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CONVERGENCES BETWEEN ESG AND CIRCULAR ECONOMY: A COMPARATIVE ANALYSIS OF IMPLEMENTATION PRACTICES IN BRAZIL

CONVERGÊNCIAS ENTRE ASG E ECONOMIA CIRCULAR: UMA ANÁLISE COMPARATIVA DAS PRÁTICAS DE IMPLEMENTAÇÃO NO BRASIL

ABSTRACT

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Purpose: The aim of this study is to analyze and compare the stages of implementation of ESG (Environmental, Social, and Governance) practices with the implementation of Circular Economy (CE) practices based on existing guidelines.

Theoretical framework: Climate Change has generated global challenges that demand actions/practices, such as ESG and CE, to mitigate impacts and promote sustainability, balancing environmental preservation and economic development, especially in Brazil due to its challenges in terms of preservation and development.

Methodology/Approach: This article carried out a documentary analysis of sources on ESG and CE practices and recommendations in Brazil. The comparative analysis used the "Guide to ESG Sustainability in Companies" from the Brazilian Stock Exchange (B3) and the CE implementation practices included in the ISO 59000 series and in the guide "Circular Economy in Practice" from the Brazilian National Confederation of Industry.

Findings: The results of this analysis and comparison revealed high convergence between the steps and recommendations of these practices, which highlights the strong complementarity in the implementation of ESG and CE practices, suggesting other issues to be investigated by future research.

Research, practical & social implications: Given the relevant and growing concern with sustainability and the search for more responsible and resilient business models, studies like this can help guide a more sustainable future and even create value for companies and society.

Originality/Value: In addition to being unprecedented, this comparative analysis and the theoretical basis raised original questions for future research related to the theme.

Keywords: Sustainability; ESG Implementation; Circular Economy Guidelines; ISO 59000; Comparative Analysis.

RESUMO

Objetivo: O objetivo deste estudo é analisar e comparar as etapas de implementação das práticas ASG (Ambiental, Social e Governança) com as recomendações para implementação da Economia Circular (EC) com base nas diretrizes existentes.
Referencial Teórico: As mudanças climáticas têm gerado desafios globais que demandam ações/práticas, como as de ASG e EC, para mitigar impactos e promover sustentabilidade, equilibrando a preservação ambiental e o desenvolvimento econômico, especialmente no Brasil pelos seus desafios ante à preservação e desenvolvimento.
Metodologia/Abordagem: O presente artigo realizou uma análise documental sobre as práticas e recomendações do ASG e da EC, elaborando uma tabela comparativa. A análise comparativa utilizou o "Guia de Sustentabilidade ASG nas Empresas" da Bolsa de Valores Brasileira (B3) e as práticas de implementação de EC contidas na série ISO 59000 e no guia "Economia Circular na Prática" da Confederação Nacional da Indústria no Brasil.
Resultados: Os resultados desta análise e comparação revelaram alta convergência entre os passos e as recomendações dessas práticas, o que destaca a forte complementaridade na implementação das práticas ASG e EC, sugerindo outras questões a serem investigadas por pesquisas futuras.
Contribuições, implicações práticas e sociais: Em função da relevante e crescente preocupação com a sustentabilidade e busca por modelos de negócio mais responsáveis e resilientes, estudos como este podem colaborar como guia para um futuro mais sustentável e, inclusive, criação de valor para as empresas e a sociedade.
Originalidade/Valor: Além de inéditas, esta análise comparativa e as bases teóricas trouxeram questões originais, inclusive para futuras pesquisas relacionadas ao tema.
Palavras-chave: Sustentabilidade; Implementação ASG; Economia Circular; ISO 59000; Análise Comparativa.

