TOWARD STRATEGIC SUSTAINABILITY INTEGRATION: A LONGITUDINAL CASE STUDY OF ESG GOVERNANCE AT CORTICEIRA AMORIM

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Abstract

This study examines how a mature industrial corporation integrates ESG governance, SDG alignment, integrated thinking and reporting, and circular economy principles into a coherent sustainability strategy. While prior research often examines these frameworks separately, this study focuses on how they interact as interrelated governance, accountability, reporting, and operational mechanisms that support corporate sustainability transformation. In doing so, the paper responds to the need for case-based empirical evidence on how sustainability becomes embedded in corporate governance and strategic decision-making.

The research adopts a longitudinal qualitative case study of Corticeira Amorim, the world's leading cork producer. The empirical analysis is based on the company's Sustainability Reports and Annual Consolidated Reports from 2018 to 2023. Through qualitative document analysis, the study examines the evolution of board-level ESG oversight, strategic sustainability disclosure, integrated reporting practices, stakeholder accountability mechanisms, and circular economy initiatives.

The findings indicate a gradual transition from fragmented sustainability initiatives toward a more integrated governance model. The analysis identifies four interconnected dimensions of sustainability integration: strategic SDG alignment, ESG governance institutionalization,

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integrated thinking and reporting, and circular economy operationalization. These dimensions suggest that sustainability at Corticeira Amorim has progressively moved beyond compliance-oriented disclosure toward a broader governance and value-creation logic.

The study contributes to the corporate governance and sustainability literature by **p**roviding case-based evidence of how ESG governance structures, sustainability reporting practices and circular economy principles may reinforce one another within a single organizational system. The case illustrates how integrated sustainability governance can support strategic coherence, stakeholder accountability and long-term value creation in a mature industrial firm.

Keywords: ESG governance, integrated reporting, corporate sustainability, circular economy, SDG alignment, sustainability transformation, Corticeira Amorim.

JEL Classification: M14, G34, Q56.

Introduction

The growing challenges of climate change, resource depletion, and persistent socio-economic inequalities have established sustainability as a leading focus in global policy, corporate strategy and corporate governance. In response to these systemic issues, the United Nations adopted the 2030 Agenda for Sustainable Development, outlining 17 Sustainable Development Goals (SDGs) as a unified framework to guide collective efforts. Achieving the SDGs requires significant changes in economic systems, including restructuring production processes, consumption patterns, and organizational governance. It is increasingly understood that individual nations alone cannot implement this agenda; instead, success will largely depend on the private sector's ability to foster innovation, attract investment, and practice responsible value creation.

Within this changing landscape, the role of corporations has shifted from a philanthropic or compliance-based view of responsibility to a model of strategic sustainability integration, where environmental and social factors are built into the core of business models. This shift also transforms sustainability into a governance issue, requiring firms to establish accountability mechanisms, board-level oversight, stakeholder engagement processes, and transparent reporting systems. (Aras & Crowther, 2008). Organizations are now expected not only to reduce negative externalities but also to actively contribute to societal well-being. Those that successfully adopt sustainability principles, especially through circular economy strategies, climate action, and social inclusion, are better positioned to achieve long-term resilience, competitive advantage, and stakeholder trust (Eccles et al. 2014). However, these benefits depend on the extent to which sustainability commitments are embedded in governance structures and strategic decision-making rather than being limited to symbolic disclosure.

Corticeira Amorim, a global leader in the cork industry and one of Portugal's most internationally recognized companies, provides a relevant case for analysing the strategic integration of sustainability. Cork, as a renewable and recyclable natural material, gives the company a distinctive position in debates on circular economy and sustainable industrial development. The company is particularly relevant because its circular production model allows the study to examine how resource use, waste valorization, stakeholder value creation, governance mechanisms, and reporting practices interact within a mature industrial firm. In

this study, circular economy is therefore considered not only as an environmental practice, but also as an operational mechanism through which sustainability governance becomes embedded in organizational practice.

A central challenge in corporate sustainability research is therefore to distinguish between symbolic sustainability disclosure and substantive governance integration. This distinction is central to the present study, which examines whether sustainability frameworks are connected to governance structures, reporting systems and operational practices. This study therefore approaches sustainability transformation as an integrated process in which governance, reporting, and operations reinforce one another within a coherent organizational system.

Despite the extensive literature on SDGs, ESG integration, integrated reporting, and circular economy practices, existing research remains fragmented. Most studies examine these frameworks independently or through partial linkages, offering limited insight into how they operate as a coherent system within mature industrial organizations. In particular, empirical case-based evidence demonstrates how global sustainability agendas are simultaneously embedded into corporate governance, reporting systems, and operational models remain limited. This study addresses this gap by examining Corticeira Amorim as an in-depth case of integrated corporate sustainability. Its originality lies in analyzing how ESG governance structures, sustainability reporting practices and circular economy initiatives become mutually reinforcing over time.

