Berajah Journal
Published by: CV Lafadz Jaya | ISSN: 2797-1805 | E-ISSN: 2797-1882

Volume 6 No.4 (2026)
Page: 1576 – 1591
https://ojs.berajah.com/index.php/go/

SUSTAINABILITY REPORTING AND ESG DISCLOSURE QUALITY IN THE ERA OF DIGITAL ACCOUNTING TRANSFORMATION

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Received: 01-06-2026 | **Revised**: 20-06-2026 | **Accepted**: 30-06-2026 | **Published**: 03-07-2026

Abstract

Digital accounting transformation has shifted the paradigm of corporate reporting through the application of several digital technologies that might raise the standard of information about sustainability. This modification encourages businesses to create Environmental, Social, and Governance (ESG) disclosures and sustainability reports that are more accurate, transparent, and in accordance with stakeholder demands. This study aims to analyze the role of digital accounting transformation in improving the quality of sustainability reporting and ESG disclosures through a literature review approach. The research method uses a literature study by reviewing various reputable scientific articles, books, and relevant academic documents regarding digital accounting transformation, the caliber of ESG disclosures and sustainability reporting. The study's findings show that the use of digital technologies including blockchain, cloud accounting, intelligence, and big data analytics, and integrated reporting systems, can improve data accuracy, information transparency, report preparation speed, verification process effectiveness, and compliance with sustainability reporting standards. On the other hand, the quality of ESG disclosures is still influenced by various challenges, including organizational readiness, data governance, cybersecurity, human resource competency, and evolving regulatory dynamics. Therefore, successful digital accounting transformation requires synergy between technological innovation, good corporate governance, and sustainability strategies to produce more credible, relevant, and decision-supporting ESG reporting. This research provides a conceptual contribution to enriching the literature discusses the connection between raising the standard of sustainability reporting in the digital age and digital accounting transformation.

Keywords: Digital Accounting Transformation, ESG Disclosure Quality, Sustainability Reporting, Corporate Governance, Digital Technology

INTRODUCTION

One of the most important developments in the evolution of the contemporary business environment is digital transformation. Information technology's quick development has completely changed how businesses handle data, make choices, and gather and share information with stakeholders. The digitalization of financial recording procedures is no longer the exclusive emphasis of this change in accounting; instead, it has developed into a system that can more fully integrate the administration of both financial and non-financial data. Utilizing technologies like blockchain, cloud accounting, big data analytics, and artificial intelligence (AI), and digital-based reporting systems has expanded the function of accounting as a provider of strategic information that supports transparency, accountability, and sustainability-oriented decision-making (Nasution et al., 2026). This shift is becoming increasingly important as global attention increases to sustainability issues, corporate social responsibility, and good governance practices.

This shift in corporate reporting paradigms is encouraging organizations to focus beyond solely on presenting financial information to also convey information about the economic, social, and environmental impacts of business activities (Sun et al., n.d.-a). In this context, sustainability reporting has emerged as a crucial instrument for illustrating a company's commitment to creating long-term value through responsible

DOI: https://doi.org/10.47353/bj.v6i4.719

business practices. Sustainability reporting not only acts as a foundation for assessing an organization's sustainability performance as well as a channel of communication between businesses and stakeholders. In keeping with these advancements, investors, regulators, creditors, customers, and the general public are paying more attention to the idea of Environmental, Social, and Governance (ESG) a key indicator in assessing the quality of corporate governance and sustainability prospects (Zainuddin et al., 2026).

The increased attention to ESG disclosure is driven by the growing demand for transparency in corporate information. Modern investors no longer solely consider financial performance as a basis for investment but also evaluate how a business handles social issues, controls environmental risks, and puts good corporate governance into practice. Because of this, the caliber of ESG disclosure is crucial in evaluating market trust in a company. High-quality ESG disclosure is expected to provide relevant, complete, accurate, comparable, and easily understood information, thereby reducing information asymmetry between companies and their stakeholders (De Silva et al., 2024a). Therefore, information quality is a crucial aspect in supporting the effectiveness of sustainability reporting.

In practice, the preparation of sustainability reporting and ESG disclosures faces various challenges. The complexity of data originating from various organizational units, the need for real-time information, the increasing volume of non-financial data, and the demand for information accuracy often hinder the production of quality reports. Furthermore, the sustainability data verification process still faces various limitations when performed manually, potentially leading to inconsistencies, reporting delays, and low credibility of the information presented. These challenges demonstrate that improving the quality of sustainability reporting requires the support of a more integrated information system capable of managing data effectively (Saebah & Puspita, 2025).

