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UNCOVERING THE POTENTIAL OF SUSTAINABILITY: OPPORTUNITIES AND CHALLENGES IN APPLYING GREEN ACCOUNTING FOR NATURAL ENVIRONMENTAL SUSTAINABILITY IN COMPANIES

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Abstract: Green accounting is becoming increasingly important in today's business context for nature conservation purposes, where sustainability is becoming a major focus in resource management and company operations. This research aims to explore the potential for sustainability that can be realised through the application of green accounting in the corporate environment. This research uses a qualitative approach with descriptive methods. The research results show that implementing green accounting to preserve the natural environment in companies requires attention to several key factors that influence operational sustainability. Full commitment from top management is the main basis for integrating sustainability principles into the company's overall strategy, including preserving the natural environment. Employee awareness and understanding, supporting technology, compliance with environmental regulations, supplier involvement, consistent natural environmental sustainability and reporting transparency are important elements for the successful implementation of environmentally friendly accounting. These steps open up strategic opportunities, such as cost efficiency, energy savings, and attracting consumers who are conscious of environmental conservation. Although faced with the challenges with regard to the complexity of measuring and reporting the environmental impacts, implementation costs, and resource limitations, efforts to overcome them can bring long-term benefits, such as improved reputation, business sustainability, and positive contributions to the preservation of the natural environment. Therefore, companies need to take strategic steps to overcome these challenges, strengthen their commitment to sustainable practices, and make environmentally friendly accounting an integral part of the company's sustainability vision.

Keywords: Green accounting, sustainability, natural environment, accounting.

Introduction

Recently, countries that are members of the United Nations (UN) have been taking serious steps to implement "green" concepts in various sectors, especially the industrial, economic and financial sectors (Makmun, 2016). This effort is a response to urgent demands to address the impacts of climate change and maintain environmental sustainability. This green concept espouses a sustainable and environmentally friendly approach in every aspect of people's lives (Hari Kristianto, 2020).

As one of the driving forces of a country's economy, the industrial sector is the main focus of green concept implementation. UN member countries are committed to introducing environmentally friendly technologies, increasing energy efficiency, and reducing the carbon footprint of industrial processes (Lako, 2015). These steps are expected to promote sustainable economic growth and engage economic actors in environmentally responsible business practices. Additionally, in the financial sector, the emerging trend of green investment and the development of financial instruments that support environmentally friendly projects creates incentives for companies to transition to more ecologically sustainable business models (Antasari, 2020).

The financial industry also recognises the importance of paying attention to the green concept not only in operational aspects but also in the process of recording and bookkeeping financial reports (Wiranti, 2023). The green concept includes efforts to reduce the environmental impact of human activities and its implementation in financial records can reflect a company's commitment to social and environmental responsibility. This involves integrating environmental principles in measuring and reporting financial performance such as calculating the carbon footprint produced by the company's operational activities (Putri *et al*., 2023).

The importance of paying attention to the green concept in financial recording is also reflected in the emphasis on transparency and accountability. Financial reports that include information related to environmental impact provide stakeholders, including investors and consumers, with a clearer picture of a company's commitment to sustainability (Putri *et al*., 2023). In addition, the financial industry can play an important role in supporting environmentally friendly projects by directing investment to sectors that support sustainable development (Utami & Nuraini, 2020).

Green accounting emerged as a concrete response from accounting science to the need to take into account the environmental impact of economic activities (Hamidi, 2019). In this context, the field of accounting not only focuses on conventional financial recording but also considers environmental values and the social impact of company activities (Astuti, 2012). This concept includes measuring and reporting aspects such as carbon emissions, use of natural resources, and the waste produced. Green accounting plays a key role in clearly and transparently describing how business activities can impact the environment (Deswanto, 2022).

The existence of company activities that can damage the environment such as deforestation and industrial waste disposal, strengthens the urgency of implementing the green accounting concept (Astuti & Susilo, 2014). By including environmental cost elements in company activities, companies can more clearly see the financial consequences of practices that are detrimental to the environment. This also provides incentives for companies to adopt more sustainable and environmentally friendly business practices, in line with global efforts to protect ecosystems (Putri *et al*., 2021). Through green accounting, the accounting field makes an important contribution in directing companies towards more environmental responsibility while maintaining focus on the main goal of economic activity, i.e., making a profit, but not at the expense of the environment (Angelina & Nursasi, 2021).

Green accounting is an innovative approach in the world of accounting that focuses on integrating environmental cost factors into company activities (Damayanti & Widyowati, 2022). The main goal of green accounting is to provide a comprehensive picture of efforts to protect the environment by combining environmental benefits and costs arising from a company's economic decisions. Through green accounting, companies can better understand the environmental impact of their operational activities and ensure that the economic decisions taken do not only take into account the financial aspects but the environmental aspects as well (Risal *et al*., 2020).