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1. INTRODUCTION

Climate change represents one of the greatest sustainability challenges nowadays. Global warming, intensified by the greenhouse effect, has caused phenomena such as the melting of glaciers, rising sea levels and increasingly frequent and intense extreme weather events, significantly impacting the ecosystems, economy and society. The main cause of these changes is largely the emission of anthropogenic greenhouse gases (GHG), that is, carbon emissions from human action, mainly from the burning of fossil fuels, industrial activities and deforestation (Monzoni, 2011; Böttcher & Müller, 2015; Das & Jharkharia, 2018; Kumar et al., 2023).

From these activities, the industrial sector is a significant factor because it is a major emitter of GHG. With increasing industrialization and excessive consumption of fossil resources that result increasingly alarming levels, there is high pressure on companies to adopt low-carbon practices and strategies, which are crucial to mitigating these emissions and changes. The need to mitigate such impacts and ensure a sustainable future requires moving towards a low-carbon economy, with the implementation of actions in all sectors, including society (Monzoni, 2011; Lee, 2012; Böttcher & Müller, 2015; Kumar et al., 2023).

In this sense, the Circular Economy (CE), a concept developed around 35 years ago by the British economists David W. Pearce and R. Kerry Turner, is inspired by natural ecosystems (where waste from one process becomes nutrients for another) and, thus, it is a production and consumption model that aims to minimize waste and maximize the use of resources (Pearce & Turner, 1990). In other words, the CE contrasts with the traditional linear model that is based on extracting, transforming, using and discarding, which generates a large amount of waste and pollution (Fiorini & Seles, 2021; Barros et al., 2024).

In order to address sustainable issues in the market, in 2004 the term ESG emerged, with the publication "Who cares wins: connecting financial markets to a changing world" by the United Nations. The purpose of this was to provide guidelines and recommendations for companies on how to effectively integrate environmental (E), social (S) and corporate governance (G) issues in asset management, securities brokerage services and associated research functions (United Nations, 2004).

Then, the need and the search to reduce GHG emissions from production processes and throughout the supply chain by adopting a more sustainable model have become a strategic imperative for companies, driven both by growing pressure from stakeholders and by the search for competitive advantages (Monzoni, 2011; Lee, 2012; Böttcher & Müller, 2015; Das & Jharkharia, 2018; Jabbour et al., 2021). In Brazil, this is even more critical for companies,

because the challenge is to conciliate the preservation of vast natural resources and the reduction of GHG emissions with the industrial growth that is necessary and economically desired (Monzoni, 2011).

The growing concern with sustainability and the search for more responsible and resilient business models, as evidenced by studies conducted by Monzoni (2011), Das (2023), and Kumar et al. (2023), provides a rationale for investigations that advance scientific knowledge about corporate sustainability, environmental management, sustainable economic development, public policies and regulations, and other related areas. This, in turn, can inform and strengthen models that guide companies towards a more sustainable future. In this context, the present study seeks to address the following questions: a. "What are the main convergences and divergences between the ESG and CE implementation processes and practices for Brazilian companies to promote sustainability?"; and b. "Is it possible to integrate the sustainability's pursuit in the ESG and the transition to circular models in CE?".

In order to respond to these questions, a documentary and comparative analysis (of grey literature) has been designed with the following objectives: to present the convergences, divergences and complementarities between the stages of ESG implementation (the steps described by the Brazil Stock Exchange - B3) and CE implementation practices (the recommendations of the National Confederation of Industry and the ISO 59000 Standardization series); and identify if there is a possibility of integrate the ESG and CE implementing practices of these Brazilian guides and standardization. This, in addition to promoting a more sustainable future, could leverage value generation for companies and society.

The following sections are presented: in the sequence, the theoretical basis of the study is presented; next, the methodology is explained; finally, the results and discussion achieved with this analysis are exposed. At the end, without the pretension of exhausting the subject, it is expected that readers understand the relationship between these two practices and the joint implementation of effective practices in Brazilian companies, including for the continuity of research and discussions about the subject.

2. LITERATURE REVIEW

This section presents the theoretical foundations upon which this comparative analysis between ESG and CE is based.

