SUSTAINABILITY STRATEGY MAP AND INTEGRATED SUSTAINABILITY PERFORMANCE SCORECARD FRAMEWORK

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Abstract

This conceptual paper addresses the gap in integrating sustainability into organizational strategy and performance measurement. While many organizations recognize the importance of sustainability, they often struggle to translate this recognition into actionable strategies and effective performance management. Drawing on the ethical sustainability governance framework (Suhardjo et al., 2024), this study proposes a sustainability strategy map and integrated sustainability performance scorecard framework as an approach to integrating sustainability into business operations and decision-making. Building on the balanced scorecard and strategy map, this framework incorporates environmental, social, cultural, and technological dimensions alongside financial considerations. This framework enables organizations to map material sustainability issues to strategic objectives and measures performance against these objectives. To demonstrate the practical application of this framework, this study analyzes the sustainability practices of three global companies: Kao, PepsiCo, and Schneider Electric, to assess their alignment with the ethical sustainability governance framework and how they might fit the proposed framework. Through the analysis of case studies, we aim to provide insights into how organizations can implement sustainability initiatives and measure their impact. It provides a practical tool for aligning sustainability initiatives with overall business strategy, fostering the establishment of sustainable business models and a culture of sustainability, and creating long-term value.

Keywords: Materiality, Sustainability Strategy, Sustainability Performance, Sustainability Reporting, Balanced Scorecard

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1. INTRODUCTION

Sustainability has emerged as a critical imperative for organizations worldwide, driving a shift towards more responsible and sustainable business practices. As the global landscape evolves, organizations are increasingly recognizing the need to balance economic growth with environmental

stewardship and social responsibility (Elkington, 1994; Milne & Gray, 2013). This paradigm shift has led to a growing emphasis on sustainability integration, which involves embedding sustainability considerations into core business operations. Recent research has emphasized the importance of integrating sustainability into organizational strategy and operations (Gebhardt et al., 2023; Zharfpeykan & Akroyd, 2022). By integrating sustainable practices, organizations can enhance their long-term competitiveness and build stronger relationships with stakeholders.

A crucial step in integrating sustainability is conducting a thorough materiality assessment (Zharfpeykan & Akroyd, 2023). This process helps organizations identify the most significant sustainability issues that impact their business and stakeholders (Garst et al., 2022). By prioritizing material issues, organizations can focus their efforts on areas that have the greatest potential to create positive change (Whitehead, 2017). Materiality assessments involve identifying and prioritizing sustainability issues based on their relevance to the organization's business model and their impact on stakeholders (Zharfpeykan & Akroyd, 2023). However, conducting effective materiality assessments can be challenging, as it requires a deep understanding of the organization's operations, supply chain, and external environment. Researchers such as Torelli et al. (2020) have highlighted the importance of engaging a diverse range of stakeholders, including employees, customers, and suppliers, in the materiality assessment process.

Once material issues have been identified, organizations can develop comprehensive sustainability strategies. These strategies should outline clear objectives, targets, and action plans for addressing material issues. Research has explored the link between materiality assessments and the development of effective sustainability strategies (Green & Cheng, 2019; Whitehead, 2017). However, despite this growing body of knowledge, challenges remain in translating materiality assessments into actionable strategies. For instance, Perera-Aldama (2023) has highlighted the difficulty of prioritizing material issues and setting realistic targets. Additionally, Galpin et al. (2015) and Henry et al. (2019) have emphasized the need for strong leadership and organizational commitment to ensure the successful implementation of sustainability strategies.

Traditional performance measurement frameworks, such as the balanced scorecard, often fall short of capturing the full spectrum of sustainability issues (Hansen & Schaltegger, 2016, 2018). While the balanced scorecard has been widely adopted as a tool for strategic performance measurement, its application to sustainability is still under debate (Epstein & Wisner, 2001; Figge et al., 2002; Hahn & Figge, 2018; Hansen & Schaltegger, 2018; Mio et al., 2022; Zharfpeykan & Akroyd, 2022). Many organizations have struggled to integrate sustainability into the balanced scorecard or any of their performance management systems, often prioritizing financial and operational performance over environmental and social considerations. This is often due to a lack of clear guidance and effective tools for integrating materiality with strategy and managing sustainability performance (Zharfpeykan & Akroyd, 2023).

To address this challenge, some scholars have proposed various frameworks and methodologies, including the sustainability balanced scorecard (SBSC) (Asiaei & Bontis, 2019; Epstein & Wisner, 2001; Schaltegger & Wagner, 2006) and strategy map (Al-Mawali, 2023; Islam, 2018). However, the implementation of SBSCs can be complex, and organizations may face challenges in aligning sustainability initiatives with their business strategy. Sustainability is often treated as a separate project or a new 'pillar' added to the balanced scorecard or embedded in one specific perspective such as an internal business process, rather than being fully integrated into the organization's strategy and operations (Hahn & Figge, 2018; Jassem et al., 2020; Sands et al., 2016).

The objective of this study is to develop a comprehensive sustainability strategy map and integrated sustainability performance scorecard framework that aligns sustainability initiatives with overall business strategy. Building on this objective, the primary research question aims to explore how the proposed sustainability strategy map and integrated sustainability performance scorecard framework can help organizations align their sustainability initiatives with their overall business strategy, and what practical insights can be derived from the sustainability practices of Kao, PepsiCo, and Schneider Electric.