Building on this gap, this study examines how the alignment of SDG orientation, ESG governance, integrated thinking and reporting, and circular economy practices can support a transition from compliance-based sustainability toward strategic value creation. Accordingly, the study is guided by the following research question: How does a mature industrial corporation integrate ESG governance, SDG alignment, integrated reporting and circular economy practices into a coherent model of sustainability transformation?

The objective of this study is threefold. First, it examines how sustainability becomes embedded in corporate purpose, operational systems and innovation as a source of strategic value creation. Second, it analyses how ESG governance and integrated reporting mechanisms support accountability, strategic coherence and stakeholder-oriented value creation. Third, it evaluates how circular economy practices and life-cycle principles reinforce environmental performance and economic value. By analyzing Corticeira Amorim longitudinally, the study illustrates how sustainability may be institutionalized through governance, reporting and operational integration. In doing so, the study contributes to corporate governance and sustainability research by providing case-based evidence of how ESG governance, integrated reporting and circular economy practices may interact as mutually reinforcing dimensions of sustainability transformation.

The remainder of this paper is structured as follows. Section 2 presents the literature review. Section 3 outlines the research methodology and case study design. Section 4 reports empirical findings across four analytical dimensions: SDG alignment, ESG governance integration, integrated thinking and reporting, and circular economy operationalization. Section 5 discusses the theoretical and practical implications of the findings. Section 6 concludes by summarizing the main contributions, acknowledging the study's limitations and suggesting directions for future research.

1. Review of scientific literature

1.1. ESG Governance, Integrated Thinking and Corporate Sustainability

The 2030 Agenda for Sustainable Development has become a central reference for corporate sustainability by linking economic growth, social inclusion, and environmental protection within a common global framework. Companies are increasingly recognized not merely as contributors to economic activity but as key actors in driving innovation, investment and organizational change towards sustainable development. Originally conceived as a global policy agenda, the Sustainable Development Goals (SDGs) have evolved into a strategic framework for corporate sustainability, encouraging firms to incorporate sustainability into governance, strategy and decision-making (Delgado-Ceballos et al., 2022; Khaled et al., 2021). This evolution has been reinforced by the European Union's transition from voluntary sustainability initiatives to mandatory reporting requirements, strengthening the role of sustainability as a governance priority rather than simply a reporting obligation.

Within this context, the relationship between the SDGs and Environmental, Social and Governance (ESG) frameworks has received growing scholarly attention. Recent research argues that the SDGs should be viewed not only as aspirational policy objectives but also as strategic governance mechanisms capable of guiding corporate decision-making, risk management and long-term value creation. Central to this discussion is the concept of double materiality, which extends traditional financial materiality by considering both how sustainability issues affect firms and how corporate activities affect society and the environment (Delgado-Ceballos et al., 2022; Lungu et al., 2025). This perspective positions sustainability simultaneously as a business concern and a societal responsibility, reinforcing the integration of stakeholder expectations into corporate governance.

Accordingly, implementing SDGs requires governance frameworks that translate global sustainability ambitions into measurable organizational actions. Delgado-Ceballos et al. (2022) argue that double materiality links ESG performance to both financial outcomes and societal value creation, while Khaled et al. (2021) demonstrate that ESG indicators can be systematically aligned with specific SDG targets, enabling organizations to assess and communicate their contributions to sustainable development. Consequently, corporate sustainability performance can be understood as the operational expression of the SDGs at the organizational level, transforming global policy objectives into concrete managerial practices.

Recent studies further suggest that effective sustainability transformation depends less on the presence of ESG indicators than on how deeply sustainability is embedded in governance structures, strategic planning and organizational learning. Rather than functioning solely as disclosure mechanisms, ESG frameworks increasingly serve as governance instruments that support resilience, innovation and long-term stakeholder value. In this respect, the governance dimension plays a particularly significant role by linking board oversight, executive accountability, risk management and transparent disclosure to environmental and social objectives (Baratta et al., 2023). Empirical evidence consistently indicates that organizations with more mature ESG governance systems achieve higher legitimacy, stronger stakeholder relationships and greater organizational resilience, provided that sustainability responsibilities are institutionalized through governance mechanisms rather than fragmented compliance initiatives (Khaled et al., 2021).