2.1 ESG and the "14 Steps Towards Sustainability" presented to companies in Brazil

The ESG (Environmental, Social and Governance) agenda is a growing trend in the

financial market, driven by awareness of climate change and pressure to address sustainability challenges. The main dimensions of the ESG that companies must consider to build a more sustainable future and create long-term value are composed of the three pillars of the acronym:

- Environmental: refers to the management of natural resources, GHG emissions, impacts on biodiversity, climate change and other aspects related to the environment.
- Social: covers issues such as human rights, labor relations, diversity and inclusion, health and safety, community engagement and the social impact of operations.
- Governance (corporate governance): involves the structure and processes of company management, including the composition of the board of directors, business ethics, transparency, accountability and risk management. (Brazil Stock Exchange [B3], 2022; Grael et al., 2023; Bezerra et al., 2024).

ESG has become an asset management approach in which, in addition to financial performance, financial investment decisions have begun to explicitly consider the relevance of responsibility and commitment to sustainability in companies' operations and strategies. These are called responsible investments, which promote the ESG agenda via the capital markets, given that they influence companies to adopt more responsible, resilient and aligned practices with a sustainable future (B3, 2022).

In Brazil and starting with the Rio-92 Conference, the popularization of the concept of sustainable development and the growing importance attributed to this concept by the private sector, the B3 decided to help companies incorporate sustainability into their businesses and, thus, generate economic, social and environmental values (B3, 2022), starting in 2011, with the 1st edition of a guide that has been evolving into a 2nd edition in 2016 and, respectively, in the last available edition in 2022, the “Sustainability and ESG management guide in companies: how to start, who to involve and what to prioritize”. This guide, in interdependent/complementary stages that can be adapted to the reality of each company to build a robust sustainability agenda, presents the following steps: “1. Engage the company's senior leadership; 2. Establish sustainability governance; 3. Develop a sustainability policy; 4. Engage stakeholders; 5. Understand the context of your organization; 6. Establish your priorities and sustainability strategy; 7. Define indicators and metrics for prioritized topics; 8. Set goals; 9. Review your organizational policies and processes; 10. Manage your value chain; 11. Adopt a private social investment agenda; 12. Disseminate the new culture in the company; 13. Make public commitments; and 14. Report your results and challenges” (B3, 2022, p. 24).

For companies that want to incorporate sustainability and ESG factors into their

management, the B3 guide highlights the following opportunities and benefits: revenue growth and market expansion; cost reduction and operational efficiency; improvement of human and social capital; risk mitigation; anticipation of regulatory demands and governance's improvement; and strengthening of reputation and intangible value. In other words, the adoption of a robust ESG agenda, in addition to making them agents of transformation for the construction of a more sustainable future, contributes to the company's longevity, reducing risks and increasing their competitiveness and value in the long term (B3, 2022).

On the other hand, in order to incorporate the ESG agenda, companies must overcome several challenges identified by B3, which are: engaging senior leadership in cultural change to signal the importance of this agenda; defining and managing materiality to identify and align with social and market demands; measuring and reporting ESG performance through clear and objective indicators and targets to measure progress and demonstrate transparency; engaging the value chain in adopting ESG practices to minimize negative socio-environmental impacts of suppliers; integrating sustainability into the corporate culture among stakeholders through training, awareness campaigns and linking ESG targets to remuneration; maintaining transparent communication through sustainability reports and to provide accountability and demonstrate commitment; and monitoring changes in the ESG context to adapt strategies and ensure competitiveness and commitment to sustainability. Companies that can overcome these challenges will be better positioned to ensure longevity, strengthen reputation and contribute to a more sustainable future (B3, 2022).

2.2 CE and its standardization by the ISO 59000 series

The CE is an economic system that uses a systemic approach to maintain a circular flow of resources, recovering, retaining or adding value to them and, thus, contributing to sustainable development (Arana-Landin et al., 2023; National Confederation of Industry [NCI], 2024; ISO, 2024d). By extracting the maximum value from resources while in use, recovering and regenerating ecosystems and consciously recycling and/or disposing of materials at the end of the product's useful life, the CE is a strategic, promising and powerful approach to contain the effects of climate change, to build a more sustainable future and to decarbonize the economy, with benefits for the environment, economy and society (Bonsu, 2020; Fiorini & Seles, 2021; Arana-Landin et al., 2023).