Digital accounting transformation offers solutions to these challenges through the use of digital technologies that can improve efficiency and information quality. AI integration enables automated data analysis processes with a higher degree of accuracy, while big data analytics supports the processing of large amounts of data to produce more comprehensive information. Blockchain technology, on the other hand, guarantees data integrity through transparent and difficult-to-manipulate recording mechanisms, while cloud accounting enables more flexible, collaborative, and real-time reporting processes. The combination of these various technologies provides an opportunity for companies to produce sustainability reports that are more accurate, transparent, verifiable, and in accordance with the development of international reporting standards (Olsen, 2023a).

However, the implementation of digital accounting transformation has not yet fully achieved optimal ESG disclosure quality. The adoption rate of digital technology still shows significant variation across organizations due to differences in resource capacity, technological infrastructure readiness, human resource competency, organizational culture, and digital investment capabilities. Furthermore, New issues like cybersecurity and data protection are brought forth by our growing reliance on digital technology, information governance, system interoperability, and the need for regulations that accommodate sustainable technological developments. If these challenges are not managed effectively, the benefits of digital transformation in improving the quality of sustainability reporting may be suboptimal.

The development of international sustainability reporting regulations further reinforces the importance of integrating digital transformation with the quality of ESG disclosure. Various sustainability reporting standards emphasize the importance of providing reliable, consistent, and comparable information as a basis for stakeholder decision-making. This situation requires companies to develop reporting systems

DOI: https://doi.org/10.47353/bj.v6i4.719

that not only meet compliance requirements but also generate information that adds value to investors, regulators, and the public. Thus, digital accounting transformation is not only viewed as a technological innovation, but also as an organizational strategy to enhance corporate credibility, legitimacy, and competitiveness amidst increasing demands for sustainable business practices (Secinaro et al., 2024).

Various previous studies have examined the relationship between accounting digitalization, sustainability reporting, and ESG disclosure. However, most studies still discuss these three aspects separately or focus on the implementation of specific technologies without providing a comprehensive synthesis of how digital accounting transformation as a whole affects the quality of sustainability reporting and ESG disclosure. Furthermore, the rapid development of digital technology necessitates updated conceptual studies to better describe the dynamics of digital accounting technology implementation in supporting more effective sustainability reporting. This gap indicates the need for research capable of integrating various empirical findings to generate a more comprehensive understanding of the relationship between digital accounting transformation and the quality of ESG disclosure.

Based on this explanation, the goal of this study is to use a literature review methodology to thoroughly examine how the digital accounting revolution has improved the caliber of sustainability reporting and ESG disclosure. It is anticipated that this study will advance accounting science, especially by deepening our knowledge of how to integrate digital technology with sustainability reporting. Additionally, it is anticipated that the research findings would be used as a reference by scholars, practitioners, regulators, and companies in formulating digital accounting transformation strategies that are capable of producing more transparent, credible, and relevant ESG disclosures and supporting the creation of sustainable corporate value in the era of digital transformation.

LITERATURE REVIEW

The Concept and Evolution of Digital Accounting Transformation

The process of completely altering accounting's operations, procedures, and governance by utilizing digital technology to enhance financial data quality, operational performance, and decision-making efficacy is known as "digital accounting transformation.". This transformation is not only defined as a shift from manual record-keeping to computer-based systems, but also reflects the integration of various technologies such as cloud computing, artificial intelligence, data analytics, blockchain, and business process automation into the entire accounting cycle (Brukhansky & Spilnyk, 2021). Thus, digital accounting transformation shifts the accounting paradigm from an administrative function oriented toward historical record-keeping to a strategic function capable of producing real-time, predictive, and value-added information for various stakeholders. This change has also driven a shift in the competency of accountants from mere financial report preparers to data analysts, business advisors, and risk managers who are able to utilize technology to support the achievement of organizational goals.

The development of digital accounting in business practices has experienced significant acceleration in line with the increasing demands for speed, accuracy, and transparency of financial information in the digital economy era. Modern organizations are moving away from fragmented conventional accounting systems and replacing them with digital platforms capable of integrating various business functions, such as finance, marketing, operations, human resources, and supply chain management. This integration allows for automated transaction recording with a lower error rate and produces financial reports that can be accessed in real time by management (Prasetianingrum & Sonjaya, 2024). In addition to improving operational

DOI: https://doi.org/10.47353/bj.v6i4.719

efficiency, digital accounting also strengthens organizations' capabilities in financial planning, budget control, performance analysis, and risk identification more quickly and accurately. This development demonstrates that digital accounting has become a key foundation in supporting data-driven business transformation, where financial information no longer functions as a final report but as a strategic source of information that supports company innovation and competitiveness (Busulwa, 2021).

