres, M. J., Rivera-Lirio, J. M., Escrig-Olmedo, E., & Fernández-Izquierdo, M. Á. (2024). Sustainable development goals in the hospitality industry: a dream or reality? *Journal of Accounting and Organizational Change*, *20*(5), 773–796. https://doi.org/10.1108/JAOC-09-2022-0146

Floridi, L., Cowls, J., Beltrametti, M., Chatila, R., Chazerand, P., Dignum, V., Luetge, C., Madelin, R., Pagallo, U., Rossi, F., Schafer, B., Valcke, P., & Vayena, E. (2018). AI4People—An Ethical Framework for a Good AI Society: Opportunities, Risks, Principles, and Recommendations. *Minds and Machines*, *28*(4), 689–707. https://doi.org/10.1007/s11023-018-9482-5

Ghelani, D., & Kian Hua, T. (2022). Conceptual Framework of Web 3.0 and Impact on Marketing, Artificial Intelligence, and Blockchain. *International Journal of Information and Communication Sciences*, *7*(1), 10. https://doi.org/10.11648/j.ijics.20220701.12

Gueddari, A., Saafi, S., & Nouira, R. (2024). Is money laundering a hurdle to achieving Sustainable Development Goals? *Journal of Money Laundering Control*, *27*(2), 242–261. https://doi.org/10.1108/JMLC-04-2023-0071

Guermazi, I., & Gharbi, M. W. (2024). Analyzing the achievement of the sustainable development goals (SDGs) in Saudi Arabia and the impact of the COVID-19 pandemic. *Journal of Financial Reporting and Accounting*. https://doi.org/10.1108/JFRA-09-2023-0579

Guidotti, R., Monreale, A., Ruggieri, S., Turini, F., Giannotti, F., & Pedreschi, D. (2019). A survey of methods for explaining black box models. *ACM Computing Surveys*, *51*(5). https://doi.org/10.1145/3236009

Hahn, R., & Kühnen, M. (2013). Determinants of sustainability reporting: A review of results, trends, theory, and opportunities in an expanding field of research. *Journal of Cleaner Production*, *59*(November), 5–21. https://doi.org/10.1016/j.jclepro.2013.07.005

Hamad, S., Lai, F. W., Shad, M. K., Khatib, S. F. A., & Ali, S. E. A. (2023). Assessing the implementation of sustainable development goals: does integrated reporting matter? *Sustainability Accounting, Management and Policy Journal*, *14*(1), 49–74. https://doi.org/10.1108/SAMPJ-01-2022-0029

ICAEW. (2018). *Artificial intelligence and the future of accountancy*. Accessed from website: https://www.icaew.com/-/media/corporate/files/technical/technology/thought-leadership/artificial-intelligence.ashx

Jankalová, M., & Jankal, R. (2024). Review of Sustainability Accounting Terms. *Administrative Sciences*, *14*(7). https://doi.org/10.3390/admsci14070137

Kazemi, M. Z., Elamer, A. A., Theodosopoulos, G., & Khatib, S. F. A. (2023). Reinvigorating research on sustainability reporting in the construction industry: A systematic review and future research agenda. *Journal of Business Research*, *167*. https://doi.org/10.1016/j.jbusres.2023.114145

Khaddam, A. A., & Alzghoul, A. (2025). Artificial Intelligence-Driven Business Intelligence for Strategic Energy and ESG Management: A Systematic Review of Economic and Policy Implications. *International Journal of Energy Economics and Policy*, *15*(4), 635–650. https://doi.org/10.32479/ijeep.19820

Kulkov, I., Kulkova, J., Rohrbeck, R., Menvielle, L., Kaartemo, V., & Makkonen, H. (2024). Artificial intelligence - driven sustainable development: Examining organizational, technical, and processing approaches to achieving global goals. *Sustainable Development*, *32*(3), 2253–2267. https://doi.org/10.1002/sd.2773

Lauwo, S. G., Azure, J. D. C., & Hopper, T. (2022). Accountability and governance in implementing the Sustainable Development Goals in a developing country context: evidence from Tanzania. *Accounting, Auditing and Accountability Journal*, *35*(6), 1431–1461. https://doi.org/10.1108/AAAJ-10-2019-4220

Ligorio, L., Caputo, F., & Venturelli, A. (2025). Sustainability reporting in public–private hybrid organisations: a structured literature review. *Journal of Applied Accounting Research*, *26*(2), 362–389. https://doi.org/10.1108/JAAR-06-2023-0178

Liu, F., Wang, R., & Fang, M. (2024). Mapping green innovation with machine learning: Evidence from China. *Technological Forecasting and Social Change*, *200*, 123107. https://doi.org/10.1016/J.TECHFORE.2023.123107

Manokha, I. (2020). The implications of digital employee monitoring and people analytics for power relations in the workplace. *Surveillance & Society, 18*(4), 540–554.