In relation to standardization of the CE, according to the International Organization for Standardization (ISO), the CE emerges as a response to the need to review and improve the way how the natural resources and products are extracted, transformed, used and discarded, seeking

a more efficient, competitive and sustainable production and consumption model (Arana-Landin et al., 2023; NCI, 2024; Zorpas, 2024).

In Brazil, according to the National Confederation of Industry (NCI), the Federation of Industries of the State of Rio de Janeiro (FIRJAN) and the Federation of Industries of the State of São Paulo (FIESP), CE is considered a fundamental strategy for Brazilian industry to face the environmental and sustainability challenges of the 21st century. In light of the aforementioned series of ISO standards, these institutions have developed a comprehensive guide, entitled "Circular Economy in Practice: Implementation Guide According to the ABNT NBR ISO 59000 Series," which offers a detailed overview of the CE and provides guidance on its implementation in companies (NCI, 2024).

However, it is important to note that there is no specific certification process defined, thus, companies will not be certified ISO 59000 (ISO, 2024d). Until now, the standardizing documents in this series aim to assist companies in implementing CE practices (Arana-Landin et al., 2023; ISO, 2024d; Zorpas, 2024), providing a solid basis of principles, guidelines and actions, which can be adapted to each organization (ISO, 2024a; Zorpas, 2024) that seeks to transition its business model and value network from a linear model to a circular model (ISO, 2024b).

To date, the five versions available from ISO in this series are:

- ISO 59004:2024 “Circular economy – vocabulary, principles and guidance for implementation”: is a valuable guide for organizations wishing to follow the CE path (ISO, 2024a).
- ISO 59010:2024 “Circular economy – guidance on transitioning business models and value networks”: is a guide to making the transition to CE strategically, addressing the challenges and opportunities of this change based on understanding the current business model, defining clear goals, developing an action plan and engaging stakeholders, steps that still need to have their transition progress monitored and assessed to ensure the success of CE implementation (ISO, 2024b).
- ISO 59014:2024 “Environmental management and circular economy – sustainability and traceability of secondary materials recovery – principles, requirements and guidance”: provides a comprehensive framework for the sustainable and traceable management of secondary materials recovery and defines principles, requirements and guidance to minimize negative impacts, promote the circularity of resources and ensure fair and safe working conditions (ISO, 2024c).

- ISO 59020:2024 “Circular economy – measuring and assessing circularity performance”: provides a framework for measuring and assessing the circularity of implemented practices, whether they minimize the use of resources, optimize the circular flow and contribute to sustainable development (ISO, 2024d).
- ISO/TR 59032:2024 “Circular economy – review of existing value networks”: is the technical report that recommends analyzing existing value networks, a crucial step in the transition from a linear to a circular model and that allows identifying opportunities for collaboration, material flows, circular business models and the need common infrastructure (ISO, 2024e).

According to the ISO, regardless of the type, size, geographic location or position in the value chain, the standards in this 59000 series are applicable to any organization that wants to commit, collaborate, innovate and constantly adapt with the CE continuous process to achieve sustainability (ISO, 2024a). This process involves implementing CE practices to confront challenges through more sustainable value creation opportunities (ISO, 2024b); minimizing negative impacts, promoting resources circularity and ensuring fair and safe working conditions (ISO, 2024c); measuring and assessing performance to minimize resource use, optimize circular flow and contribute development sustainable (ISO, 2024d); and identifying opportunities off the collaboration, material flows, circular business models and the need common infrastructure to transform its business ecosystem into a value network (ISO, 2024e).

3. METHODOLOGY

For the present article and similarly that carried out by Moraes et al. (2024), a documentary analysis was carried out in the sources listed below, selecting the ESG and CE implementation stages, to compose a comparative table (Table 1).