In the context of accounting information systems, digital technology acts as an enabler, enabling data integration, process automation, and improving the quality of financial information. Accounting information systems supported by digital technology are able to connect various internal and external data sources, resulting in more comprehensive, relevant, and timely information. The use of technologies such as enterprise resource planning (ERP), cloud accounting, robotic process automation (RPA), and business intelligence enables companies to record transactions, reconcile transactions, manage internal controls, and prepare financial reports more efficiently and consistently. Furthermore, the application of data analytics enables organizations to identify transaction patterns, predict financial trends, and detect potential irregularities or fraud early on (Anomah et al., 2025). As a result, a digital accounting information system supports corporate governance that adjusts to changes in the business environment in addition to being a tool for managing financial data.

Digitalization also plays a crucial role in driving corporate transparency and accountability by improving traceability, data integrity, and the quality of information disclosure to stakeholders. Digital systems enable every transaction to be systematically documented with a clear audit trail, facilitating verification, monitoring, and evaluation processes. This enhances investor, regulator, and public trust in the veracity of a business's financial statements. Additionally, digitalization supports the delivery of financial and non-financial information more quickly and accurately, and in line with modern reporting requirements, including disclosure of sustainability and environmental, social, and governance (ESG) aspects. Increased transparency will strengthen organizational accountability mechanisms because every decision can be traced based on digitally documented data (Abdelhaq et al., 2025). Thus, the evolution of digital accounting transformation not only results in operational efficiency but also strengthens corporate governance by improving information quality, openness, responsibility, and stakeholder confidence in the corporate reporting procedure.

The Concept of Sustainability Reporting from a Modern Accounting Perspective

From a modern accounting standpoint, the idea of sustainability reporting has developed as an extension of the accounting function that now includes information on environmental, social, and governance (ESG) performance in addition to financial data. According to Abela (2022), sustainability reporting is the process of gathering and presenting data that shows how an organization's operations affect social, environmental, and economic aspects in an integrated way, giving a more complete picture of the business's capacity to generate long-term value. Increasing a company's transparency is the main goal of sustainability reporting, accountability, and credibility to stakeholders by presenting relevant information on sustainability strategies, risk management, and contributions to sustainable development. From a modern accounting perspective, sustainability reports also serve as decision-making tools that support investors, regulators, creditors, and the public in assessing company performance more holistically than conventional financial reports (Zik-Rullahi & Jide, 2023).

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The development of sustainability reporting globally demonstrates a paradigm shift from voluntary reporting to increasingly standardized practices integrated with corporate reporting systems. Increasing attention to climate change, corporate social responsibility, and demands for sustainable investment are driving organizations in various countries to disclose ESG information more systematically. Digital transformation in accounting has accelerated the process of collecting, processing, and reporting sustainability data, making the information presented more accurate, timely, and verifiable. Furthermore, growing investor awareness of non-financial risks has made sustainability reporting a key indicator in assessing business resilience, governance quality, and a company's future sustainability prospects (Suadiye, 2021).

The quality of sustainability reporting is determined by a number of fundamental principles that ensure the information produced is valuable to report users. Sustainability information must meet the characteristics of relevance, reliability, comparability, consistency, completeness, balance, and ease of understanding. Reporting should also reflect the company's actual condition without omitting positive or negative information to provide a fair representation of the organization's sustainability performance. Furthermore, the principle of materiality is a crucial aspect in identifying sustainability issues that have a significant impact on company value creation and stakeholder interests. Implementing these principles will enhance the credibility of reports and strengthen public trust in the company's commitment to responsible business practices.

To support the harmonization of sustainability reporting practices, various reporting standards and frameworks have been developed as guidelines for organizations at the international level. Widely used standards emphasize the importance of consistent disclosure, comparability of information, and integration between financial and non-financial information. The presence of sustainability reporting frameworks also encourages companies to identify ESG-related risks and opportunities more systematically, thereby improving the quality of strategic decision-making. From a modern accounting perspective, the implementation of sustainability reporting standards not only serves as a tool for regulatory compliance but also becomes part of a company's strategy to create sustainable economic value, strengthen organizational legitimacy, and enhance competitiveness amidst increasing demands for transparent, responsible, and sustainable development-oriented business practices.