The green accounting concept not only focuses on recording costs associated with business practices that damage the environment but also involves measuring the positive benefits generated by environmentally friendly business practices (Azzahra *et al*., 2022). Thus, green accounting helps identify the relationship between costs and benefits through environmental conservation efforts. Its emphasis on finding a balance between economic benefits and environmental impacts provides a strong foundation for supporting sustainable development, especially in facing climate change challenges (Renaldo *et al*., 2022).

Furthermore, green accounting can be an effective tool in supporting global initiatives to address climate change (Pertiwi *et al*., 2023).

By providing a structured framework, green accounting enables companies to systematically identify, measure and report their contribution to supporting climate change-related sustainable development goals. Through the implementation of green accounting, companies can play a more proactive role in realising a green and sustainable economy (Wiguna *et al*., 2023).

Environmental conservation is one of the important principles of sustainability, which ensures that efforts to meet our needs do not compromise the quality of the environment, and ecosystems must be preserved for future generations (Feroz *et al*., 2021). In the Industry 4.0 era, business needs are not just focused on owners and management, but on all parties such as consumers, employees, communities, and the environment (Dwicahyanti & Priono, 2021).

The importance of environmental accounting basically requires comprehensive knowledge of companies and other organisations that have benefited from the environment. The success of environmental accounting does not only depend on the accuracy of the classification of all costs incurred by the company but also on the ability and accuracy of the company's accounting data to minimise the environmental impact caused by its activities (Yanti *et al*., 2021).

This research aims to reveal the potential for sustainability in the context of implementing green accounting in companies, with a focus on identifying key factors that influence sustainability and analysing strategic opportunities that arise from the implementation of green accounting. This research aims to provide a significant contribution to the practical and theoretical understanding of the challenges and opportunities faced by companies in adopting green accounting. The benefits of this research involve providing in-depth insights for companies related to developing sustainability strategies through green accounting, which can help improve their economic, social and environmental performance, in line with global demands for sustainable business practices.

Materials and Methods

This research uses a qualitative descriptive method to describe, analyse and construct the meaning about existing phenomena. Anggito and Setiawan (2018) stated that qualitative research is carried out in real-life settings to investigate and understand phenomena, aiming to find out what happened, why it happened, and how it happened. The descriptive approach is defined as a way of solving problems by presenting a picture of the current state of the subject or object of research, such as individuals, institutions, groups and society based on visible facts (Noor, 2011). Sugiyono (2011) explains that the descriptive method is a way to research the status of a human group, object, condition, system of thought, or class of events in the present. This descriptive research aims to create a systematic, factual and accurate description, picture or painting of the facts, properties and relationships between the phenomena being investigated. The data collection technique uses library resources, studying the available literature from books, magazines, journals and previous research reports. By conducting a literature review, researchers can obtain information on useful research techniques. The literature review will also help this study avoid duplication.

Results and Discussion

Factors that Influence Sustainability in the Implementation of Green Accounting

The application of green accounting in company operations brings various benefits, especially in reducing operational costs and increasing profits. By identifying and managing aspects that have a negative impact on the environment, companies can reduce the use of natural resources and energy, resulting in long-term cost efficiency (Adi Cakranegara, 2021). This not only helps increase profit margins by reducing production costs but also attracts increasingly environmentally conscious customers, expands market shares, and creates a positive company image in the eyes of clients, customers and other stakeholders (Radiansyah *et al*., 2023). Therefore, incorporating green accounting is not just about environmental sustainability but is also a strategic move that can improve a company's efficiency, profits, and reputation in a market that increasingly prioritises sustainable business practices.

The implementation of green accounting involves several factors that influence sustainability in the corporate context. Some of the main factors to consider are as below.

Management Commitment

Full support and commitment from the company's top management is the main foundation for sustainability in the implementation of green accounting. Company management that dedicates resources, including time, finances, and labour to promote sustainability principles, sends a strong signal that the effort is being taken seriously. Top management plays a role in designing policies and strategies that lead to the integration of green accounting in all company processes. Additionally, they also serve as role models, motivating other employees and departments to actively participate in sustainable measures.

Company leadership and top management also play a role in building a culture at the organisation that supports sustainability. They can ensure that sustainability values are reflected at every level of the company, by promoting a proactive attitude towards environmental challenges. This full commitment is also needed to overcome obstacles and resistance that may arise when implementing green accounting processes. Therefore, it is critical for company management to establish a strong foundation and develop an internal ecosystem that supports and maintains sustainability and green accounting practices. With strong support from top management, companies can accelerate their transformation towards more sustainable and environmentally responsible operations (Vivi Kumalasari Subroto & Eni Endaryati, 2022).