According to Sá-Silva et al. (2009, p. 5), “[...] documentary research is a procedure that uses methods and techniques to capture, understand and analyze documents of the most varied types”. And, according to Fachin (2006, p. 40), a comparative analysis “consists of investigating things or facts and explaining them according to their similarities and differences. [...], in order to detect what is common to both”.

The selected sources for the documentary analysis and composition of the comparative table are:

- the “Sustainability and ESG management guide in companies: how to start, who to

involve and what to prioritize" from the Brazil Stock Exchange - B3;

- the guide "Circular economy in practice: implementation guide according to the ABNT NBR ISO 59000 series" from the National Confederation of Industry - NCI; and
- ISO 59000 series documents from the International Organization for Standardization – ISO 59004:2024, ISO 59010:2024, ISO 59014:2024 and ISO 59020:2024.

Through the analysis of these documents, the "14 Steps Towards Sustainability" (B3, 2022, pp. 24-50) of the B3 ESG guide were compared with the recommendations/guidelines contained in the CE in Practice guide from NCI and in the four standards of the ISO 59000.

4. RESULTS AND DISCUSSION

Table 1 below compares the 14 steps for ESG implementation (described in the B3 sustainability guide ESG in companies, which emphasizes aspects and the creation of sustainable value for companies) with the recommendations and guidelines for CE implementation (described in the guide "circular economy in practice" from the NCI and in the ISO 59000 series of standards, which focus on principles, definitions, guidelines and requirements for implementation and measurement).

Table 1

Comparison of implementation: ESG/B3 versus CE/NCI/ISO 59000

ESG Steps from the B3 Sustainability Guide	Recommendations/ Guidelines for adoption CE/NCI/ISO 59000	Points of Convergence and Divergence
"**1) Engage the company's senior leadership**:" Fundamental to the success of the sustainability agenda, leadership must be active and promote change (B3, 2022, p. 26).	**Understand the organization's current value creation model and value network** (NCI, 2024; ISO, 2024b): Assess the company's context, including opportunities and risks related to CE. (NCI, 2024; ISO, 2024a; ISO, 2024b).	**Convergence:** Both practices emphasize the importance of leadership commitment for successful implementation. In ESG, senior leadership sets the vision and directs sustainability integration (B3, 2022). In CE, leadership needs to be engaged to direct the transition to circular models, considering the challenges and opportunities of the context in which the company operates (NCI, 2024; ISO, 2024b).
"**2) Establish sustainability governance**:" Creating a structure to ensure that the agenda is integrated across different levels of the organization and permeates decision-making processes (B3, 2022, pp. 27-28).	**Define the CE structure**: Implement governance structures, processes and responsibilities for the CE, including value network management (NCI, 2024; ISO, 2024a; ISO, 2024b).	**Convergence:** The creation of governance structures is crucial for both practices. Sustainability governance in ESG ensures that sustainability aspects are integrated at all levels of the organization (B3, 2022). In CE, governance focuses on structures, processes and responsibilities for implementing circular practices (NCI, 2024; ISO, 2024b).