To address the limitation of integrating sustainability into strategic planning and performance measurement, this study proposes a new sustainability strategy map and integrated sustainability performance scorecard framework. Drawing on the ethical sustainability governance framework (Suhardjo et al., 2024), this holistic approach can provide organizations with a way to map material sustainability issues to strategic objectives and measure performance against these objectives. By integrating elements of the theory of planned behavior (TPB), dynamic capability theory (DCT), stakeholder theory (ST), triple bottom line (TBL), purpose-led organizations, and corporate governance, this framework provides a foundation for aligning sustainability initiatives with overall business strategy.

To illustrate the practical application of these frameworks, this study analyzes the sustainability practices of three global companies: Kao, PepsiCo, and Schneider Electric (Belkaoui & Karpik, 1989). We do this using their sustainability reports (Landrum & Ohsowski, 2018), corporate website, and other third-party's information. By examining their sustainability reports and other relevant information, we assess their alignment with the ethical sustainability governance framework and how they may fit the proposed framework. Through this analysis, this study aims to provide practical insights for organizations seeking to integrate sustainability into their operations and improve their sustainability performance.

This new integrated framework addresses the limitations of traditional performance measurement systems, which often prioritize financial and operational performance over environmental and social considerations. By incorporating environmental, social, cultural, and technological dimensions alongside the financial consideration, the proposed sustainability strategy map and integrated sustainability performance scorecard offer a more comprehensive, systematic, and integrated approach to sustainability strategic planning and performance measurement.

This paper is structured as follows: Section 2 reviews the relevant framework and literature, Section 3 outlines the methodology, Section 4 presents the new theoretical framework, Section 5 discusses practical implications, and Section 6 concludes with some key takeaways.

2. LITERATURE REVIEW

This literature review provides a foundation for the proposed strategy map and integrated sustainability performance scorecard grounded in the ethical sustainability governance framework.

2.1. Ethical sustainability governance framework

The ethical sustainability governance framework of Suhardjo et al. (2024) emphasizes the importance of ethical governance as a core driver of sustainable action. It incorporates four interconnected pillars: environmental, social, cultural, and technological. To provide a comprehensive framework, it integrates elements from various theories and frameworks, including the theory of change (ToC), TPB, DCT, ST, TBL, purpose-led organizations, and corporate governance.

The ethical sustainability governance framework emphasizes continuous improvement in impactful sustainability integration to drive sustainable performance. This framework is relevant to the development of the proposed sustainability strategy map and integrated sustainability performance scorecard. It highlights the need for an integrated approach to sustainability that considers both the internal and external dimensions of organizational performance.

By grounding the ethical sustainability governance framework into the proposed sustainability strategy map and integrated sustainability performance scorecard framework, organizations can align sustainability initiatives with their strategy. This approach supports the development of impactful sustainability strategies resulting from an integrated mapping of material sustainability issues, which aligns with the interconnected pillars, and measures and track the progress towards their goals. Furthermore, by integrating the ethical sustainable governance framework, organizations can ensure that their sustainability efforts are grounded in ethical principles and contribute to sustainable development.

2.2. Materiality assessment, sustainability strategy, and performance

Materiality assessment plays an important role in integrating sustainability into an organization's strategy and operations (Zharfpeykan & Akroyd, 2023). By identifying and prioritizing the most material sustainability issues, organizations can focus their resources and efforts on areas with the greatest impact on financial performance and societal well-being (Barker & Mayer, 2024; Beske et al., 2020). Materiality assessment is essential for effective sustainability reporting, as it helps to ensure that the information disclosed is relevant and material to stakeholders (Garst et al., 2022; Torelli et al., 2020). By considering both financial and impact perspectives, organizations can identify potential financial risks and opportunities associated with sustainability factors, as well as their broader societal and environmental implications. This holistic approach to materiality assessment can help organizations build trust with stakeholders and manage risks (Beske et al., 2020; Torelli et al., 2020; Whitehead, 2017).

Studies have demonstrated that companies that effectively identify and address material sustainability issues are more likely to achieve superior financial performance (Barker & Mayer, 2024; Consolandi et al., 2022; Khan et al., 2016), enhance their reputation, mitigate risks, and seize opportunities (Whitehead, 2017). By prioritizing material sustainability issues, companies can align their sustainability initiatives with their business objectives and allocate resources effectively. This can help to ensure that sustainability efforts are both effective and efficient (Whitehead, 2017).

Double materiality recognizes the two-way relationship between a company's sustainability impacts and its financial performance (Beske et al., 2020; Garst et al., 2022). It considers how environmental regulations, social unrest, and resource scarcity can pose financial risks, as well as how strong sustainability performance can translate into financial benefits (Delgado-Ceballos et al., 2023; Eccles et al., 2012). However, despite the growing recognition of double materiality, many companies still struggle to fully integrate it into their sustainability strategies and reporting practices (Long et al., 2023). This is often due to a lack of understanding of how to identify, assess, and manage material sustainability issues, as well as the challenges associated with integrating sustainability into traditional business models and decision-making processes (Dragomir et al., 2024).

Sustainability performance measurement and reporting are essential for driving transparency, accountability, and progress towards sustainable development (Adams & Larrinaga, 2019; Ahi et al., 2018; Artiach et al., 2010; Gates & Germain, 2010; Searcy, 2012). By tracking and reporting their sustainability performance, companies can demonstrate their commitment to sustainability and build trust with stakeholders. Additionally, sustainability performance provides valuable insights for informed decision-making and risk management, helping management align business strategies with stakeholder expectations and contribute to a sustainable organization (Hussain et al., 2018; Schaltegger et al., 2015; Searcy, 2012; Silva et al., 2019).