Employee Awareness

Involvement and deep understanding of employees regarding sustainability principles and the relevance of green accounting are determining factors for successful implementation. Employees who have a good understanding of the environmental impact of a company's operational activities and sustainability values can become a driving force for change. Involving employees in these initiatives can also increase their sense of ownership and responsibility for sustainable practices. Therefore, companies need to ensure that training is one of the key elements of their green accounting introduction strategy. This training not only includes a technical understanding of green accounting but also explores the values of sustainability and provides insight into the positive impacts that can be achieved through their active participation (Sari & Hadiprajitno, 2013).

Apart from training, effective communication is another key component in building internal awareness and acceptance of changes towards green accounting. Transparent and open communication regarding the company's sustainability goals, expected benefits, and how each employee can contribute, can form positive perceptions. By providing clear and relevant information, companies can stimulate employees' interest in being actively involved and understanding their role in realising sustainability principles. Thus, an employee's understanding and involvement are not only as recipients of policies but also as agents of change who play a role in building a company culture that focuses on sustainability and social responsibility.

Technology and Infrastructure

Corporate sustainability is often closely linked to the shift towards more environmentally friendly technology and infrastructure. For example, adopting renewable energy technologies or more efficient production equipment can help reduce a company's environmental impact and carbon footprint. Infrastructure updates that prioritise efficiency in resource use can also make a significant contribution to sustainability principles. However, this transition is not only about environmental aspects but is also related to efficiency and economy. Investments in green technology and supporting infrastructure are not only a company's ethical responsibility, but also a strategic decision that can influence the successful implementation of green accounting.

The role of technology in green accounting is not only to improve operational efficiency but also to provide a reporting system that can monitor and measure a company's environmental impact. By using sophisticated software and systems, companies can accurately track their energy consumption, waste management, and carbon footprint. Investment in information technology that can thoroughly integrate green accounting processes can provide accurate and transparent data, making it easier for companies to report sustainability (Yuliana & Sulistyawati, 2021). Thus, the success of green accounting implementation often depends on the extent to which companies can utilise supporting technology and infrastructure while creating a more sustainable operational environment.

Compliance and Regulation

Companies need to have a deep understanding of applicable environmental rules and regulations and ensure full compliance with these standards. Adapting business practices to legal and environmental requirements is a crucial step in supporting sustainability and implementing green accounting. These regulations cover various aspects such as greenhouse gas emissions, waste management, and the use of natural resources. Through a careful understanding of these regulations, companies can identify areas that require improvement.

Moreover, compliance with environmental standards and regulations is not just a legal obligation but can also help companies create a solid foundation for the implementation of green accounting. By understanding and following applicable regulations, companies can build a reputation as a responsible entity and prioritise sustainability. This compliance can also involve companies in business networks that focus on sustainable practices, opening up opportunities for mutually beneficial collaboration and partnerships (Herlindawati *et al*., 2022). Therefore, in-depth understanding and compliance with environmental regulations is not only an effort to comply with the law but is also a strategic step that can lead to the development and strengthening of the implementation of green accounting as an integral part of company operations.

Partnerships and Supplier Engagement

Good relationships with suppliers have a significant positive impact on company sustainability, especially in the context of implementing green accounting. Collaboration with suppliers with sustainable business practices can be a valuable asset in building a greener supply chain. When companies choose suppliers who have sustainable practices, it creates a profitable domino effect, helping to push sustainable practices wider within the industry. By engaging in sustainable partnerships, companies can leverage their influence to motivate their suppliers to adopt greener practices and contribute to overall green accounting initiatives.

In addition, collaboration with suppliers who are committed to sustainability can help companies integrate green accounting into their supply chains more effectively. Suppliers who understand and support a company's sustainability efforts can collaborate on environmental impact reporting and measurement. This can involve exchanging data on carbon footprints, raw material use, or waste management practices, all of which are important elements in green accounting (Herlindawati *et al*., 2022). By strengthening these relationships, companies can not only increase transparency in their supply chains but also receive active support to achieve sustainability goals. Therefore, close collaboration with sustainable suppliers is not only an ethical necessity but also a smart business strategy to encourage the implementation of green accounting throughout the company's operational ecosystem.

Transparency and Reporting

Increasing transparency and reporting regarding sustainability practices is key to building trust and accountability among corporate stakeholders. In an era where society is increasingly aware of environmental issues, companies must be willing to open up and provide clear information on the environmental impact of their operations (Ernawati & Ulfani A, 2023). This not only includes disclosures related to greenhouse gas emissions or the use of natural resources but involves other aspects such as social sustainability and corporate responsibility. By providing transparent reports, companies can demonstrate they are serious about achieving sustainability goals and provide stakeholders, including consumers, investors and local communities, with the information they need to make sustainable decisions.