1.2. Systems Thinking, Circular Economy and Sustainability Transformation

The institutionalization of sustainability has been accompanied by a profound evolution of the European regulatory framework. Through initiatives such as the Sustainable Finance Disclosure Regulation (SFDR), the EU Taxonomy, the Corporate Sustainability Reporting Directive (CSRD), and the European Sustainability Reporting Standards (ESRS), sustainability reporting has progressively shifted from a voluntary disclosure exercise to a mandatory governance requirement. These regulatory developments seek not only to improve the consistency and comparability of sustainability information but also to strengthen the integration of environmental, social, and governance considerations into corporate strategy, risk management, and decision-making.

Consequently, sustainability reporting has evolved into a governance mechanism that supports accountability and long-term value creation. The CSRD, in particular, reinforces this transition by requiring organizations to disclose both how sustainability issues affect corporate performance and how business activities generate environmental and social impacts. As a result, reporting increasingly supports the identification of material sustainability issues, strategic prioritization, and stakeholder engagement, reflecting the growing convergence between financial and non-financial reporting.

This evolution has also reinforced the relevance of Integrated Thinking (IT) and Integrated Reporting (IR). Rizzato et al. (2023) demonstrate that SDG disclosure positively influences both integrated thinking and integrated reporting among European-listed companies. According to the International Integrated Reporting Council (IIRC), integrated thinking is the active consideration of interdependencies among different forms of capital in creating long-term value. Rather than merely a reporting framework, it constitutes an organizational capability that strengthens strategic planning, resource allocation, organizational learning, and board-level decision-making (de Villiers et al., 2014).

Recent literature further argues that the value of Integrated Reporting lies not only in combining financial and non-financial information into a single report but also in promoting organizational processes that enhance strategic coherence across functional areas. Organizations that successfully embed integrated thinking demonstrate stronger alignment among sustainability objectives, investment decisions, innovation strategies, and performance measurement, whereas firms adopting IR primarily as a reporting exercise often show limited strategic integration. Consequently, integrated reporting is increasingly understood as the visible outcome of a broader organizational transformation rather than merely a reporting framework.

From a corporate governance perspective, integrated reporting also enhances organizational legitimacy by demonstrating that sustainability is embedded in corporate purpose and governance rather than treated as an isolated corporate social responsibility initiative (Deegan, 2019). Moreover, by encouraging managers to recognize the interdependencies among environmental, social and financial objectives, integrated thinking supports organizational learning, cross-functional collaboration and more coherent long-term decision-making. Sustainability reporting therefore becomes not only a communication mechanism but also an instrument for embedding sustainability into organizational culture, governance and strategic management.

An important contribution of sustainability research is the recognition that the Sustainable Development Goals form an interconnected system in which progress toward one objective

may reinforce or constrain progress toward others (Nilsson et al., 2016; Pradhan et al., 2017; ICSU, 2017). This systemic perspective suggests that corporate sustainability should be addressed not through isolated environmental or social initiatives but through governance and management systems that recognize interactions, synergies, and trade-offs across multiple organizational dimensions. Consequently, sustainability increasingly requires organizations to adopt integrated approaches that connect strategy, operations, governance, and stakeholder engagement within a coherent decision-making framework.

This systemic perspective has become particularly relevant in manufacturing, where sustainability depends on the interplay among operational efficiency, environmental performance and long-term value creation. Moldavska and Welo (2019) argue that corporate sustainability should be understood as a dynamic process of organizational transformation rather than a static performance outcome. Their Corporate Sustainability Assessment (CSA) framework emphasizes that sustainability requires continuous adaptation, innovation and the integration of environmental, economic and social objectives throughout organizational systems. Rather than relying exclusively on isolated performance indicators, sustainability assessment should therefore capture the complexity and interdependencies that characterize industrial production systems.

Within this broader systems perspective, the circular economy has emerged as a key operational mechanism for translating sustainability into business practice. Moving beyond traditional waste-reduction approaches, circular economy models promote regenerative production systems based on resource efficiency, product life extension, material recovery, and closed-loop value creation. Circularity is therefore increasingly recognized not only as an environmental strategy but also as a governance approach that strengthens organizational resilience, innovation, and long-term competitiveness. These principles are closely aligned with the SDGs, particularly SDG 12 (Responsible Consumption and Production) and SDG 13 (Climate Action), by encouraging organizations to minimize resource consumption while maximizing value creation throughout the product life cycle.

Life-Cycle Assessment (LCA) further reinforces this perspective by providing a systematic methodology for evaluating the environmental impacts of products and production systems throughout their life cycle. As Moldavska and Welo (2019) highlight, life-cycle thinking enables organizations to identify environmental hotspots, improve resource efficiency, and support evidence-based sustainability decision-making. For manufacturing firms operating in resource-intensive industries, the combination of circular economy principles and life-cycle assessment contributes to a more comprehensive understanding of sustainability performance across the value chain.