2.3. Balanced scorecard in sustainability

While some concepts, such as materiality assessment and stakeholder engagement (Torelli et al., 2020), have been developed to enable sustainability integration, many companies still struggle to fully integrate sustainability into their operations and report on their impactful performance. Often, companies prioritize sustainability reporting due to regulatory requirements, rather than focusing on substantive sustainability practices (He, 2022; Lai & Stacchezzini, 2021). To address this challenge, some scholars have proposed integrating sustainability into traditional performance measurement frameworks, such as the balanced scorecard.

While the balanced scorecard has been proposed as a tool for integrating sustainability into performance management systems, organizations

often struggle to effectively align sustainability initiatives with their overall business strategy (Ali et al., 2022; Hansen & Schaltegger, 2016, 2018; Kerr et al., 2015). This is often due to a lack of clear guidance and effective tools for integrating material sustainability issues into strategic planning and performance measurement. To address this challenge, some scholars have proposed various frameworks, including the SBSC (Asiaei & Bontis, 2019; Epstein & Wisner, 2001; Schaltegger & Wagner, 2006) and strategy maps (Al-Mawali, 2023; Islam, 2018).

However, the implementation of SBSCs can be complex, and organizations may still face challenges in aligning sustainability initiatives with their business strategy (Epstein & Wisner, 2001; Figge et al., 2002; Hahn & Figge, 2018; Hansen & Schaltegger, 2018; Mio et al., 2022; Zharfpeykan & Akroyd, 2022). Sustainability is often treated as an add-on rather than being fully integrated into the organization's core strategy and operations (Hahn & Figge, 2018; Jassem et al., 2020; Sands et al., 2016). To address this challenge, this study proposes a sustainability strategy map and integrated sustainability performance scorecard framework, drawing on the ethical sustainability governance framework of Suhardjo et al. (2024). This integrated approach and framework aim to foster a deeper integration of sustainability into organizational strategy and operations, enabling organizations to deliver impactful sustainability performance.

Despite the development of various frameworks and methodologies for integrating sustainability into business strategy, there remains a significant gap in practical guidance for organizations. The existing tools and frameworks, such as the SBSC and strategy maps, often fall short of providing clear, actionable steps for fully embedding sustainability into core business operations. This study addresses these challenges by proposing a novel sustainability strategy map and integrated sustainability performance scorecard framework. This innovative approach aims to bridge the gap by offering a comprehensive, practical tool that aligns sustainability initiatives with overall business strategy, enabling organizations to achieve meaningful and measurable sustainability outcomes.

3. RESEARCH METHODOLOGY

This study employs a mixed-methods research design, combining a theory synthesis (Jaakkola, 2020) with a content analysis approach (Brunzel, 2021; Landrum & Ohsowski, 2018). The theoretical foundation is rooted in the ethical sustainability governance framework (Suhardjo et al., 2024), which emphasizes ethical governance and internal drivers for sustainability measurable outcomes. By synthesizing relevant theories, frameworks, and literature, such as the materiality assessment, sustainability strategy, sustainability performance, and balanced scorecard, this study aims to develop a new approach to sustainability strategic planning and performance measurement.

To demonstrate the practical application of the proposed integrated framework, a content analysis of selected global companies' website, 2023 sustainability reporting, including Kao Corporation (2024), PepsiCo (2024), and Schneider Electric (2024), and their environmental, social, and governance (ESG) ratings both from MSCI (n.d.) for the period between 2019 and 2024 and Sustainalytics (n.d.) for the period of 2023 reporting was conducted. These companies were selected based on their long-standing operations (over 100 years), global presence, strong sustainability performance as evidenced by their MSCI ESG ratings and Sustainalytics ESG risk ratings, and robust performance management systems to manage sustainability risk (Tables 1 and 2).

This analysis focuses on examining materiality assessment, sustainability strategies, performance measurement, and ethical governance including ethical leadership. By identifying best practices, this study assesses the potential application of the proposed sustainability strategy map and integrated sustainability performance scorecard in real-world settings. Through this combined approach, the study offers a new understanding of sustainability practices with the goal of enabling the development of a practical performance management system for integrating sustainability into organizational strategy and performance measurement.

Table 1. Comparative analysis of ESG ratings for three global companies

Company	Country/ Continent	Year of establishment	MSCI ESG rating	Sustainalytics ESG risk rating	Sustainalytics management of ESG material risk
Kao Corporation	Japan/Asia	1882	AA from 2020 to 2021 and from 2023 to 2024 A in 2022	17.1/Low risk Last update: May 23, 2024	Strong
PepsiCo	USA/North America	1898	AA from 2019 to 2023	20.8/Medium risk Last update: May 23, 2024	Strong
Schneider Electric	France/Europe	1836	AAA from 2000 to 2024	8.5/Negligible risk Last update: Oct 8, 2024	Strong

Source: MSCI (n.d.), Sustainalytics (n.d.), and the companies' websites (Kao Corporation, n.d.; PepsiCo, n.d.; Schneider Electric, n.d.) (accessed on October 31, 2024).

Table 2. Comparative analysis of MSCI ESG rating for three global companies

Company	Industry	MSCI ESG rating	ESG laggard	Average	ESG leader
Kao Corporation	Household and personal products	AA from 2000 to 2021 and from 2023 to 2024 A in 2022	Corporate behavior	Chemical safety Product carbon footprint	Corporate governance Packaging material and waste Raw material sourcing
PepsiCo	Beverages	AA from 2019 to 2023	Raw material sourcing	Corporate governance Corporate behavior Packaging material and waste	Opportunities in nutrition and health Water stress Product safety and quality Health and safety Product carbon footprint
Schneider Electric	Electrical equipment	AAA from 2000 to 2024	None	Corporate behavior Labor management	Corporate governance Opportunities in clean tech Toxic emissions and waste

Source: MSCI (n.d.) (accessed on October 31, 2024).