Companies need to have the ability to accurately monitor, measure and report the environmental impact of their operational activities. This involves the use of technology and information systems that enable timely data collection and analysis. Through careful measurements, companies can identify areas that require innovation or improvement. Furthermore, the resulting reports are not only a tool for meeting regulatory requirements, but also a powerful communication tool for building positive relationships with stakeholders. By creating transparency and effective reporting, companies not only demonstrate their accountability for sustainability practices but open the door to closer collaboration with stakeholders, strengthening their position as a sustainable business.

Strategic Opportunities Emerging from the Implementation of Green Accounting

The implementation of green accounting by companies opens up several opportunities that can provide long-term benefits. Some of these opportunities involve aspects of sustainability, operational efficiency, and competitive advantage. The following are opportunities for companies to implement green accounting practices.

Cost Efficiency and Energy Savings

Green accounting provides companies with an effective tool to understand and mitigate the environmental impact of their operational activities while opening up significant opportunities to reduce operational costs. Through green accounting analysis, companies can more accurately identify areas that require improvement or innovation in terms of efficiency. For example, by monitoring and analysing energy consumption and greenhouse gas emissions, companies can identify potential energy efficiency improvements that can lead to substantial cost savings.

In addition, green accounting also allows companies to manage and track resource usage more efficiently. Implementing more efficient technology and processes can include using less raw materials, reducing production waste, and optimising the supply chain. By understanding the environmental impact of each operational step, companies can adopt proactive measures to increase efficiency and reduce production costs. This not only provides economic benefits in the short term but also creates a strong foundation for long-term sustainability, where lower operational costs can support the continued growth of the company as a whole. As a result, green accounting is not just about fulfilling environmental obligations but is also a smart strategy for formulating more efficient and economical operational practices.

Access to New Markets and Customers

The trend of increasing environmental awareness among consumers has made sustainability principles a determining factor in purchasing decisions. In this context, the adoption of green accounting by companies provides a significant opportunity to attract the attention and gain the trust of consumers who are increasingly concerned about the environmental impact of the products and services they purchase. Modern consumers identify products and brands that maintain a commitment to sustainability as more environmentally beneficial choices. Therefore, companies that adopt green accounting practices can create added value in their marketing strategies, highlighting sustainability as a strong competitive advantage.

In addition, the application of green accounting not only accommodates the preferences of consumers who are increasingly environmentally conscious but also opens the door to entering new, rapidly growing markets. Consumers who place importance on sustainability principles tend to seek out and support companies that actively contribute to environmental protection. By compiling and submitting transparent sustainability reports, companies can build a positive image and expand their market share to a wider customer segment. In other words, green accounting not only serves as a response to current consumer demands but also as a growth strategy that allows companies to access new market opportunities that are increasingly influenced by sustainability values.

Resistance to Regulation

The implementation of green accounting paves the way for companies to adapt to increasingly stringent environmental rules and regulations. By having an accounting system designed to record and track activities that impact the environment, companies can more easily monitor and comply with environmental standards imposed by governments and regulatory bodies. This is becoming progressively more important given the increasing global awareness of environmental issues and pressure to achieve sustainability targets. With green accounting, companies can integrate procedures and practices that comply with the latest regulations, creating a solid basis for ongoing compliance.

Apart from ensuring compliance with regulations, implementing green accounting also functions as protection against legal risks and sanctions that may arise due to violations of environmental regulations. An effectively integrated accounting system can help companies identify potential violations early, allowing them to take corrective action before the problem becomes serious. In this manner, companies can reduce the risk of lawsuits, financial sanctions or reputational harm. Therefore, implementing green accounting is not only a step towards sustainability but also a wise strategy to minimise the risk of non-compliance with ever more stringent environmental regulations.

Better Supplier Relationships

Implementing green accounting opens up opportunities for close collaboration with suppliers committed to sustainable practices. Partnerships with suppliers who adhere to sustainability principles can create a more stable and reliable supply chain. By sharing sustainability values, companies and suppliers can together reduce the environmental impact of their operations. This involves selecting suppliers that adhere to sustainability standards in their production processes such as the use of environmentally friendly raw materials or more energy-efficient production practices.

In addition to supporting sustainability, partnerships with sustainable suppliers can also reduce risks in the supply chain. By working with suppliers committed to social and environmental responsibility, companies can identify and address potential risks, such as supply instability or reputation issues. A company’s credibility may also increase because stakeholders will see involvement in such partnerships as evidence of commitment to sustainability. This credibility can help companies build strong relationships with customers, investors, and the community as a whole. Additionally, such partnerships often provide access to more sustainable resources, such as environmentally friendly raw materials or green technologies, which can increase a company’s competitiveness in a market more and more concerned about sustainability issues.

Product and Service Innovation

The focus given to green accounting not only helps companies meet demands for sustainability but is also a key driver for creating more environmentally friendly products and services. By analysing the environmental impact of each stage of production through a green accounting lens, companies can identify innovative opportunities to reduce their carbon footprint, optimise resource use, and integrate sustainability principles into their product designs. Such innovations can include the use of recycled raw materials, the development of more energy-efficient production processes, or even the creation of products that can be easily recycled.