Recent research increasingly argues that sustainability transformation depends on the interaction among governance, reporting and operational capabilities rather than on the isolated adoption of sustainability initiatives. Organizations create greater long-term value when ESG governance, integrated thinking and circular economy practices reinforce one another as complementary components of corporate strategy. Sustainability transformation, therefore, is an organizational process through which environmental, social and governance considerations become progressively embedded within governance structures, strategic planning, innovation processes and operational routines, moving beyond compliance toward systemic organizational change.

Collectively, the literature suggests that corporate sustainability is best understood as a multidimensional governance system in which SDG alignment, ESG integration, integrated thinking, sustainability reporting, and circular economy practices operate as mutually reinforcing dimensions rather than as independent organizational initiatives. Despite significant advances in each of these research streams, empirical evidence explaining how these dimensions interact simultaneously within mature industrial organizations remains limited. Most studies continue to examine governance, reporting, or operational sustainability separately, providing only a partial understanding of sustainability transformation. Addressing this gap, the present study adopts a longitudinal case study of Corticeira Amorim to examine how these dimensions evolve into an integrated model of corporate sustainability governance and strategic value creation.

1.3. Towards Strategic Sustainability Integration

The literature reviewed highlights significant advances in understanding the dimensions of corporate sustainability. Research has demonstrated the growing strategic relevance of the SDGs, the consolidation of ESG governance frameworks, the emergence of integrated thinking and reporting, and the increasing adoption of circular economy principles as mechanisms that support long-term value creation. Collectively, these perspectives indicate that sustainability is evolving from a compliance-oriented approach toward a governance model that integrates environmental, social, and economic objectives into organizational strategy and decision-making.

Despite these developments, the literature remains largely fragmented. Studies typically examine SDG implementation, ESG governance, integrated reporting, and circular economy practices as distinct research streams, providing limited understanding of how these dimensions interact within organizations. While important theoretical advances have been made, empirical evidence explaining how governance structures, reporting mechanisms, and operational sustainability practices become mutually reinforcing over time remains relatively scarce, particularly in mature industrial firms undergoing sustainability transformation.

This fragmentation limits our understanding of how sustainability becomes institutionalized beyond disclosure and regulatory compliance. Rather than representing independent organizational initiatives, governance, reporting, and operational sustainability practices increasingly appear to function as complementary elements of a broader transformation process through which sustainability is embedded in corporate purpose, strategic decision-making, and value creation. Understanding these interactions is particularly important in manufacturing industries, where sustainability performance depends on integrating governance mechanisms, resource management, innovation, and stakeholder engagement across complex value chains.

Addressing this gap, the present study adopts a longitudinal case study of Corticeira Amorim to examine how SDG alignment, ESG governance, integrated thinking and reporting, and circular economy practices coalesce into a coherent model of corporate sustainability. By analyzing these dimensions simultaneously, the study contributes to the literature by providing empirical evidence that sustainability governance, reporting systems, and operational practices reinforce one another within a mature industrial organization, thereby supporting long-term strategic value creation. In doing so, the study proposes the concept of Strategic Sustainability Integration to describe the progressive alignment of governance structures, sustainability reporting, strategic decision-making, and circular operational practices into a coherent system that supports long-term value creation.

2. Research methodology

This study adopts a qualitative, longitudinal case study design (Yin, 2018) to examine how Corticeira Amorim, a global leader in the cork industry, incorporates sustainable development principles into its corporate strategy and daily operations. The case study approach was selected because it enables an in-depth, contextualized understanding of how sustainability becomes embedded in an organization's culture, governance structures, and long-term strategic decision-making (Eisenhardt, 1989; Yin, 2018), particularly in relation to the United Nations Sustainable Development Goals (SDGs) (United Nations, 2015).

Case selection followed a purposive, theoretical sampling logic (Eisenhardt, 1989). Corticeira Amorim was selected as an information-rich, exemplary case: founded in 1870, it is the world's leading cork producer and has grown into a diversified innovation ecosystem spanning wine and spirits, aerospace, mobility, and construction. Its consistent publication of sustainability reports since 2018 further makes it a suitable case for systematic longitudinal analysis.

Data sources consisted of Corticeira Amorim's Sustainability Reports published between 2018 and 2023 (Corticeira Amorim SGPS, 2018, 2019, 2020, 2021, 2022, 2023) — six annual reports reviewed in full to track the company's progress, priorities, and performance in environmental, social, and governance (ESG) areas. These reports were treated as the primary data source given their comprehensiveness and year-on-year consistency in disclosed content. As corporate self-disclosure, the reports are subject to the self-reporting bias inherent to voluntary sustainability reporting, since the company controls what is disclosed; this constraint is acknowledged as a limitation of the study.