Environmental, Social, and Governance (ESG) Disclosure Quality

Environmental, Social, and Governance (ESG) disclosure quality represents the level of completeness, relevance, accuracy, and transparency of information a company provides regarding its sustainability performance. ESG disclosure is no longer viewed as a supplement to annual reports but has evolved into an integral part of the modern corporate reporting system, linking economic, social, and environmental aspects within a framework of long-term value creation. The concept of ESG disclosure emphasizes that companies have a responsibility to communicate the impact of business activities on the environment, society, and corporate governance practices openly to all stakeholders (Abu Afifa et al., 2025). Therefore, the quality of ESG disclosure is measured not only by the quantity of information provided, but also by the ability of that information to describe the company's condition objectively, comparably, and consistently, and to support better decision-making.

The environmental dimension reflects a company's commitment to managing the environmental impact of its operations through various sustainability-oriented policies and practices. This aspect

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encompasses greenhouse gas emission management, energy efficiency, natural resource conservation, waste management, renewable energy use, biodiversity protection, and climate change mitigation strategies (Arif et al., 2020). The social dimension focuses on the company's relationships with employees, customers, suppliers, and the wider community. Disclosures in this aspect include human rights protection, occupational safety and health, workforce diversity, human resource development, consumer responsibility, community involvement, and the company's contribution to social development. Meanwhile, the governance dimension emphasizes the effectiveness of corporate governance, encompassing the structure of the board of commissioners and directors, supervisory independence, business ethics, internal control systems, risk management, transparency, regulatory compliance, anti-corruption mechanisms, and protection of the interests of shareholders and other stakeholders. These three dimensions complement each other in forming a comprehensive picture of the sustainability and quality of company management (Wasiuzzaman & Subramaniam, 2023). The quality of ESG disclosure is generally evaluated through several key indicators: completeness, relevance, reliability, accuracy, consistency, comparability, timeliness, and verifiability. Quality information must explain a company's sustainability targets, performance achievements, quantitative and qualitative indicators, measurement methods, and risks and opportunities related to ESG factors. Furthermore, the use of internationally recognized reporting standards is also a crucial factor in improving disclosure quality because it allows for comparability of the information provided across companies and across reporting periods. Advances in digital technology also support the improvement of ESG disclosure quality by utilizing cloud-based technology, artificial intelligence, real-time data analysis, and accounting information systems that can enhance data accuracy, speed up reporting, and increase sustainability information's transparency (Ellili, 2022).

ESG disclosure quality is important from a strategic standpoint for investors and various stakeholder groups because it serves as a source of information that illustrates a company's ability to manage non-financial risks while creating sustainable economic value. Investors are increasingly considering the quality of ESG disclosure as a basis for evaluating investment risk, long-term growth prospects, and a company's resilience to regulatory changes, market dynamics, and global environmental challenges. Meanwhile, creditors, regulators, customers, employees, and the public use ESG information to assess a company's level of accountability, legitimacy, and commitment to responsible business practices. Quality ESG disclosure can reduce information asymmetry, increase market trust, strengthen a company's reputation, and foster more harmonious relationships with all stakeholders. Therefore, improving ESG disclosure quality is an essential component in supporting good corporate governance, strengthening organizational competitiveness, and realizing sustainable economic development.

METHOD

The relationship between digital accounting transition and the caliber of sustainability reporting and Environmental, Social, and Governance (ESG) disclosures is examined in this study utilizing a qualitative methodology and a literature review method. In order to generate a conceptual understanding of the evolution of digital accounting revolution in supporting sustainability reporting, this technique was selected since it enables researchers to thoroughly synthesize numerous published study findings. Secondary data from reliable scientific publications, scholarly books, proceedings, and institutional records pertinent to the research issue made up the research data sources. The selection of the literature was based on the criteria of thematic suitability, publication quality, scientific contribution, and recency to adequately represent the

DOI: https://doi.org/10.47353/bj.v6i4.719

development of concepts, technology, and practices of sustainability reporting and ESG disclosures in the era of digital accounting transformation.

Data analysis was conducted through the stages of identification, selection, critical evaluation, synthesis, and interpretation of literature that met the inclusion criteria. Each source was analyzed to identify key concepts, theoretical developments, empirical findings, and the relationship between digital technology implementation and improved sustainability reporting and ESG disclosure quality. The analysis results were then compared and integrated to identify patterns, similarities, differences, and research gaps that require further development. Through this synthesis process, this research produces a comprehensive conceptual description of the role of digital accounting transformation in increasing transparency, accuracy, accountability, and credibility of sustainability reporting as well as the quality of ESG disclosure as a basis for further research development and as a reference for organizations in designing sustainability reporting strategies that are adaptive to the development of digital technology.