Figure 1 outlines the proposed sustainability strategy map and integrated sustainability performance scorecard framework. This framework shows the process of identifying material sustainability issues, mapping and developing strategies to address them, measuring sustainability performance, and ultimately reporting on sustainability outcomes. By rooting the ethical sustainability governance framework and modifying the balanced scorecard and strategy map, this model aims to foster a holistic and integrated approach to sustainability. This proposed framework emphasizes ethical governance (Suhardjo et al., 2024) as a core driver, incorporates environmental, social, cultural, and technological perspectives along with the financial perspectives, ensures financial and sustainability integration, and aligns materiality, strategies, and performance metrics.

Figure 1. Sustainability strategy map and integrated sustainability performance scorecard framework
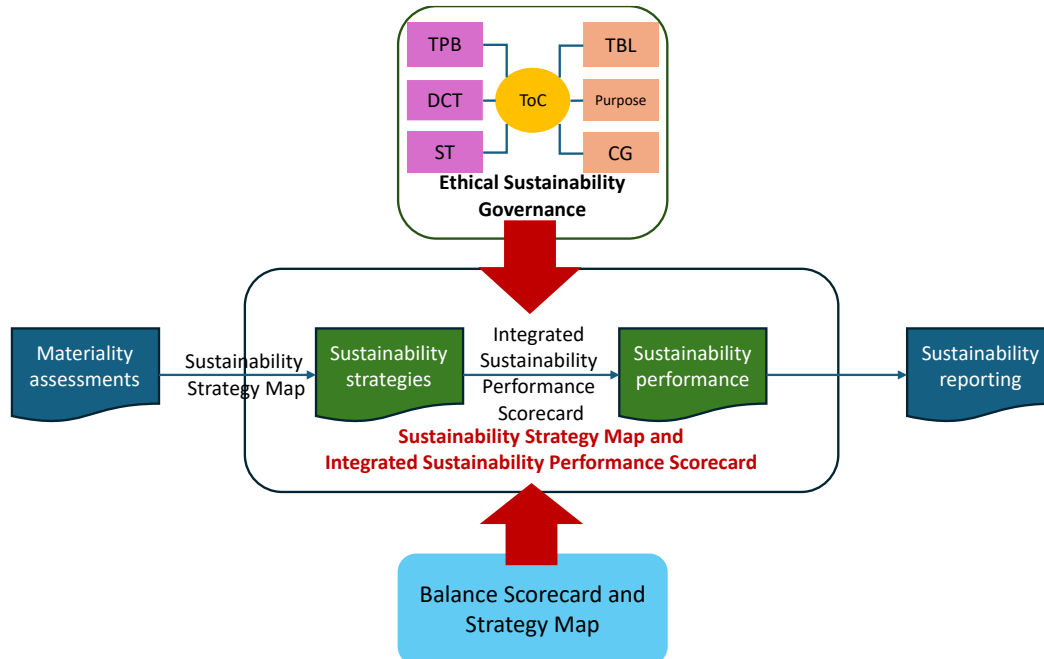
Note: ToC: theory of change; TPB: theory of planned behavior; DCT: dynamic capability theory; ST: stakeholder theory; TBL: triple bottom line; Purpose: purpose-led organizations; CG: corporate governance.
Source: Authors' elaboration.

4. RESULTS

To develop a robust sustainability strategy map and performance measurement framework, we draw on the ethical sustainability governance theoretical framework of Suhardjo et al. (2024). This new framework provides a solid foundation for integrating sustainability into organizational strategy and performance measurement.

4.1. Five interconnected perspectives

This sustainability strategy map and integrated sustainability performance scorecard framework introduce a transformative approach to strategic

sustainability management by incorporating five interconnected perspectives: financial, environmental, social, cultural, and technological. Unlike traditional frameworks, this model positions financial performance as a crucial enabler of sustainable integration rather than the sole organizational objective. The financial perspective is strategically reimagined as a supportive mechanism that facilitates and empowers sustainability initiatives, recognizing that robust financial capabilities are essential for implementing comprehensive sustainable practices.

The framework's distinctive strength lies in its integration of four core sustainability perspectives — environmental, social, cultural, and technological — which are fundamentally rooted in the ethical sustainability governance framework (Suhardjo et al., 2024). Each perspective represents a critical perspective of organizational sustainability: environmental stewardship addresses ecological responsibilities, social perspective focuses on stakeholder engagement and human-centric practices, cultural perspective ensures organizational values and local context sensitivity, and technological perspective drives innovative solutions for sustainable transformation. These perspectives are not standalone elements but intricately interconnected components that collectively shape a holistic approach to sustainable organizational development.

Ethical governance emerges as the foundational pillar embedded across all perspectives, serving as a strategic compass that guides decision-making, enables accountability, and promotes responsible business practices. By integrating ethical considerations into each perspective, the framework transcends traditional compliance-driven approaches and establishes a values-driven model of organizational sustainability. This approach recognizes that ethical governance is not a separate function but an intrinsic characteristic that permeates every strategic objective and operational decision.

The proposed framework innovatively maps balanced scorecard perspectives to its sustainability-focused approach (Figure 2). The customer perspective is reimagined through social and cultural lenses, acknowledging that customer satisfaction emerges from deeper societal and cultural understanding. The internal business process perspective now encompasses social, environmental, and technological dimensions, reflecting the complex interdependencies of modern organizational operations. Similarly, the learning and growth perspective is reinterpreted through cultural, social, and technological perspectives, emphasizing the need for a dynamic, adaptive workforce capable of driving sustainable innovation and responding to evolving global challenges. This mapping represents a significant theoretical advancement, providing organizations with a more nuanced, comprehensive tool for strategic sustainability management.