"**3) Develop a sustainability policy**:" Formalizing the company's commitments, defining management guidelines and facilitating the planning and execution of actions (B3, 2022, p. 29).	**Develop a circular strategy and action plan** (NCI, 2024; ISO, 2024a; ISO, 2024b): Define the CE mission, vision and goals for the company (NCI, 2024; ISO, 2024b).	**Convergence:** The definition of clear policies and strategies is fundamental for both practices. The sustainability policy in ESG formalizes the company's commitments and guidelines (B3, 2022). In CE, the strategy and action plan define the path for the transition, with specifics goals, indicators and actions (NCI, 2024; ISO, 2024a).
"**4) Engage stakeholders**:" Engage internal and external stakeholders, constantly, at corporate and operational level, to identify the company's impacts, define priorities and build a solid sustainability strategy (B3, 2022, p. 30).	**Engage stakeholders and build capacity for action** (NCI, 2024; ISO, 2024a): Integrate the value chain in the transition to CE (NCI, 2024; ISO, 2024b; ISO, 2024c).	**Convergence:** The stakeholder engagement is a pillar for both practices. In ESG, the company seeks to understand the expectations and demands of stakeholders and integrate them into its processes (B3, 2022). In CE, engagement aims to collaborate to implement circular practices throughout the value network (NCI, 2024; ISO, 2024c).
"**5) Understand the context of your organization**:" At the three levels of sustainability (global, national and local themes), sectoral (norms, standards and certifications) and internal (company moment) (B3, 2022, pp. 31-33).	**Assess the context and reference situation**: Map the value chain, its flows, impacts and risks (NCI, 2024; ISO, 2024a; ISO, 2024b). Delimit the scope of the transition to CE (NCI, 2024; ISO, 2024b).	**Convergence:** The context analysis is crucial for the effective implementation of both practices. In ESG, the internal and external context defines the company's material issues, considering the global, sectoral and internal levels (B3, 2022). In CE, context and value chain analysis helps define the scope and strategies for circularity (NCI, 2024; ISO, 2024b).
"**6) Establish your priorities and sustainability strategy**:" Materiality analysis to identify and prioritize the most relevant topics for stakeholders and the business, combining the importance for stakeholders with the impact for the company (B3, 2022, pp. 34-35).	**Develop strategic priorities and an action plan** (NCI, 2024; ISO, 2024a; ISO, 2024b): Prioritize actions and generate ideas (ISO, 2024b). Review the value generation model (NCI, 2024; ISO, 2024b). Assess the viability of actions proposed (NCI, 2024; ISO, 2024b).	**Convergence:** The definition of priorities is essential to direct efforts and resources. In ESG, materiality defines priority topics, using the materiality matrix to combine the importance of the topic for stakeholders with the impact for the company (B3, 2022). In CE, the focus is on identifying the areas of greatest impact and viability for implementing circular practices, considering the value chain analysis and the business model review (NCI, 2024; ISO, 2024b).
"**7) Define indicators and metrics for prioritized topics**:" Manage and monitor sustainability through quantitative and qualitative indicators (B3, 2022, pp. 36-38).	**Measure and assess circularity**: Collect, calculate and compile relevant data and information to determine circularity performance. Define and use key performance indicators (KPIs) to monitor circularity (NCI, 2024; ISO, 2024d)	**Convergence:** Performance measurement is essential to monitor the progress and effectiveness of actions. In ESG, indicators and metrics track material issues, using existing management systems and indicators, as well as new indicators for issues not previously managed (B3, 2022). In CE, the emphasis is on circularity indicators, with a focus on resource utilization and circular flow optimization (NCI, 2024; ISO, 2024d). The ISO 59020 provides guidelines for measuring and assessing circularity, with a focus on minimizing resource use (ISO, 2024d).
"**8) Set goals**:" Clear and objective goals for sustainability indicators demonstrate the company's commitment (B3, 2022, pp.	**Set Circular Economy targets**: Establish clear and measurable targets to quantify the results of implementing circular	**Convergence:** Defining clear and measurable goals is crucial to direct actions and assess progress. In ESG, goals are related to priority issues, considering the competitive context, the possibilities of achievement and stakeholder's expectations (B3,