By creating more environmentally friendly products and services, companies can gain a significant competitive advantage in a market that is increasingly concerned with sustainability. Modern consumers are increasingly aware of the environmental impact of their purchases, and products supported by green accounting can appeal to a rapidly growing market segment. Sustainability is not just about meeting regulatory requirements or achieving a positive image; it is also a path to innovation that opens new opportunities. Companies that succeed in creating innovative products and services that meet sustainability standards will not only increase customer appeal but will also be leaders in driving the industry's transformation towards more sustainable practices overall.

Reputation Risk Management

Green accounting is the main basis for companies in managing and mitigating reputation risks, especially in the context of sustainability. By implementing green accounting practices, companies can transparently monitor, measure and report the environmental impact of their operations. Sustainability initiatives supported by green accounting reflect a company's commitment to social and environmental responsibility, creating a strong foundation for building and maintaining a positive reputation.

Positive reporting regarding sustainable practices implemented by a company can make a significant contribution to improving its image and attractiveness in the eyes of consumers and investors. Modern consumers are increasingly choosing products and services from companies committed to sustainability, and positive reporting about sustainability efforts can increase consumer loyalty. On the other hand, investors who focus on sustainability aspects will be more likely to invest in companies that have a positive track record of sustainable practices. Therefore, green accounting is not only a tool for recording and reporting sustainability activities, but also an effective instrument in designing a positive narrative that strengthens a company's reputation and increases its attractiveness in a market that appreciates sustainable business practices.

Access to Sustainable Investments

Companies that prioritise green accounting and commit to sustainable practices have greater appeal to investors focused on sustainable investing. Investors who have this orientation are increasingly realising that sustainability is not only an ethical responsibility but also a business strategy that can provide long-term profits. By adopting green accounting, companies create a transparent and measurable reporting structure regarding the environmental impact of their operations. It provides investors with access to relevant information to assess a company's sustainability risks and opportunities.

The attraction to sustainable investors lies not only in a positive image but also in the potential to raise more funds to support corporate sustainability initiatives. Investors who have a focus on sustainable investing tend to be more careful in choosing entities that are in line with their sustainability values. By demonstrating commitment through green accounting, companies can attract the attention of investors who share their vision of promoting social and environmental responsibility. As a result, companies can leverage this investor interest to access additional funds that can be used to expand and strengthen sustainability initiatives, creating a financial environment that supports sustainable growth and positive change on a larger scale. In this way, green accounting becomes not only a reporting tool but also a catalyst for gaining significant financial support from investors who have a focus on sustainability.

Challenges of Implementing Green Accounting in Companies

Implementing green accounting in companies is not without challenges. Some key challenges that companies may face when adopting green accounting include:

Difficulties in Measurement and Reporting

Measuring environmental impacts within a green accounting framework is often a major challenge for companies. Identifying and measuring carbon footprints, resource use, and other environmental impacts requires consistent and scalable measurement systems. Companies may face difficulties due to the many variables involved and scattered data sources. This process requires collaboration between departments, in-depth knowledge of operational processes, and careful data collection.

Apart from that, reporting green accounting results also poses its challenges. Presenting sustainability information in a relevant and comprehensive format requires the involvement of internal and external stakeholders. Companies must consider the views and needs of various stakeholders such as investors, customers and regulators to ensure sustainability reports have a significant impact. Presenting this information in a way that is easy to understand and meaningful requires good communication efforts and openness in conveying achievements and challenges faced. By addressing the complexities in measurement and reporting, companies can build a solid foundation for implementing effective green accounting practices and making a real contribution to sustainability.

Implementation and Technology Costs

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Reporting green accounting results also poses its own challenges. Presenting sustainability information in a relevant and comprehensive format requires the involvement of internal and external stakeholders. Companies must consider the views and needs of various stakeholders such as investors, customers and regulators to ensure sustainability reports have a significant impact. Presenting this information in a way that is easy to understand and meaningful requires good communication efforts and openness in conveying achievements and challenges faced. By addressing the complexities in measurement and reporting, companies can build a solid foundation for implementing effective green accounting practices and making a real contribution to sustainability.

Limited Resources and Employee Engagement

Implementing green accounting requires active involvement from various departments and levels in the company's organisation. In the context of sustainability, change is not limited to environmental or sustainability departments alone; involves various functions such as production, finance, marketing, and human resource management. This full involvement is necessary to understand the environmental impact of every aspect of a company's operations, from the supply chain to resource utilisation. Interdepartmental coordination is key in ensuring that relevant data is collected accurately, and sustainable practices can be effectively integrated into daily activities.