Figure 2. Mapping balanced scorecard dimension to integrated sustainability performance scorecard

Customer perspective maps to
- Social perspective
- Cultural perspective

Internal business process perspective maps to
- Social perspective
- Environmental perspective
- Technological perspective

Learning and growth perspective maps to
- Cultural perspective
- Social perspective
- Technological perspective
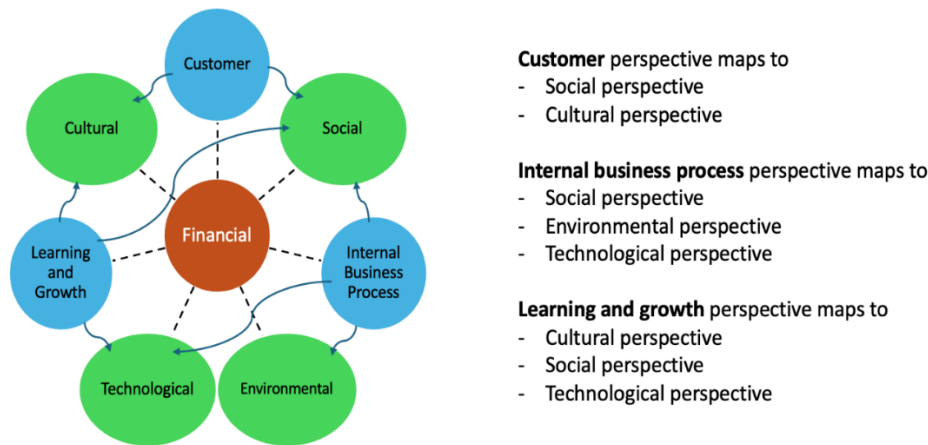
Source: Authors' elaboration.

4.2. Sustainability strategy map

The proposed sustainability strategy map (Table 3) fundamentally reimagines traditional strategic frameworks through the lens of ethical sustainability governance. Rooted in an integrated perspective, this framework transcends conventional strategy mapping by incorporating five interconnected dimensions that capture the complexity of modern organizational sustainability challenges. At its core, the sustainability strategy map is designed to bridge the critical gap between sustainability aspirations and strategic execution. Unlike traditional approaches that often treat sustainability as a peripheral concern, this framework positions sustainability as a central strategic imperative. By ensuring that material sustainability issues are aligned with strategic objectives and performance metrics, the map creates a streamlined approach to organizational sustainability.

The framework's distinctive feature lies in its integration of four fundamental perspectives — environmental, social, cultural, and technological — which are deeply rooted in the ethical sustainability governance framework (Suhardjo et al., 2024). This multidimensional approach recognizes that impactful sustainability cannot be achieved through a narrow, siloed approach, but requires a holistic understanding of an organization's interconnected impacts and responsibilities.

Ethical governance and leadership emerge as the fundamental catalyst in this strategy map, emphasizing that sustainable transformation is fundamentally a leadership-driven process. By placing ethical leadership at the strategic core,

the framework moves sustainability from a compliance exercise to an organizational commitment to responsible and value-driven practices. A critical distinguishing characteristic of this sustainability strategy map is its approach to strategic objective design. Each strategic objective is crafted to be not just aspirational but measurable, with targets and clearly articulated initiatives that provide a concrete roadmap for achievement. This approach transforms sustainability from an abstract concept into a tangible, implementable strategic vision.

The proposed framework offers organizations a robust, dynamic tool for developing and implementing sustainability strategies that are both strategically aligned and ethically grounded. By providing a comprehensive, interconnected approach that balances organizational performance with broader societal and environmental considerations, the sustainability strategy map represents an advancement in strategic sustainability management. Ultimately, this framework serves as a way for organizations to conceptualize their role in creating sustainable value. It challenges traditional notions of corporate strategy by integrating ethical considerations, multidimensional perspectives, and a commitment to holistic, responsible organizational development.

Table 3. Sustainability strategy map

Strategic objectives	Measures	Targets	Initiatives
Financial perspective • Profitable sustainable business models • Sustainable investments and financing strategies			
Environmental perspective • Environmental compliance and certification • Sustainable product design and life-cycle assessment			
Social perspective • Sustainable and ethical consumer impact • Sustainable employee engagement			
Cultural perspective • Preservation of local/indigenous cultural heritage • Local community engagement			
Technological perspective • Sustainable digital infrastructure and operations • Digital security and data privacy			

Source: Authors' elaboration.

4.3. Integrated sustainability performance scorecard

The integrated sustainability performance scorecard framework represents an approach to measuring organizational sustainability performance. Rooted in the ethical sustainability governance framework (Suhardjo et al., 2024) and building upon the balanced scorecard, this new model offers a holistic, single sustainability scoring system that integrates five interconnected perspectives: financial, environmental, social, cultural, and technological.

Unlike traditional performance measurement tools, this framework provides a multidimensional assessment that goes beyond conventional financial metrics to capture the full complexity of organizational sustainability. By strategically aligning performance indicators across these perspectives, the scorecard provides organizations a way to evaluate their sustainability efforts, track progress against ambitious targets, and demonstrate their commitment to responsible business practices.

The framework's strength lies in its ability to facilitate more informed decision-making but also promote transparency, accountability, and continuous improvement in organizational sustainability performance. The scoring system offers a sophisticated yet accessible mechanism for stakeholders to understand an organization's sustainability maturity, potential, and strategic impact, thereby bridging the gap between sustainability aspirations and concrete organizational achievements.