RESULTS AND DISCUSSION

The Role of Digital Accounting Transformation in Improving the Quality of Sustainability Reporting

One of the key contributions of digital accounting transformation to the quality of sustainability reporting lies in the use of Artificial Intelligence (AI). AI technology can automate the process of identifying, classifying, and validating sustainability data, which was previously performed manually. Through machine learning and natural language processing capabilities, AI can identify data patterns, detect anomalies, and minimize recording errors that could potentially degrade information quality (De Silva et al., 2024b). This automation accelerates the process of consolidating data from various organizational units, allowing sustainability reports to be prepared with a higher level of consistency. In addition to improving time efficiency, AI also helps organizations generate predictive analyses regarding environmental risks, energy consumption, carbon emissions, and the company's social impact. The resulting information becomes more relevant for strategic decision-making because it not only presents historical conditions but also provides an overview of potential future sustainability challenges.

Another important role comes from the use of Big Data Analytics, which enables organizations to process large volumes of data with a high level of complexity. Sustainability reporting in the modern era no longer relies solely on internal company data, but also integrates various external data sources such as supply chains, consumer behavior, environmental conditions, government regulations, and public perceptions of a company's sustainability practices. Big Data Analytics' ability to process this diverse data enables companies to obtain more in-depth information about the impact of their operations on environmental and social aspects. Comprehensive data-driven analysis produces more accurate sustainability indicators, improving the quality of disclosures. Furthermore, the use of advanced analytics helps companies identify the relationship between financial performance and sustainability performance, enabling business strategies to be directed toward creating both economic value and social and environmental value sustainably (Petcu et al., 2024).

Digital transformation is also further strengthening the credibility of sustainability reporting through the implementation of Blockchain technology. One of the main challenges in sustainability reporting is maintaining data integrity to prevent the information submitted from being easily manipulated or altered after the recording process (Vărzaru, 2022). Blockchain provides a distributed record-keeping system that is permanent, transparent, and verifiable by multiple parties. Every transaction or recorded sustainability data will have a digital footprint that is difficult to modify, increasing the level of trust in the resulting report. The

DOI: https://doi.org/10.47353/bj.v6i4.719

immutable nature of blockchain supports a more effective audit process because auditors and stakeholders can more easily trace the origin of data (Lodhia et al., 2025a). Thus, companies are able to strengthen accountability while reducing the risk of greenwashing, a long-standing concern in sustainability reporting implementation.

The use of cloud accounting also contributes significantly to improving the quality of sustainability reporting. Cloud-based systems allow all company data to be stored on an integrated platform and securely accessed by various work units according to their respective authorities. The availability of real-time data facilitates coordination between departments in the sustainability report preparation process, thereby reducing duplication and inconsistencies in information. Furthermore, cloud accounting supports organizational flexibility in integrating various digital applications related to energy management, carbon emission measurement, supply chain monitoring, and human resource management. This integration results in a more efficient information flow, enabling organizations to prepare sustainability reports in a more timely manner without compromising the quality or completeness of the information presented (Lombardi & Secundo, 2020).

The development of integrated reporting systems further strengthens the link between digital accounting transformation and improved sustainability reporting quality. These systems enable companies to combine financial and non-financial information in a single, interconnected reporting platform, creating a comprehensive picture of the organization's value creation in the short, medium, and long term. The integration of these various data types helps management understand the interrelationships between business strategy, risk management, innovation, governance, and the company's environmental and social impacts. As a result, sustainability reporting is no longer positioned as an additional report but rather an integral part of the organization's decision-making system (Mititean et al., 2026a). This approach also improves the consistency of information across periods, making it easier for investors and stakeholders to evaluate the company's sustainability performance on an ongoing basis.

Digital accounting transformation also promotes the realization of real-time reporting, a key characteristic of modern sustainability reporting. In conventional reporting systems, sustainability data is generally presented periodically, often delaying the information received by stakeholders. With the support of digital technology, companies can continuously update data, allowing for real-time monitoring of resource use, carbon emissions, energy consumption, and social indicators. The availability of real-time information enhances an organization's ability to take rapid corrective action if deviations from sustainability targets are detected. Furthermore, stakeholders obtain more up-to-date information, thus improving the quality of decision-making. This demonstrates that digital transformation not only improves reporting efficiency but also strengthens sustainability reporting's function as an organizational strategic control instrument (Alroud, 2025).