Challenges arise when companies experience limited human resources, both in terms of the number of personnel and the skills required. The process of implementing green accounting requires deep skills in data analysis, a deep understanding of sustainable practices, and the ability to communicate effectively with various parties. Limited motivation can also be a limiting factor, especially if there is insufficient understanding or awareness across the organisation regarding the long-term benefits of sustainability practices. Therefore, companies need to ensure that sufficient and skilled human resources are available and create an organisational culture that supports the adoption of sustainable practices. This involves training, education and effective communication to motivate and engage all personnel in the company's sustainability journey.

Regulatory and Compliance Complexities

The dynamic regulatory environment in the sustainability sector poses significant challenges for companies adopting green accounting. New regulations and requirements that continue to develop can create uncertainty and complexity in a company's operational environment. As global awareness of environmental issues increases, regulators often respond by introducing new rules or updating existing requirements. A key challenge for companies is to stay aligned with these changes and understand the resulting implications and liabilities.

Changing rules and often confusing requirements require companies to have a green accounting system that is responsive and flexible. Delays or inability to adapt to current regulations can pose serious compliance risks and potentially harm a company's reputation. Therefore, companies need to ensure that they have efficient mechanisms to monitor and implement regulatory changes quickly. This involves working with sustainability experts and legal advisors, as well as investing in information systems that can provide real-time regulatory updates. In doing so, companies can overcome the challenges of a changing regulatory environment and ensure that their green accounting remains aligned with the latest standards.

Difficulty Changing Company Culture

Changing corporate culture towards a sustainability orientation is a major challenge that involves a shift in values, attitudes, and behaviour across the organisation. Cultural change is not just the responsibility of one department or level of management but involves active participation and support from all levels of employees. The main challenge arises because the adoption of green accounting and sustainability practices often conflicts with long-established business practices. Implementing green accounting may require changes in the way companies assess performance, allocate resources, and make strategic decisions.

A successful corporate culture change process requires effective communication and awareness building throughout the organisation. A deep understanding of the long-term benefits of green accounting must be instilled, and employees need to be aware of their critical role in implementing sustainable practices. It is important to build initiatives that support the adoption of a culture of sustainability such as training and coaching to ensure that employees have the necessary knowledge and skills to integrate green practices into their daily work.

Market Uncertainty and Company Value

Some companies may feel concerned that the adoption of green accounting may bring uncertainty related to company value. Sustainability is often considered a long-term investment that may not provide immediately measurable financial results in a short period. Investors and stakeholders can have varying views on the extent to which sustainability practices can impact business value. Some investors may see it as a positive step that could improve the company's reputation and appeal to consumers who are ever more concerned with sustainability. However, others may see it as an additional cost and potential impact on profitability.

These different views can influence stock prices and market perception of the company. Uncertainty regarding the financial impact of green accounting can create volatility in stock markets, especially if investors disagree about the extent to which sustainable practices can provide long-term value. Therefore, companies need to communicate effectively with stakeholders and investors to educate them about the long-term benefits of green accounting. Transparent delivery of information and opening up space for dialogue with investors can help overcome uncertainty and ease concerns regarding the long-term financial impact of sustainability practices. This will help form a more positive perception of the company's value in the long-term.

Dependency on Suppliers and Supply Chains

Corporate sustainability is not only limited to practices within the organisation but is closely linked to the sustainability of supplier and supply chain practices. Suppliers who do not share a similar commitment to sustainability can be a source of significant challenges for companies. The entire supply chain must be in harmony to achieve overall sustainability goals; a mismatch between company practices and supplier practices can hinder overall sustainability efforts.

Challenges arise when some critical suppliers or business partners lack awareness or commitment to sustainability practices. This can create a gap between a company's sustainability goals and practices at the supply chain level. Companies are then faced with an ethical and practical dilemma, where they must consider whether to continue partnering with suppliers who are not aligned with the company's sustainability values or seek suppliers who are more in line with its sustainability goals. Managing the entire supply chain to achieve sustainability requires strong collaboration and open communication with suppliers. Therefore, companies need to develop strategies that cover the entire supply chain, ensuring that suppliers and business partners understand and are willing to contribute to the company's sustainability goals.

Conclusions

To implement green accounting, companies need to pay attention to several key factors that can influence sustainability in their operations. A full commitment from top management is the main foundation, ensuring that sustainability principles are thoroughly integrated into the company's strategy. Employee awareness and understanding, supporting technology and infrastructure, compliance with environmental regulations, supplier involvement, and transparency in reporting are important elements in the successful implementation of green accounting. The application of green accounting opens up various strategic opportunities for companies to support sustainability. By focusing on cost efficiency and energy savings, companies can identify areas of improvement that support long-term economic growth.

In addition, green accounting allows companies to attract the attention of consumers who are increasingly concerned about their environmental impact, opening up opportunities to enter new markets and expand market share. The company's sustainability is also maintained through regulatory resistance, reputation risk management, and access to sustainable investment from investors who focus on social and environmental responsibility.