38-39).	practices (NCI, 2024; ISO, 2024b).	2022). In CE, goals aim to quantify the results of implementing circular practices (NCI, 2024; ISO, 2024b).
"**9) Review your organizational policies and processes**:" Incorporating sustainability requires reviewing and adapting the company's policies and processes (B3, 2022, p. 39).	**Implement Circular Economy actions**: Execute the circular action plan, including existing policies and processes review, and developing new ones, to integrate circular practices (NCI, 2024; ISO, 2024a).	**Convergence:** The integration of ESG and CE sustainability practices into company processes is essential for effective implementation. Reviewing ESG policies and processes ensures the incorporation of aspects, adapting management instruments and processes to reflect the sustainability commitment (B3, 2022). In CE, the execution of the action plan puts into practice the circularity actions (NCI, 2024; ISO, 2024a).
"**10) Manage your value chain**:" Essential to minimize risks and negative impacts, in addition to promoting sustainable practices throughout the life cycle of products and services (B3, 2022, pp. 40-41).	**Favor the transition of value networks towards circularity** (NCI, 2024): Integrate the value chain in the transition towards CE (NCI, 2024; ISO, 2024b; ISO, 2024c).	**Convergence:** The value chain management is a central point to both practices. Supplier management with ESG criteria seeks to minimize negative impacts on the supply chain (B3, 2022). In CE, collaboration with the value chain is essential for implementing circular practices throughout the life cycle of products and services (NCI, 2024; ISO, 2024c). The ISO 59014 provides principles and requirements for sustainability and traceability in the recovery of secondary materials, encouraging the responsible management of recoverable resources (ISO, 2024c).
"**11) Adopt a Private Social Investment agenda**:" Responsibly directing resources towards social, environmental and cultural projects of public interest (B3, 2022, pp. 42-45).	The ISO 59000 series does not directly address the topic of Private Social Investment.	**Divergence:** The B3 guide highlights the importance of Private Social Investment (PSI) as part of the sustainability strategy, with a focus on the structured social actions management (B3, 2022). The ISO 59000 series, in turn, focuses on the CE implementation in the company's processes and value chain, without specifically addressing PSI.
"**12) Disseminate the new culture in the company**:" Training programs, awareness campaigns, themed events and other initiatives to engage employees (B3, 2022, p. 46).	**Raise awareness and develop capacity for action** (NCI, 2024; ISO, 2024a).	**Convergence:** Cultural change is essential to the success of both practices. In ESG, the dissemination of a sustainability culture aims to engage employees and promote behavioral change (B3, 2022). In CE, stakeholder's awareness and training are essential for the effective implementation of circular practices (NCI, 2024; ISO, 2024a).
"**13) Make public commitments**:" The company must engage in pacts and plans that reinforce its sustainability commitments (B3, 2022, pp. 46-48).	**Document and report the circularity performance assessment results**: Communicate the results of the implementation of the CE in a transparent manner (NCI, 2024; ISO, 2024d).	**Convergence:** Transparency and communication are essential to generate trust and demonstrate the company's commitment. In ESG, the company makes public commitments and reports its sustainability results, seeking engagement in public pacts and commitments related to sustainability issues (B3, 2022). In CE, transparent communication of the CE results implementation is essential to engage stakeholders (NCI, 2024; ISO, 2024d).
"**14) Report your results and challenges**:" The transparency in the communication of the sustainability agenda's results and challenges is	**Monitor, review and report**: Monitor key performance indicators (KPIs), report results and continuously review and improve the circular action	**Convergence:** The monitoring, assessment, and reporting of progress are essential for the tracking of developments and the assurance of continuous improvement. In ESG, the company reports its results and challenges in relation to ESG issues, using integrated reports to present economic-

essential to building trust with stakeholders (B3, 2022, pp. 49-50).	plan (NCI, 2024; ISO, 2024a).	financial and ESG results in a unified way (B3, 2022). In CE, monitoring performance indicators, reviewing results and periodic reporting demonstrate the circularity commitment (NCI, 2024; ISO, 2024a).

This comparative analysis reveals several points of convergence and one divergence point between the two practices (ESG and CE implementation). In this way, complementarity is highlighted, and it is possible to infer the importance of integrating both for a more complete and effective approach to corporate sustainability.