Improved sustainability reporting quality through digital accounting transformation is ultimately reflected in increased accuracy, transparency, relevance, comparability, and credibility of the information conveyed to stakeholders. Digitization enables automated data validation processes, reduces human error, accelerates report preparation, and expands the scope of information that can be disclosed in accordance with evolving global sustainability reporting standards. Organizations are also better prepared to meet regulatory demands that increasingly emphasize the importance of ESG transparency and sustainability accountability (Asare & NULL, 2026a). By synergistically leveraging AI, Big Data Analytics, Blockchain, Cloud Accounting, and integrated reporting systems, companies are able to produce sustainability reporting

DOI: https://doi.org/10.47353/bj.v6i4.719

that not only meets compliance needs but also serves as a strategic information source for investors, regulators, the public, and all stakeholders in assessing the organization's commitment to sustainable development. Therefore, digital accounting transformation can be seen as the main foundation in creating high-quality, reliable sustainability reporting, and is able to support the creation of corporate governance that is oriented towards long-term sustainability.

The Contribution of Digital Accounting Transformation to Improving the Quality of ESG Disclosure

One of the most tangible contributions of digital accounting transformation is the increased reliability of ESG information. In conventional reporting systems, sustainability data is often collected across multiple organizational units using different procedures, potentially leading to inconsistencies and recording errors. The Internet of Things (IoT), cloud-based accounting systems, artificial intelligence (AI), and enterprise resource planning (ERP) are examples of digital technologies that enable more accurate automated data collecting and validation procedures. This automation lessens the need for labor-intensive, human error-prone manual procedures, resulting in more reliable information. Furthermore, digital data integration allows all ESG indicators to be sourced from well-documented data sources, improving consistency across reporting periods. Improved information reliability provides confidence to investors, regulators, and the public that published sustainability information truly reflects the company's operational conditions (Sun et al., 2026).

In addition to increasing reliability, digital accounting transformation also strengthens the relevance of ESG information through more in-depth data analysis capabilities (Sun et al., n.d.-b). The use of Big Data Analytics enables companies to process large amounts of data from both internal and external activities, including energy consumption, carbon emissions, production waste, regulatory compliance, employee welfare, job security, and corporate governance effectiveness. This analytical capability yields more comprehensive information regarding the impact of company operations on environmental, social, and governance aspects. Relevant ESG information not only presents historical data but also provides an overview of trends, risks, opportunities, and future projections for a company's sustainability (H. Liu et al., 2025). Thus, ESG disclosure is no longer simply a matter of fulfilling reporting obligations but also a source of strategic data that helps create corporate policies that are better able to adjust to shifts in the business environment.

Digital accounting transformation also plays a crucial role in improving the comparability of ESG information. One of the main challenges in sustainability reporting practices is the differences in measurement methods, reporting formats, and indicators used by each company. Implementing a digital system that adheres to international reporting standards enables organizations to compile ESG data in a more structured and consistent manner, facilitating comparisons between periods and between companies. The use of an integrated database ensures that all indicators are calculated using a uniform methodology, resulting in information with a higher level of comparability. This benefits investors and analysts in objectively evaluating the sustainability performance of various companies and identifying organizations with a stronger commitment to implementing ESG principles (Wang & Hou, 2024).

Verifiability has also been enhanced through the implementation of digital technology, particularly blockchain and digital audit systems. Blockchain allows every transaction and ESG information to be recorded in a network that is permanent, transparent, and difficult to modify without the consent of all parties involved. This characteristic creates a clear audit trail, facilitating the verification process by independent auditors and regulators. Furthermore, digital technology enables the audit process to be conducted

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continuously through continuous auditing, allowing for faster detection of irregularities compared to traditional audit methods. The availability of systematically documented data enhances the credibility of ESG reports while reducing the potential for information manipulation that could undermine stakeholder trust. With increased verifiability, the quality of ESG disclosures is higher because they are supported by testable and accountable evidence (J. Liu et al., 2026).

Another equally important contribution is the ability of digital accounting transformation to reduce information asymmetry between companies and their stakeholders. Information asymmetry often occurs when management has access to more comprehensive information than investors or the public, potentially creating uncertainty in decision-making. Through an integrated digital reporting system, companies are able to convey ESG information more quickly, transparently, and easily accessed. The use of digital dashboards, online reporting portals, and cloud-based reporting platforms allows for regular sustainability information updates, providing stakeholders with more up-to-date data. This transparency reduces the information gap, which has historically been a contributing factor to low trust in sustainability reports. The lower the level of information asymmetry, the higher the market efficiency, as investment decisions can be based on more complete and quality information (Lulaj & Brajković, 2025).

The improved quality of ESG disclosures generated through digital accounting transformation ultimately has a positive impact on increasing investor and stakeholder confidence. Modern investors no longer consider solely financial indicators when evaluating a company's prospects, but also consider the organization's commitment to environmental management, social responsibility, and good governance. Reliable, relevant, transparent, and easily verifiable ESG information will increase investor confidence in a company's ability to effectively manage sustainability risks. This trust can strengthen a company's reputation, increase investment attractiveness, expand access to funding sources, and strengthen relationships with customers, suppliers, regulators, and the public. Thus, digital accounting transformation indirectly contributes to increasing company value by strengthening its legitimacy and sustainability reputation.