Green accounting is not only about recording environmental impacts but is also the key to creating added value, increasing competitiveness, and opening up opportunities for innovation in a business era that increasingly appreciates sustainable practices. The implementation of green accounting in companies also brings several challenges involving the complexity of measuring and reporting environmental impacts, implementation and technology costs, limited resources and employee involvement, regulatory and compliance complexities, changes in corporate culture, market uncertainty and company value, as well as dependence on suppliers and supply chain. While these challenges are real, efforts to overcome them can bring significant long-term benefits, including improved reputation, business sustainability, and positive contributions to the environment. Therefore, companies need to take strategic steps to overcome each of these challenges, strengthen their commitment to sustainable practices, and make green accounting an integral part of the company's sustainability vision.

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Conflict of Interest Statement

The authors declare that they have no conflict of interest.

References

Adi Cakranegara, P. (2021). Investasi hijau: Mengintergrasikan faktor enviromental, social dan governance dalam keputusan investasi. *Jurnal Akuntansi, Keuangan dan Manajemen*, *2*(2), 103-114. https://doi.org/10.35912/jakman.v2i2.112

Angelina, M., & Nursasi, E. (2021). Pengaruh penerapan Green Accounting dan kinerja lingkungan terhadap kinerja keuangan perusahaan. *Jurnal Manajemen Dirgantara*, *14*(2).

Anggito, A., & Setiawan, J. (2018). *Metodologi penelitian kualitatif*. Indoneisa: CV Jejak.

Antasari, D. W. (2020). Implementasi Green Economy terhadap pembangunan berkelanjutan di Kota Kediri. *Jurnal Ekonomi Pembangunan STIE Muhammadiyah Palopo*, *5*(2). https://doi.org/10.35906/jep01.v5i2.402

Astuti, N. (2012). Mengenal Green Accounting. *Jurnal Permana. Permana: Jurnal Perpajakan, Manajemen, dan Akuntansi, IV*(1).

Astuti, N., & Susilo, J. (2014). Penyusunan Model Green Accounting untuk perusahaan melalui perhatian, keterlibatan, pelaporan akuntansi lingkungan dan auditnya. *Permana*, *5*(2), 17-32.

Azzahra, D. S., Pratama, B. C., Fakhruddin, I., & Mudjiyanti, R. (2022). Pengaruh penerapan green accounting, karakteristik komite audit, diversitas kebangsaan direksi dan gender direksi terhadap pengungkapan corporate social responsibility di perbankan. *Jurnal Akuntansi dan Pajak*, *22*(2).

Damayanti, S. E., M.Si., E., & Widyowati, A. (2022). Dampak penerapan faktor Green Accounting terhadap profitabilitas perusahaan manufaktur peserta proper yang listing di Bursa Efek Indonesia tahun 2017-2019. *Jurnal Akuntansi dan Bisnis Krisnadwipayana*, *9*(1), 559. https://doi.org/10.35137/jabk.v9i1.639

Deswanto, V. (2022). Literature review: Green Accounting era 4.0 menuju Society 5.0. *Jurnal Riset Akuntansi dan Manajemen Malahayati*, *11*(2), 42-48. https://doi.org/10.33024/jrm.v11i2.7213

Dwicahyanti, R., & Priono, H. (2021). Pengaruh penerapan akuntansi lingkungan dan ukuran perusahaan terhadap profitabilitas serta pengungkapan informasi lingkungan sebagai variabel intervening. *Jurnal Syntax Transformation*, *2*(6), 868-874. https://doi.org/10.46799/jst.v2i6.295

Ernawati & Ulfani, A. (2023). Implementasi teori akuntansi dalam era digital dan transformasi bisnis. *Jurnal Manajemen dan Akuntansi*, *1*(2), 296-301.

Feroz, A. K., Zo, H., & Chiravuri, A. (2021). Digital transformation and environmental sustainability: A review and research agenda. *Sustainability (Switzerland)*, *13*(3), 1-20. https://doi.org/10.3390/su13031530

Hamidi. (2019). Analisis penerapan Green Accounting terhadap kinerja keuangan perusahaan. *Encyclopedia of Corporate Social Responsibility*, *6*(2), 1286-1286.

Hari Kristianto, A. (2020). Sustainable development goals (SDGs) dalam konsep Green Economy untuk pertumbuhan ekonomi berkualitas berbasis ekologi. *Business, Economics and Entrepreneurship*, *2*(1), 27-38. https://doi.org/10.46229/b.e.e..v2i1.134

Herlindawati, D., Kantun, S., Widayani, A., & Tiara, T. (2022). Pemahaman dan kepedulian dalam implementasi Green Accounting oleh UMKM produsen kain batik. *Akuntabel*, *19*(1), 22-32. https://doi.org/10.30872/jakt.v19i1.10792

Lako, A. (2015). *Green Economy: Menghijaukan ekonomi, bisnis, & akuntansi*. Jakarta: Erlangga.