Mohamed Riyath, M. I., & Inun Jariya, A. M. (2024). The role of ESG reporting, artificial intelligence, stakeholders and innovation performance in fostering sustainability culture and climate resilience. *Journal of Financial Reporting and Accounting*. https://doi.org/10.1108/JFRA-10-2023-0621

Moodaley, W., & Telukdarie, A. (2023). Greenwashing, Sustainability Reporting, and Artificial Intelligence: A Systematic Literature Review. *Sustainability (Switzerland)*, *15*(2). https://doi.org/10.3390/su15021481

Mustafa, F., Smolarski, J., & Elamer, A. A. (2025). The Convergence of Artificial Intelligence and Sustainability Reporting: A Systematic Review of Applications, Challenges and Future Directions. *Business Strategy and the Environment*. https://doi.org/10.1002/bse.70090

Nain, A., Bohra, N. S., Ahmad, V., Goyal, L., Walia, A., & Garg, D. (2024). AI-Driven Green Accounting for Sustainable Development. *Proceeding of 2024 International Conference on Communication, Computing and Energy Efficient Technologies, I3CEET 2024*, 790–795. https://doi.org/10.1109/I3CEET61722.2024.10993586

Ngu, S. B., & Amran, A. (2024). Unveiling the antecedents and the outcome of materiality disclosure: insights from sustainability reporting of Malaysian public listed companies. *Meditari Accountancy Research*, *32*(6), 2053–2082. https://doi.org/10.1108/MEDAR-10-2023-2206

Nguyen, H. C., & Duong, H. K. (2025). The extent and determinants of SDG disclosures in Vietnamese listed firms. *Meditari Accountancy Research*, *33*(1), 335–364. https://doi.org/10.1108/MEDAR-08-2024-2605

Olatoye, F. O., Awonuga, K. F., Mhlongo, N. Z., Ibeh, C. V., Elufioye, O. A., & Ndubuisi, N. L. (2024). AI and ethics in business: A comprehensive review of responsible AI practices and corporate responsibility. *International Journal of Science and Research Archive, 11*(1), 1433–1443. https://doi.org/10.30574/ijsra.2024.11.1.0235

Owolabi, O. S., Uche, P. C., Adeniken, N. T., Ihejirika, C., Islam, R. Bin, & Chhetri, B. J. T. (2024). Ethical Implication of Artificial Intelligence (AI) Adoption in Financial Decision Making. *Computer and Information Science*, *17*(1), 49. https://doi.org/10.5539/cis.v17n1p49

Owusu, G. M. Y., & Ofori-Owusu, C. (2024). Analysis of the structure and evolution of sustainability accounting research: a 41-year review. *Meditari Accountancy Research*, *32*(4), 1445–1492. https://doi.org/10.1108/MEDAR-11-2022-1846

Pandey, A., Dongre, N., & Gupta, O. P. (2021). Artificial intelligence in accounting: Opportunities & challenges. *Bi-Lingual International Research Journal, 11*(41).

Peng, Y., Ahmad, S. F., Ahmad, A. Y. A. B., Al Shaikh, M. S., Daoud, M. K., & Alhamdi, F. M. H. (2023). Riding the Waves of Artificial Intelligence in Advancing Accounting and Its Implications for Sustainable Development Goals. *Sustainability (Switzerland), 15*(19). https://doi.org/10.3390/su151914165

Periche, J. G., & Pinto, C. M. (2024). *AI and SDGs in Latin America and the Caribbean*. Retrieved from http://www.humaga.com.ar

Podile, Dr. V., Priyanka Reddy, K., Sai Reddy, V. N., Surendra Babu, M., & Karthik Phani, A. (2024). Artificial Intelligence and Corporate Social Responsibility: Synergies, Challenges, and Future Directions. *International Journal of Advanced Multidisciplinary Research and Studies*, *4*(6), 95–99. https://doi.org/10.62225/2583049x.2024.4.6.3399