Furthermore, digital accounting transformation supports more effective decision-making processes at both operational and strategic levels. The availability of accurate, real-time ESG information enables management to continuously evaluate the achievement of sustainability targets. This information can be used to identify areas for improvement, allocate resources more efficiently, manage environmental and social risks, and formulate business strategies aligned with sustainable development principles. Externally, investors, regulators, financial institutions, and other stakeholders gain a stronger information basis for assessing a company's prospects, investment risk levels, and compliance with applicable ESG standards. Improved information quality will result in more rational decisions oriented toward long-term value creation (Lodhia et al., 2025b).

Challenges and Strategies for Optimizing Digital Accounting Transformation to Support Sustainability Reporting

One of the main challenges in implementing digital accounting transformation is organizational readiness to address changing business processes. Many companies still operate fragmented accounting systems, resulting in separate management of financial and sustainability data. This situation hinders the integration of information necessary for preparing sustainability reporting and comprehensive ESG disclosures (Nicola-Gavrilă et al., 2025). Furthermore, an organizational culture that relies on conventional procedures often creates resistance to the implementation of digital technology. The transition to a digital

DOI: https://doi.org/10.47353/bj.v6i4.719

system requires adjustments to organizational structures, updates to operational procedures, and management commitment to building a work culture that is more adaptive to innovation. Without adequate organizational readiness, technology investments risk not delivering optimal benefits because they are not accompanied by changes in business processes that support the creation of an integrated reporting system.

Human resource competency is also a crucial factor in determining the success of digital accounting transformation. Technological advancements have meant that the accounting profession no longer focuses solely on preparing financial reports, but also demands the ability to manage digital data, utilize analytical tools, understand accounting information systems, and interpret sustainability indicators (Naveed et al., 2026). Furthermore, a digital competency gap persists across organizations, particularly in understanding the use of blockchain, artificial intelligence, and big data analytics in reporting. These limitations can reduce the effectiveness of technology utilization and increase the risk of errors in ESG data processing (Tariq & Rahim, 2024). Therefore, organizations need to develop ongoing training programs to improve digital literacy, analytical competency, and understanding of sustainability reporting standards. Developing human resource capacity is a long-term investment that enables effective digital transformation and produces quality information.

The next challenge relates to data governance, which is the foundation of digital reporting systems. Sustainability reporting requires data from various organizational functions, such as production, operations, finance, human resources, supply chain, and environmental management (Asare & NULL, 2026b). The diversity of data sources increases the complexity of the integration process and information quality control. Without good data governance, companies risk producing inconsistent, incomplete, or difficult-to-verify information. Furthermore, the lack of internal standards for ESG data management can lead to differing interpretations across work units, impacting the reliability of disclosures. Therefore, organizations need to establish a data governance framework that encompasses data quality standards, validation mechanisms, documentation of information sources, and an internal control system capable of ensuring information integrity from the collection process to the presentation of reports.

Cybersecurity is becoming an increasingly important challenge with the increasing digitization of sustainability accounting and reporting systems. The integration of various digital technologies means companies manage vast amounts of data stored on interconnected digital platforms. This situation increases the risk of data leaks, cyberattacks, information manipulation, and disruption to operational systems. These threats not only result in financial losses but can also undermine the credibility of sustainability reporting and reduce investor confidence in the company (Mititean et al., 2026b). Therefore, the implementation of digital accounting transformation must be accompanied by strengthening information security systems through the implementation of data encryption, multi-layered authentication, continuous monitoring of system activity, and the development of comprehensive cyber risk management policies. Information security is a crucial prerequisite for ensuring that ESG data remains protected, accurate, and accountable.

Beyond technical aspects, technology investment also poses a significant challenge, especially for companies with limited resource capacity. Implementing digital systems requires costs that include software procurement, information technology infrastructure, system integration, maintenance, and human resource competency development. The large investment requirements often cause companies to delay the digital transformation process or adopt technology gradually. However, digital transformation should be viewed as a long-term strategic investment capable of increasing operational efficiency, improving reporting quality, reducing administrative costs, and strengthening company competitiveness. Considering these long-term

DOI: https://doi.org/10.47353/bj.v6i4.719

benefits, organizations need to develop targeted investment plans tailored to the needs and level of digital maturity of each company (Mayegun & Nwanevu, 2025).