Regarding the subjects related in the compared documents, the absolute majority of the 14 steps from the B3 guide to ESG implementation and the recommendations/guidelines of the NCI and ISO 59000 guides converge in this analysis, which are: 1. Leadership commitment to the success of the respective implementation, given that leadership sets the tone for both implementation; 2. Governance Structures for the integration of practices at all organization levels, because the companies need to simultaneously meet business objectives and those of the respective practice; 3. Definition of Policies and Strategies to formalize and align commitments, guidelines, goals, indicators and specific actions; 4. Stakeholder Engagement to align expectations and achieve collaboration among all protagonists of these processes and, thus, enable transformations; 5. Context Analysis for the effective implementation of both practices, because it is necessary to understand the existing risks and opportunities; 6. Definition of Priorities to direct efforts and resources in a strategic way; 7. Performance Measurement to monitor actions' progress and effectiveness in both; 8. Goals Definition to direct actions and assess their progress; 9. Integration of Company Policies and Processes for the implementation effectiveness; 10. Value Chain Management is a central point in both to minimize negative impacts; 12. Cultural Change for the success of both practices according to their audience's awareness; 13. Transparency and Communication to generate trust in the company; and 14. Monitoring, Assessment and Reporting to track progress and ensure continuous improvement.

And, as a divergence, there is only the step "11. Private Social Investment", because, while the B3 guide highlights as important and one of the parts of ESG sustainability the "voluntary transfer of private resources in a planned, monitored and systematic way to public interest social, environmental and cultural projects" (B3, 2022, p. 42), for example, "directing part of the taxes that must be paid to social projects" (B3, 2022, p. 44), the ISO 59000 series and the NCI guide do not address it.

The ISO 59000 standard and the NCI guide both concentrate on the implementation of CE within the processes and value chain of a company. This involves the maximization of

resource value, the increased efficiency of the utilization of materials and energy, the recovery of resources, the transformation of discards into raw materials for new production cycles, the encouragement of the repeated use of resources in different cycles, first in high-value-added applications and then in less demanding ones, and the restoration of degraded ecosystems in order to maintain the capacity to provide essential environmental services (NCI, 2024).

5. CONCLUSION

The implementation of continuous learning and improvement processes, encompassing both ESG and CE, represents a promising strategy for the advancement of a more sustainable corporate, social, and environmental future in Brazil. The integration of these processes, as this analysis suggests, has the potential to enhance the outcomes. The comparative analysis conducted in this study demonstrated a notable alignment between the implementation phases of ESG practices as outlined in the B3 guide and the guidelines for CE implementation as outlined in the NCI guide and the ISO 59000 series of standards. With all the convergences identified, it is suggested that the integration of both practices can be highly beneficial for Brazilian companies, because it will possibly boost corporate sustainability in a comprehensive and effective way.

The complementarity, identified with the convergences between ESG and CE practices that strengthens these strategies, can allow companies to adopt a more complete vision and practice sustainability more fully, considering environmental, social, governance and circularity aspects in an integrated way.

Another beneficial possibility for companies with the ESG and CE practices integration would be the generation of economic, social and environmental value with the potential of resources optimization, cost reduction, reputation improvement, increased attractiveness for investors and contribution to a more sustainable society. The implementation of these practices, in alignment with market expectations and global demands for sustainability, has the potential to enhance the competitive standing of Brazilian companies and facilitate their entry into new markets and investments.

Since this research focuses on analyzing and comparing specific documents (Brazilian guides and standards classified as grey literature), its scope is inherently limited. Moreover, as it does not aim to exhaustively address the topic, future studies could enhance this work by incorporating empirical research or exploring perspectives from different market contexts. Such studies could provide deeper insights into the practical integration of ESG and CE or suggest ways to adapt global models to better suit the Brazilian reality.

Future research on this topic could focus on several key areas: conducting case studies in Brazilian companies implementing ESG and CE practices jointly to gain deeper insights into the challenges, opportunities, and outcomes of this integration; analyzing and measuring the impact of ESG and CE integration using economic, social, environmental, and circularity performance indicators; and developing or identifying models and tools tailored to the Brazilian context to support the joint implementation of ESG and CE practices. Such studies would be instrumental in consolidating this integration, providing critical knowledge for effective implementation, and generating value across multiple dimensions.

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