Roselli, D., Matthews, J., & Talagala, N. (2019). Managing bias in AI. *The Web Conference 2019 - Companion of the World Wide Web Conference, WWW 2019*, 539–544. https://doi.org/10.1145/3308560.3317590

Sætra, H. S. (2021). Ai in context and the sustainable development goals: Factoring in the unsustainability of the sociotechnical system. *Sustainability (Switzerland)*, *13*(4), 1–19. https://doi.org/10.3390/su13041738

Saraiva, H. I. B., Alves, M. do C., Gabriel, V. M. S., & Chinthana, S. (2024). *A proposal for a balanced scorecard for the water utilities sector to address the United Nations sustainable development goals*. Meditari Accountancy Research, 32(5). https://doi.org/10.1108/MEDAR-2023-2010

Schweitze, B. (2024). Artificial Intelligence (AI) Ethics in Accounting. *Journal of Accounting, Ethics & Public Policy*, *25*(1). https://doi.org/10.60154/jaepp.2024.v25n1p67

Si, D. (2022). *A framework to analyze the impacts of AI with the sustainable development goals*. Highlights in Science, Engineering and Technology, 17, 313–323. https://doi.org/10.54097/hset.v17i.2621

Spagnuolo, F., Casciello, R., Martino, I., & Meucci, F. (2025). Exploring the impact of artificial intelligence on the pursuit of SDGs: Evidence from European state-owned enterprises. In *Corporate Social Responsibility and Environmental Management* (Vol. 32, Issue 2, pp. 1987–2001). John Wiley and Sons Ltd. https://doi.org/10.1002/csr.3047

Stefanescu, C. A. (2022). Linking sustainability and non-financial reporting directive 2014/95/EU through isomorphism lens. *Meditari Accountancy Research, 30*(6), 1680–1704.

Sultana, N., Biswas, P. K., Singh, H., & Chapple, L. (2024). Gender diversity on corporate boards: international evidence on commitment to United Nations Sustainable Development Goals. *Journal of Accounting Literature*. https://doi.org/10.1108/JAL-08-2023-0154

Thanyawatpornkul, R. (2024). Harnessing artificial intelligence for sustainable development in emerging markets: Exploring opportunities and challenges in Thailand. *European Journal of Sustainable Development Research*, *8*(4). https://doi.org/10.29333/ejosdr/15435

Tiron-Tudor, A., & Deliu, D. (2022). Reflections on the human-algorithm complex duality perspectives in the auditing process. *Qualitative Research in Accounting and Management*, *19*(3), 255–285. https://doi.org/10.1108/QRAM-04-2021-0059

Utami, W. (2015). Financial Performance and the Quality of Sustainability Disclosure Based on Global Reporting Initiative: Value Relevances Study in Indonesia Stock Exchange. *Mediterranean Journal of Social Sciences*, *6*(5), 243–248. https://doi.org/10.5901/mjss.2015.v6n5s5p243

Vinuesa, R., Azizpour, H., Leite, I., Balaam, M., Dignum, V., Domisch, S., Felländer, A., Langhans, S. D., Tegmark, M., & Fuso Nerini, F. (2020). The role of artificial intelligence in achieving the Sustainable Development Goals. *Nature Communications*, *11*(233). https://doi.org/10.1038/s41467-019-14108-y

Vysochan, O., Hyk, V., Vysochan, O., & Olshanska, M. (2021). Sustainability Accounting: A Systematic Literature Review and Bibliometric Analysis. *Quality - Access to Success*, *22*(185), 95–102. https://doi.org/10.47750/QAS/22.185.14

Welbeck, E. E., Owusu, G. M. Y., Bekoe, R. A., & Kusi, J. A. (2017). Determinants of environmental disclosures of listed firms in Ghana. *International Journal of Corporate Social Responsibility*, *2*(1). https://doi.org/10.1186/s40991-017-0023-y

Yu, X., Fan, L., & Yu, Y. (2025). Artificial Intelligence and Corporate ESG Performance: A Mechanism Analysis Based on Corporate Efficiency and External Environment. *Sustainability (Switzerland)*, *17*(9). https://doi.org/10.3390/su17093819

Zampone, G., & Guidi, M. (2024). Sustainability reporting and assurance practices contribution to SDG disclosure: evidence from communication on progress (CoP). *Meditari Accountancy Research*, *32*(7), 236–265. https://doi.org/10.1108/MEDAR-09-2023-2165