Data were analyzed through qualitative content analysis (Bardin, 1977), using a deductive coding scheme derived from three analytical dimensions established a priori. Each sustainability initiative identified in the reports was classified by reporting year, thematic dimension, and associated SDG or ESG category. This coding was applied consistently across the 2018–2023 period, allowing the identification of temporal patterns and shifts in strategic emphasis, rather than treating each report as an isolated, static assessment — which operationalizes the longitudinal component of the design.

The first analytical dimension concerns SDG alignment. Each initiative was systematically linked to the most relevant SDGs, following the mapping conventions of the United Nations Global Compact (United Nations, 2021) and Global Reporting Initiative (GRI) standards (Global Reporting, 2021). This allows the study to assess not only whether the company recognizes the SDGs, but how they are integrated into its business model, governance, and operations — distinguishing symbolic commitment from substantive integration.

The second analytical dimension applies an ESG framework as an evaluation tool. The environmental component covers resource circularity, emissions reduction, and energy efficiency; the social component covers workforce development, diversity and inclusion, occupational health and safety, and community and supplier engagement; the governance component covers transparency, ethical management, accountability processes, and stakeholder involvement in decision-making. Particular attention is given to the interplay among these three dimensions, treating sustainability as a systemic rather than compartmentalized concept.

The third analytical dimension addresses circular economy and life-cycle integration. Given that cork is a renewable, recyclable, and carbon-negative raw material, this dimension examines how the company applies waste minimization, material recovery, and resource efficiency across its production cycle, including the use of Life-Cycle Assessment (LCA) methods to measure environmental and carbon performance.

To strengthen analytical rigor, coded initiatives were cross-checked across the six-year period to verify consistency and identify discontinuities or contradictions in disclosed practices over time. This longitudinal cross-referencing, combined with the use of internationally recognized reporting standards (GRI, UN Global Compact) as coding anchors, provides a systematic and traceable basis for the analysis, notwithstanding the single-source constraint noted above.

3. Results and discussion

Corticeira Amorim's sustainability trajectory between 2018 and 2023 illustrates how cork's renewable, recyclable, and carbon-negative properties provide the company with a resource base that inherently supports environmental responsibility. This natural advantage has been progressively transformed into a driver of industrial innovation aligned with circular economy principles and planetary boundaries. Sustainability is a core element of Corticeira Amorim's corporate governance, with initiatives explicitly aligned to key SDGs, particularly SDG 7 (Affordable and Clean Energy), SDG 12 (Responsible Consumption and Production), SDG 13 (Climate Action), and SDG 15 (Life on Land). From a governance perspective, this alignment is significant because it shows how environmental practices have become connected to strategic planning, reporting, and accountability mechanisms — rather than remaining isolated operational initiatives.

3.1. SDG Alignment and Strategic Framing

The longitudinal analysis demonstrates a clear evolution in Corticeira Amorim's engagement with the SDGs. In the initial phase (2018–2019), the SDGs functioned primarily as external guiding principles, serving legitimizing and communicative purposes within sustainability disclosures; references to the SDGs were present but only weakly connected to operational indicators or strategic decision-making. From 2020 onward, the company progressively reframed the SDGs as a strategic orientation mechanism through the formalization of the *Sustentável por Natureza* program. This evolution culminated in the 2022 report, which confirms that sustainability had become a key strategic focus guiding decisions in product innovation, supply chain management, and financing. Notably, Corticeira Amorim reported in line with the EU Taxonomy framework (European Commission, 2020), corresponding to 8% of turnover, 37.6% of capital expenditure, and 5.9% of operating expenditure (Corticeira Amorim SGPS, 2022), while also disclosing compliance with GRI Standards and the United Nations Global Compact.

By 2022–2023, Corticeira Amorim had identified 12 priority SDGs and explicitly linked them to governance structures, investment priorities, and performance metrics (Corticeira Amorim SGPS, 2023). This progression illustrates a shift from symbolic alignment to substantive integration: the SDGs increasingly serve as a normative framework for long-term value creation rather than merely as a reporting reference. These findings reinforce theoretical arguments that the SDGs achieve strategic relevance only when embedded within corporate purpose and planning processes, addressing a common gap in corporate sustainability implementation.