Table 4. Detailed mapping from the balanced scorecard to the integrated sustainability performance scorecard

Traditional balanced scorecard	Integrated sustainability performance scorecard
Financial F1. Revenue growth F2. Profit margin F3. Return on investment	**Financial** F1. Increase revenue percentage from sustainable products/services F2. Increase profit percentage from sustainable products/services F3. Return on sustainable investment and grow sustainable investment portion
Customer *Social and cultural* C1. Customer satisfaction C2. Market share C3. Customer retention	**Environmental** E1. Implement circular economy E2. Reduce greenhouse gas on products/services produced E3. Reduce carbon footprint on supply chain management
Internal business process *Environmental, social, and technological* IBP1. Operational efficiency IBP2. Quality improvement IBP3. Innovation	**Social** S1. Grow sustainable and ethical consumer ecosystem and impact S2. Grow employee engagement in sustainability activities
Learning and growth *Social, cultural, and technological* LG1. Employee satisfaction LG2. Employee skills and capabilities LG3. Innovation and learning	**Cultural** C1. Introduce culturally sensitive in marketing and promotion C2. Introduce local culture specific products/services C3. Implement local community collaboration in the operation location
	Technological T1. Implement robust digital security and data privacy T2. Implement sustainable digital infrastructure and operation

Source: Authors' elaboration.

5. DISCUSSION

To show the practical application of the proposed sustainability strategy map and integrated sustainability performance scorecard, a case study analysis was conducted on three global companies: Kao Corporation, PepsiCo, and Schneider Electric. These companies were selected based on their strong commitment to sustainability and comprehensive sustainability reporting. By examining their sustainability reports, corporate websites, and other relevant materials, this study assesses their alignment with the ethical sustainability governance framework (Suhardjo et al., 2024) and evaluates how they fit with the proposed sustainability strategy map and integrated sustainability performance scorecard framework. This analysis focuses on the alignment of their corporate purpose, vision, mission, values, and sustainability strategies with the principles of ethical sustainability governance. Table 5 provides an overview of these elements for each company.

Kao stands out as the company with the most integrated approach to sustainability (Kao Corporation, 2024). Their corporate purpose, vision, mission, and values are aligned with the ethical sustainability governance framework. The company's 'Kirei Lifestyle Plan' demonstrated a strong commitment to environmental, social, cultural, and technological sustainability. Notably, Kao's consistent recognition as one of the world's most ethical companies by Ethisphere 18 times underscores its dedication to ethical business practices (Ethisphere, 2024). Additionally, all four interconnected pillars, environmental, social, cultural, and technological, are integrated completely into their sustainability strategies and performance measurement (Table 5).

Schneider Electric follows closely behind Kao in terms of alignment with the ethical sustainability governance framework (Schneider Electric, 2024). While lacking a clearly articulated vision and values statement, the company strongly emphasizes ethical governance in its mission and sustainability strategies, particularly through its 'Trust' principle. Schneider Electric's sustainability initiatives are focused on the four interconnected pillars: environmental, social, cultural, and technological. The company's strong emphasis on technological innovation, aligned with its industry, is evident in its sustainability strategies (Table 5). Additionally, the company's recognition as one of the world's most ethical companies by Ethisphere 13 times underscores its commitment to ethical business practices (Ethisphere, 2024).

PepsiCo demonstrates a moderate fit with the ethical sustainability governance framework (PepsiCo, 2024a, 2024b). While the company's vision, mission, values, and sustainability strategies align with ethical principles, the absence of a clearly articulated corporate purpose is notable. Despite this, PepsiCo strongly emphasizes ethical governance through its ethics and governance body and transparently communicates its sustainability performance metrics. Notably, PepsiCo's consistent recognition of Kao as one of the world's most ethical companies by Ethisphere 18 times underscores its dedication to ethical business practices (Ethisphere, 2024). The company's sustainability initiatives encompass the four interconnected pillars: environmental, social, cultural, and technological. Notably, PepsiCo's focus on regenerative agriculture and its commitment to diversity and inclusion, particularly for 'Black' and 'Hispanic' communities, are significant aspects of its sustainability strategy (Table 5).

In summary, all three companies demonstrate alignment with the ethical sustainability governance framework. A detailed content analysis reveals similarities in their sustainability commitments, including ethical governance and leadership, stakeholder engagement, and a multidimensional focus on environmental, social, cultural, and technological aspects. All three companies have also mapped their sustainability initiatives to the United Nations Sustainable Development Goals (UN SDGs) and utilized performance measurement to track progress. However, a deeper analysis reveals varying levels of alignment between the companies' sustainability practices and the proposed sustainability strategy map and integrated sustainability performance scorecard framework. While all three companies demonstrate a degree of fit, Kao stands out with its strong alignment and comprehensive approach to sustainability, integrating it into its business strategy and performance measurement systems.