Regulatory dynamics also pose a challenge impacting the implementation of digital accounting transformation to support sustainability reporting. The development of ESG and sustainability reporting standards is occurring rapidly in line with increasing global attention to sustainability issues. Companies are required to continuously adapt their reporting systems to changing regulations, international standards, and national policies related to sustainability transparency and accountability. These changes require flexible digital systems to accommodate updates to indicators, measurement methodologies, and information disclosure requirements efficiently. Organizations that fail to adapt to regulatory dynamics potentially face the risk of non-compliance, which can impact their reputation and stakeholder trust (Valentinetti & Rea, 2024).

To address these challenges, a strategy to optimize digital accounting transformation must begin with strengthening corporate governance that supports sustainable technology implementation. Good corporate governance creates oversight, accountability, and coordination mechanisms that ensure that digital transformation aligns with the organization's strategic objectives. Top management commitment is crucial for integrating digital transformation into corporate policies, including the development of sustainability strategies. Visionary leadership can drive organizational culture change, strengthen cross-functional collaboration, and ensure that technology utilization is consistently geared toward improving the quality of sustainability information and creating long-term value for all stakeholders (Al-Hattami, 2026).

The next strategy is to integrate digital technology with the company's sustainability strategy so that the transformation process is not only oriented towards operational efficiency but also supports the achievement of comprehensive ESG targets. This integration allows sustainability data to be collected automatically, analyzed in real time, and used as a basis for evaluating organizational performance. The use of digital dashboards, predictive analytics, and integrated reporting systems provides management with the ability to continuously monitor the development of sustainability indicators and take corrective action when necessary (Olsen, 2023b). Thus, digital technology functions as a tool for strategic decision-making in addition to reporting supports improving the company's sustainability performance.

Optimizing digital transformation also requires enhancing the organization's digital capabilities through developing human resource competencies, establishing a culture of innovation, and enhancing data literacy at all levels of the organization. Continuous training programs, professional certifications, and cross-disciplinary learning are essential steps to developing a workforce capable of optimally utilizing digital technology. Furthermore, organizations need to encourage collaboration between accounting professionals, information technology experts, data analysts, and sustainability practitioners to ensure a more comprehensive ESG information management process. This collaborative approach will strengthen the quality of analysis, increase data management efficiency, and produce sustainability reporting that is more relevant and valuable for information users (Thanasas et al., 2026).

More broadly, the success of digital accounting transformation also depends on close collaboration between regulators, companies, auditors, professional bodies, technology providers, academics, and other stakeholders. Regulators play a crucial role in developing reporting standards that adapt to technological developments while providing legal certainty regarding the implementation of digital reporting. Auditors contribute to ensuring the quality, integrity, and verifiability of ESG information through a technology-based audit approach. Meanwhile, educational institutions and professional organizations play a role in producing

DOI: https://doi.org/10.47353/bj.v6i4.719

human resources with digital competencies and a sound understanding of sustainability. This synergy between stakeholders will create a digital transformation ecosystem capable of supporting the preparation of sustainability reporting and ESG disclosures that are increasingly transparent, accountable, and trustworthy, and oriented towards corporate value creation and long-term sustainable development (Rahayu & Masyhuri, 2026).

CONCLUSION

Based on the literature review, digital accounting transformation has proven to be a crucial element in improving the standard of environmental, social, and governance (ESG) disclosure and sustainability reporting. The incorporation of multiple digital technologies, including blockchain, cloud accounting, artificial intelligence, and big data analytics, and integrated reporting systems, can support more accurate, transparent, timely, and verifiable sustainability data management. The literature synthesis also shows that digital accounting transformation not only increases the efficiency of the reporting process but also strengthens the quality of ESG disclosure by providing more reliable, relevant, consistent, and comparable information. This contributes to increased investor and stakeholder confidence, reduces information asymmetry, and supports decision-making oriented toward corporate value creation and long-term sustainability.

On the other hand, the effectiveness of digital accounting transformation in supporting sustainability reporting is still influenced by various challenges, including organizational readiness, human resource competency, data governance, cybersecurity, technology investment, and the dynamics of rules and guidelines for sustainability reporting. In order to maximize the quality of ESG disclosure and sustainability reporting, digital technological innovation, the application of sound corporate governance, enhanced organizational capabilities, and a dedication to sustainability strategies must work in concert. This study effectively provides a thorough conceptual synthesis of the connection between digital accounting transition and the caliber of sustainability reporting and ESG disclosure using a literature review methodology. In the age of digital transformation, the results of this study are anticipated to serve as a basis for additional empirical research and as a guide for businesses, regulators, and stakeholders in creating a more flexible, transparent, accountable, and sustainable sustainability reporting system.

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