3.2. ESG Integration as Governance and Operational Infrastructure

Empirical results indicate a steady maturation of ESG integration throughout the period analyzed. Between 2018 and 2019, environmental, social, and governance initiatives were reported but remained largely fragmented across business units. From 2020 onward, ESG governance became increasingly formalized, culminating in the establishment of a Board-level ESG Committee (*Comissão de ESG*, CESG) and the direct involvement of the Chief Sustainability Officer (CSO) in top management and board-level decision-making. This governance architecture demonstrates a mature ESG framework directly linked to the Board of Directors, ensuring top-level oversight of sustainability strategy, compliance, ethics, and performance across business units. From a theoretical perspective, these developments reflect the institutionalization of double materiality, as the governance model considers both how environmental and social issues influence financial performance and how the company's operations affect the broader socio-environmental system (Delgado-Ceballos et al., 2022) — supporting existing literature linking ESG maturity to enhanced organizational legitimacy, accountability, and resilience.

Environmental performance indicators show consistent improvement over time. By 2023, renewable energy accounted for 77% of total energy consumption, 100% of cork raw material was utilized, 89% of waste was valorized, and 88% of materials were classified as sustainable, either renewable or recycled; the company also reported the sequestration of approximately 5.1 million tons of CO_2 and the avoidance of 81,442 tons of emissions (Corticeira Amorim SGPS, 2023). Together, these results indicate that environmental sustainability has moved beyond isolated operational improvements toward systemic integration within production processes and resource management.

Social indicators exhibit a similar trend of consolidation. Coverage under internationally recognized occupational health and safety standards expanded steadily, reaching 72% of the workforce by 2023 through certifications such as ISO 45001 and SA 8000, while the adoption of a formal Gender Equality Plan in 2023 (Corticeira Amorim SGPS, 2023) signals the institutionalization of social sustainability objectives and a stronger investment in human capital. Governance practices were further strengthened through systematic external assurance, including EY Audit, and alignment with major European regulatory frameworks such as the Corporate Sustainability Reporting Directive (CSRD) and the EU Taxonomy. Amorim's inclusion in leading ESG rating systems – EcoVadis Gold, MSCI AA, and Sustainalytics "Low Risk" – further confirms its position as a sectoral benchmark in ESG practices.

3.3 Integrated Thinking and Reporting (ITR)

A significant longitudinal finding concerns the development of integrated thinking and reporting practices. In the early reports (2018–2019), sustainability and financial information were presented in separate documents with limited cross-referencing. From 2021 onward, sustainability disclosures were progressively incorporated into the Annual Consolidated Report, indicating a clear shift toward integrated reporting principles. This evolution reflects a deeper cognitive transformation within the organization: as discussed in Rizzato et al. (2023), the integration of sustainability reporting into consolidated financial reporting encourages internal consistency among corporate strategy, resource allocation, and SDG-focused outcomes. The use of shared key performance indicators across financial and non-financial domains demonstrates that sustainability considerations increasingly inform

strategic planning, capital allocation, and performance evaluation, rather than being treated as a parallel or isolated reporting exercise.

Integrated thinking is also evident in the company's organizational structure: the presence of sustainability officers embedded within each of the five business units reinforces the alignment between corporate sustainability strategy and operational execution. Stakeholder engagement processes also became more structured over time, directly informing materiality assessments and strategic reviews — involving suppliers, employees, investors, NGOs, and local communities — demonstrating that reporting functions not only as an external communication tool but also as an internal mechanism for organizational learning and coordination. These findings support theoretical models that conceptualize integrated reporting as a catalyst for organizational learning and strategic coherence, rather than merely as a disclosure instrument. In this case, SDG and ESG disclosures appear to have facilitated integrated thinking by encouraging managers to consider interactions, interdependencies, and trade-offs across different forms of capital.

3.4. Circular Economy and Life-Cycle Integration

Amorim exemplifies a clear case of circular economy integration, closely aligning with the models proposed by Moldavska and Welo (2019) and Khaled et al. (2021). Circular economy practices constitute the most operationally embedded dimension of Corticeira Amorim's sustainability strategy during the period analyzed. The company's operations reveal complete circularity in its core material, whose renewable, recyclable, biodegradable, and carbon-negative properties provide an inherent circular advantage; however, the scope and sophistication of these practices expanded significantly after 2020, reflecting a more systematic and strategic approach to circularity. This evolution is evident in the company's ability to achieve full cork utilization and to promote multi-industry symbiosis through the reuse of industrial by-products in new value chains, including aerospace, construction, and design — demonstrating that circularity extends beyond internal waste management and becomes embedded in product innovation and cross-sectoral value creation.