Table 5. Comparative analysis of purpose, vision, mission, values, and sustainability strategies of three global companies

Sustainability strategy map	Kao Corporation Household products industry	PepsiCo, Inc. Food products industry	Schneider Electric Electrical equipment industry
Purpose	To realize a Kirei world in which all life lives in harmony.	Not available.	To create impact by empowering all to make the most of our energy and resources, bringing progress and sustainability for all. At Schneider Electric, we call this *Life Is On.*
Vision	To be closest to the individual and beyond their expectation.	Be the global leader in convenient foods and drinks by winning with PepsiCo positive (pep+).	Not available.
Mission	As one, we create a Kirei life for all — providing care and enrichment for the life of all people and the planet.	Create more smiles with every sip and every bite.	To be the trusted partner in sustainability and efficiency.
Values	Integrity as the only choice. Yoki-Monozukuri in plan & action. Innovation for today & tomorrow.	Faster. Stronger. Better.	Not available.
Sustainability strategies	Kirei Lifestyle Plan: Making my every day more beautiful. Making thoughtful choices for society. Making the world healthier and cleaner. Walking the right path.	*Positive agriculture*: We are working to source our crops and ingredients in ways that restore the earth and strengthen farming communities. *Positive value chain*: We are helping to build a circular and inclusive value chain. *Positive choice*: We are inspiring people through our brands to make choices that create more smiles for them and the planet.	Act for a climate-positive world. Be efficient with resources. Live up to its principles of trust. Create equal opportunities. Harness the power of all generations. Empower local communities.

Source: Companies' sustainability reporting (Kao Corporation, 2024; PepsiCo, 2024a, 2024b; Schneider Electric, 2024). and the companies' websites (Kao Corporation, n.d.; PepsiCo, n.d.; Schneider Electric, n.d.)

5.1. Kao sustainability report 2024 content analysis

Kao's Sustainability Report and corporate website provide a strong foundation for assessing its alignment with the proposed sustainability strategy map and integrated sustainability performance scorecard. The company demonstrates a strong commitment to sustainability, with a focus on ethical governance and leadership, stakeholder engagement, and a multidimensional approach to environmental, social, and cultural issues. This commitment is evident in its clear articulation of a corporate purpose, mission, and values that align with sustainable development goals.

Kao Corporation Representative Director, President, and Chief Executive Officer quotes:

"*The Kao Way is our corporate philosophy deeply rooted in each employee. Due to this foundation, all activities become consistent and become the driving force that brings together our diverse assets and employee capabilities*" (Kao Corporation, 2024, p. 5).

"*We will focus on maximizing the energy of our employees to further evolve Yoki-Monozukuri from an ESG perspective fueled by creativity and innovation*" (Kao Corporation, 2024, p. 5).

"*We aim to become an essential company in a sustainable world, walking the right path by showing the world how to transition from an economy of quantity to an economy of quality*" (Kao Corporation, 2024, p. 5).

Kao Corporation Director, Managing Executive Officer Senior Vice President, ESG, Global Responsible for Strategic Public Relations quotes:

"*With our commitment to Yoki-Monozukuri with an ESG perspective, Kao will continue to pursue value creation for our consumers through solutions for social issues, as well as optimization of our business operations across the value chain. This will bring*

positive impact to ROIC and EVA and contribute toward our finances" (Kao Corporation, 2024, p. 6).

"*As we pursue K27 and beyond with the vision of "Sustainability as the only path" by embedding ESG strategically into our business, Kao will lead the way in realizing a sustainable world*" (Kao Corporation, 2024, p. 6).

Kao's sustainability strategy, 'Kirei Lifestyle Kao Commitments 2030', is underpinned by a comprehensive assessment of material sustainability risks and opportunities. By mapping these issues to the UN SDGs, Kao has identified 19 key action topics. To address these topics effectively, Kao has implemented a range of initiatives, including the ESG-driven Yoki-Monozukuri College, which focuses on employee engagement. The company's progress toward achieving these goals is monitored through a robust system of key performance indicators (KPIs). This integrated approach, coupled with a strong focus on ethical governance, ensures that Kao's sustainability efforts are aligned with its business activities and positions Kao as a leader in sustainable business practices.

While Kao's sustainability practices align well with the proposed framework, further analysis could delve deeper into the specific linkages between materiality assessments, strategic objectives, and performance metrics. This would provide a more comprehensive understanding of how Kao integrates sustainability into its core business operations and decision-making processes.

5.2. PepsiCo 2023 ESG summary and 2023 ESG performance metrics content analysis

PepsiCo's commitment to sustainability is evident in its ESG summary (PepsiCo, 2024a), which outlines goals and initiatives across ESG dimensions particularly in their sustainability strategies which

are aligned with their vision. This multidimensional approach aligns with the main principles of the proposed sustainability strategy map and integrated sustainability performance scorecard framework. Furthermore, their ethical governance and leadership are well established and properly integrated with their strategies and measure their performance. Additionally, the website mentions progress reports and data on their sustainability efforts, suggesting some form of performance measurement.

PepsiCo Chairman and Chief Executive Officer quotes:

"*In 2021, we introduced a new North Star to guide our work at PepsiCo: pep+ ("PEP Positive"). It's not just a business strategy; it's a transformative journey across our operations, from production to marketing to distribution. It's our vision to deliver a more sustainable, people-centric future, driving growth and value, for everyone*" (PepsiCo, 2024a, p. 2).

PepsiCo Executive Vice President and Chief Sustainability Officer quotes:

"*Since launching pep+ we've been transforming the way we do business to make us more resilient for the future*" (PepsiCo, 2024a, p. 3).

PepsiCo Executive Vice President and Chief Financial Officer quotes:

"*pep+ is at the heart of our business, and we'll aim to continue making the strategic investments needed to future-proof and strengthen our business to drive sustainable growth while promoting positive action for the planet, people and our communities*" (PepsiCo, 2024a, p. 3).

PepsiCo's sustainability strategy is rooted in a comprehensive materiality assessment, which has led to the identification of key focus areas aligned with the UN SDGs. These focus areas include positive agriculture, positive value chain, and positive choices. Each area has specific targets for 2030 and is supported by a range of KPIs to track progress.