Makmun. (2016). Green Economy: Konsep, impelentasi, dan peran Kementrian Keuangan. *Jurnal Ekonomi dan Pembangunan*, *19*(2), 1-15. https://doi.org/10.14203/JEP.19.2.2011.1-15

Noor, J. (2011). *Metodologi penelitian*. Jakarta: Kencana Prenada Media Group.

Pertiwi, D. M., Handajani, L., & Astuti, W. (2023). The influence of Green Accounting on company sustainability through environmental performance in the consumer goods sector. *Jurnal Akuntansi dan Perpajakan*, *9*(2). https://jurnal.unmer.ac.id/index.php/ap/article/view/10073/pdf

Putri, V. P. S., Suhartini, D., & Widoretno, A. A. (2021). Implementasi Green Accounting berbasis University Social Responsibility (USR). *BALANCE: Economic, Business, Management and Accounting Journal*, *18*(2), 72. https://doi.org/10.30651/blc.v18i2.8384

Putri, Y. A., Sulbahri, R. A., & Kusuma, G. S. M. (2023). Pengaruh strategi Green Marketing terhadap kinerja keuangan dan non-keuangan perusahaan. *Akuntansi dan Manajemen*, *18*(1), 33-50. https://doi.org/10.30630/jam.v18i1.207

Radiansyah, A., Napu, F., Sukma Mulya, K., Martaseli, E., Sofyan, H., Mareta, S., Hendrwan, H., Andini, R., Wulandari, I., Lestari, Verahastuti, C., Hasan, I., Dewi Astuiti, T., & Sofia Atichasari, A. (2023). *Teori & konsep dasar akuntansi di berbagai sektor*. PT. Sonpedia Publishing Indonesia.

Renaldo, N., Suhardjo, Suyono, Putri, I. Y., & Cindy. (2022). Bagaimana cara meningkatkan kinerja lingkungan menggunakan Green Accounting? Perspektif Generasi Z. *Kurs: Jurnal Akuntansi, Kewirausahaan dan Bisnis*, *7*(2), 134-144.

Risal, T., Lubis, N., & Argatha, V. (2020). Implementasi Green Accounting terhadap profitabilitas perusahaan. *Accumulated Journal (Accounting and Management Research Edition)*, *2*(1).

Sari, M. P., & Hadiprajitno, P. B. (2013). Pengawasan impelementasi "Green Accounting" Berbasis University Social Responsibilities (USR) di Universitas Negeri Semarang serta Studi Komparasi Universitas Se-Kota Semarang. *Jurnal Akuntansi & Auditing*, *9*(2), 169-198. https://doi.org/10.14710/jaa.9.2.169-198

Sugiyono, P. (2011). *Metodologi penelitian kuantitatif kualitatif dan R&D*. Alpabeta.

Utami, R. D., & Nuraini, A. (2020). Pengaruh penerapan Green Accounting dan perputaran total aset terhadap profitabilitas. *Jurnal Ilmiah Akuntansi Kesatuan*, *8*(2), 197-206. https://doi.org/10.37641/jiakes.v8i2.378

Vivi Kumalasari Subroto & Eni Endaryati. (2022). Penerapan Green Management System dan Green Accounting Pasca Covid-19 di Indonesia. *JUMBIWIRA: Jurnal Manajemen Bisnis Kewirausahaan*, *1*(1), 17-22. https://doi.org/10.56910/jumbiwira.v1i1.26

Wiguna, M., Sri Indarti, Thamrin & Andreas. (2023). Implementasi Green Accounting dan Women on Board dalam pembangunan berkelanjutan. *Jurnal Akuntansi Keuangan dan Bisnis*, *15*(2), 626-635. https://doi.org/10.35143/jakb.v15i2.5716

Wiranti, B. N. (2023). Analisis penerapan Green Accounting dan dampaknya terhadap laba usaha. *Jurnal Informatika Ekonomi Bisnis*, 943-949. https://doi.org/10.37034/infeb.v5i3.532

Yanti, M. F., Ethika, E., & Minova, A. F. (2021). Persepsi Akuntan Publik dan Akuntan Pendidik terhadap konsep dasar, pengukuran, dan pengungkapan akuntansi lingkungan. *Jurnal Kajian Akuntansi dan Bisnis Terkini*, *2*(2), 302-318.

Yuliana, Y. K., & Sulistyawati, A. I. (2021). Green Accounting: Pemahaman dan kepedulian dalam penerapan (Studi kasus pada Pabrik Kecap Lele di Kabupaten Pati). *Solusi*, *19*(1). https://doi.org/10.26623/slsi.v19i1.2999