The Green Cork, Ecobouchon, and ETICO initiatives further extend this circularity across five continents, enabling the collection and recycling of over 1,052 tons of cork in 2022, equivalent to approximately 234 million cork stoppers (Corticeira Amorim SGPS, 2022). At the same time, the company progressively adopted life-cycle assessment (LCA) methodologies, with more than 50% of total sales deriving from products that had undergone LCA (Corticeira Amorim SGPS, 2023), indicating a transition from output-focused environmental management to life-cycle-based performance assessment aligned with SDGs 12 and 13. These findings illustrate that circular economy strategies become transformative when integrated across the value chain rather than limited to waste management: resource recovery, waste minimization, and closed-loop production function simultaneously as environmental practices and sources of competitive advantage, aligning with systems-based sustainability theories that emphasize circularity embedded in product design, innovation, and governance structures as a condition for long-term industrial transformation.

3.5. Strategic Sustainability Integration and Transformative Value Creation

Synthesizing results across all analytical dimensions reveals a clear trajectory toward what this study defines as Strategic Sustainability Integration. Between 2018 and 2023, Corticeira Amorim progressively aligned SDG framing, ESG governance, integrated thinking and reporting, and circular economy practices into a coherent and mutually reinforcing system,

in which sustainability is embedded not only in disclosure practices but also in governance, operations, innovation, and finance. The *Sustentável por Natureza* 2030 roadmap exemplifies this integration by translating sustainability principles into quantified environmental, social, and economic commitments — nine measurable environmental and social targets by 2024, seven quantitative objectives by 2030, and ongoing monitoring through verified GRI-based indicators — demonstrating that sustainability is operationalized through a formal system of targets, metrics, and accountability mechanisms.

The introduction of sustainability-linked financial instruments further strengthens this integrated logic, embedding sustainability considerations into the company's financial strategy: more than €86 million raised through green bonds and sustainability-linked commercial paper positions sustainability not merely as an ethical aspiration or reporting requirement, but as a strategic investment driver connected to long-term value creation. At the same time, Amorim's business model reflects a logic of circular value creation in which natural, social, and financial capitals are interconnected and mutually reinforcing — supported by more than €11 million in annual R&D expenditure and eight active joint ventures, providing further evidence of strategic sustainability integration in practice.

These findings support the central theoretical proposition of this study: sustainability transformation occurs when global frameworks and corporate practices reinforce one another within a unified strategic logic. Rather than approaching sustainability as a constraint or compliance obligation, Corticeira Amorim leverages it as a strategic asset that enhances innovation, resilience, and stakeholder trust. The synthesis presented in Table no. 1 illustrates how the company's sustainability governance evolved into a fully integrated system linking global frameworks, governance structures, and operational practices into a coherent model of Strategic Sustainability Integration.

Table no. 1 Framework Dimensions of Strategic Sustainability Integration at Corticeira Amorim (2018–2023)

Framework Dimension	Core Focus	Key Corporate Actions (2018–2023)	Quantitative / Qualitative Indicators	Linked SDGs
SDG Alignment	Strategic alignment with the 2030 Agenda and UN Global Compact principles	• Formal adoption of 12 priority SDGs integrated in the "Sustentável por Natureza" strategy. • Direct mapping of business activities to SDGs (7, 8, 9, 11, 12, 13, 15, 17). • Integration of SDG reporting into corporate KPIs and GRI disclosures.	• 12 SDGs identified as priority. • EU Taxonomy-aligned turnover: 8%. • CapEx aligned with SDGs: 37.6%.	SDG 7, 8, 9, 12, 13, 15, 17
ESG Integration	Embedding environmental, social, and governance standards in business management	• Creation of Board-level ESG Committee (CESG). • ESG-based remuneration and risk monitoring. • Compliance with GRI, UNGC, SASB, and CSRD. • Annual external assurance (EY).	Environmental: 77% renewable energy; 5.1 Mt CO_2 sequestered; 100% cork utilization; 89% waste valorization. Social: 72% workforce ISO 45001 certified; Gender Equality Plan; employee training and	SDG 3, 5, 7, 8, 9, 12, 13, 15

Framework Dimension	Core Focus	Key Corporate Actions (2018–2023)	Quantitative / Qualitative Indicators	Linked SDGs
			inclusion. Governance: EcoVadis Gold; MSCI AA; Sustainalytics "Low Risk".	
Integrated Thinking & Reporting (ITR)	Integration of financial and sustainability information; cognitive alignment	• Integration of Sustainability Report within Annual Consolidated Report. • Cross-functional ESG governance structure across all business units. • Stakeholder engagement as part of materiality analysis.	• Use of GRI and Integrated Reporting (IR) principles. • Disclosure of ESG and SDG KPIs in financial documents. • Regular stakeholder consultations and employee engagement surveys.	SDG 8, 9, 12, 17
Circular Economy & Life-Cycle Integration (CE)	Operationalization of sustainability through circular production and life-cycle assessment	• 100% cork utilization across business lines. • Expansion of Green Cork, Ecobouchon, and ReCork recycling initiatives. • Use of by-products in construction, design, and aerospace industries. • Life-Cycle Assessment (LCA) for 50%+ of product lines.	• >1,000 tonnes cork recycled annually (≈230 million stoppers). • 88% renewable/recycled material inputs. • 11 million € annual R&D investment in sustainable materials.	SDG 7, 9, 12, 13, 15
Strategic Sustainability Integration	Sustainability as a long-term competitive and governance model	• Implementation of "Sustentável por Natureza" 2030 roadmap with 9 environmental and 7 social/economic targets. • Sustainability-linked financing (green bonds, ESG-indexed loans). • Alignment with EU Green Deal, CSRD, and Taxonomy.	• €86 million in sustainability-linked financial instruments. • Annual sustainability investment >€20 million. • CO_2 neutrality target under development.	SDG 7, 8, 9, 12, 13, 15, 17

Conclusions

This study examined how a mature industrial corporation integrates SDG alignment, ESG governance, integrated thinking and reporting, and circular economy practices into a coherent model for sustainability transformation. Drawing on a longitudinal qualitative analysis of Corticeira Amorim's sustainability and corporate reports from 2018 to 2023, the findings indicate that sustainability has progressively shifted from isolated environmental and social initiatives toward a more integrated governance and strategic model.

The analysis shows that Corticeira Amorim's sustainability trajectory reflects an institutional evolution toward what this study conceptualizes as Strategic Sustainability Integration: a

process in which governance structures, sustainability reporting, strategic decision-making, and operational sustainability practices progressively converge into a coherent system that supports long-term value creation. Rather than treating sustainability as a peripheral or compliance-based activity, the company increasingly embeds it across governance structures, reporting mechanisms, stakeholder accountability processes, operational practices, and strategic decision-making. In this sense, the case illustrates how the interplay among ESG governance, integrated reporting, and circular economy practices can support a transition from fragmented sustainability actions to long-term value creation.

Beyond providing an in-depth longitudinal analysis of Corticeira Amorim, this study makes three main contributions to the literature. First, it contributes to the corporate governance and sustainability literature by offering case-based evidence that ESG governance may serve as an institutional mechanism for embedding sustainability in strategic decision-making. Second, it contributes to research on integrated reporting by illustrating how sustainability disclosure and integrated thinking may support coherence across governance, strategy, stakeholder accountability, and long-term value creation. Third, it contributes to the circular economy and sustainable development literature by showing how operational circularity may reinforce governance-based sustainability transformation in an industrial context.

The study also offers practical implications for managers, boards, and sustainability professionals. The findings suggest that sustainability transformation requires more than adopting individual environmental or social initiatives. It depends on aligning governance oversight, reporting systems, stakeholder engagement, and operational implementation. For mature industrial firms, this implies that ESG governance and integrated reporting can play an important role in translating sustainability commitments into organizational routines, performance metrics, and strategic investment decisions. The findings therefore suggest that sustainability should be governed as a strategic capability rather than managed as an isolated reporting or compliance function.

This study has some limitations. First, it is based on a single case study, which provides rich contextual insight but limits the generalizability of the findings to other sectors and institutional contexts. Second, the analysis relies on corporate sustainability and annual reports, which are formal disclosure documents and may not fully capture internal managerial processes, informal decision-making dynamics, or implementation challenges. Third, although longitudinal design allows identification of patterns over time, the study does not assess the causal effects of sustainability integration on financial, environmental, or social performance.

Future research could address these limitations through comparative multi-case studies across industries, countries, and regulatory contexts. Further studies could also include interviews with managers, board members, employees, investors, and other stakeholders to capture internal perceptions of sustainability governance and implementation. In addition, mixed-methods research that combines qualitative evidence with quantitative sustainability performance indicators would help assess how integrated sustainability frameworks influence organizational behavior, strategic adaptability, and long-term performance. Ultimately, this study suggests that long-term corporate sustainability depends not only on adopting ESG frameworks or sustainability reporting standards but also on organizations' ability to integrate governance, strategy, reporting, and operational practices into a coherent system of value creation.

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Generative Artificial Intelligence (GenAI) usage statement

ChatGPT (version 5.0) was responsibly used for language improvement. After this process, the authors reviewed and edited the content as needed and take full responsibility for the content of the present article.

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