Generally, PepsiCo's sustainability practices demonstrate a certain degree of fit with the proposed sustainability strategy map and integrated sustainability performance scorecard framework due to multidimensional sustainability focus and performance measurement. However, a deeper analysis is needed to determine the extent to which its sustainability initiatives are integrated into its corporate purpose since specific information on PepsiCo's corporate purpose is lacking and alignment between purpose and corporate strategies were not reported.

5.3. Schneider Electric 2023 sustainable development report content analysis

Schneider Electric demonstrates a strong commitment to sustainability, with a focus on ethical governance and leadership, stakeholder engagement, and a multidimensional approach to environmental, social, and cultural issues. Schneider Electric's commitment to sustainable innovation and its focus on circular economy principles and comprehensive sustainability scoring system to track progress towards its goals align well with the proposed sustainability strategy map and integrated sustainability performance scorecard framework.

Schneider Electric Chief Sustainability and Customer & Quality Officer quotes:

"*Sustainability initiatives are transformative, and not always quick wins. They're about continuously building on prior achievements and striving for long-lasting, positive impact. And that's what we will do- for the rest of the 2021–2025 program, and beyond*" (Schneider Electric, 2024, p. 2).

Schneider Electric's sustainability strategy is aligned with the UN SDGs and is further operationalized through the Schneider Sustainability Impact (SSI) scoring system and Schneider Sustainability Essentials (SSE). By mapping its sustainability strategies to these frameworks, Schneider Electric ensures that its initiatives contribute to a more sustainable future. A rigorous materiality assessment process helps identify and prioritize the most critical sustainability issues for the company.

However, a deeper analysis is needed to determine the extent to which its sustainability initiatives are integrated into its corporate values since specific information on Schneider Electric's corporate values is lacking and alignment between values and corporate strategies were not reported.

Based on our analysis of three global companies, Kao, PepsiCo, and Schneider Electric, this study reveals the similarities in their sustainability journey and practices. All three global companies demonstrate a strong commitment to sustainability through various initiatives and goals. Each company emphasizes strong ethical leadership, with commitments to ethical business practices and adherence to global standards with slightly different emphases. All of them engage with various stakeholders, including customers, employees, suppliers, and communities. This engagement is often measured through metrics and reported in their sustainability reports.

Furthermore, they address ESG aspects in their sustainability practices and efforts in a very systematic and structured way including the pillars proposed in the ethical sustainability governance framework such as, cultural and technological. They address them in different weight, for example, PepsiCo and Schneider Electric showed a stronger technological initiative aspect while Kao and PepsiCo showed a stronger cultural initiative aspect. They all utilize some form of performance measurement, with reports or data mentioned to track their sustainability practice. Interestingly, Schneider Electric established their own single sustainability scoring system.

Finally, all three global companies demonstrate a comprehensive and integrated approach to sustainability reporting, providing clear narratives on their sustainability initiatives, performance metrics, and future goals. However, Kao stands out as the strongest fit for the proposed sustainability strategy map and integrated sustainability performance scorecard framework. A detailed analysis reveals the following:

Kao: Strong potential fit due to the 'Kirei Lifestyle Plan' mirroring the multidimensional framework and use of KPIs aligned with strategic objectives. Kao's strong integration of sustainability into its strategy and operations, strong alignment between values and corporate strategies, and coupled with its robust performance measurement system, make it a good example for the proposed sustainability strategy map and integrated sustainability performance scorecard framework.

Schneider Electric: Potential fit due to multidimensional sustainability focus and

performance measurement. Schneider Electric's commitment to sustainable innovation and its focus on circular economy principles align well with the proposed sustainability strategy map and integrated sustainability performance scorecard, particularly with its integrated sustainability scoring system (SSI and SSE). However, further analysis is needed to assess the alignment of its values and strategic objectives, as specific information on Schneider Electric's corporate values is lacking.

PepsiCo: Potential fit due to multidimensional sustainability focus and performance measurement. PepsiCo's focus on sustainable agriculture and product innovation aligns with the principles of sustainable development. However, more information is needed to determine the extent to which its sustainability initiatives are integrated into its corporate purpose and strategic objectives, as specific information on PepsiCo's corporate purpose is lacking, and alignment between values and corporate strategies.

Overall, while all three companies, Kao, PepsiCo, and Schneider Electric, demonstrate a commitment to sustainability and have achieved positive ESG ratings from both MSCI and Sustainalytics, Kao appears to be the strongest example for the proposed sustainability strategy map and integrated sustainability performance scorecard framework. Kao's comprehensive 'Kirei Lifestyle Plan' aligns well with the multidimensional nature of the framework, and its strong focus on stakeholder engagement and performance measurement further reinforces its suitability.

While PepsiCo and Schneider Electric also exhibit strong sustainability commitments and practices, their reporting and disclosures could be more comprehensive to fully assess their alignment with the proposed sustainability strategy map and integrated sustainability performance scorecard framework. Greater transparency in reporting on the alignment between their corporate purpose, values, and strategic objectives with sustainability initiatives would provide a clearer picture of their fit with the framework and their overall integrated sustainability performance.

6. CONCLUSION

This study is motivated by the ongoing challenges many organizations face in delivering impactful sustainability performance. One reason for these challenges is the difficulty of integrating sustainability into organizational strategy and performance measurement (Kerr et al., 2015; Zharfpeykan & Akroyd, 2022). Although some scholars have adopted, modified, and proposed the SBSC, integration remains a complex issue (Figge et al., 2002; Hahn & Figge, 2018; Hansen & Schaltegger, 2016, 2018; Jassem et al., 2020; Sands et al., 2016).

To address this challenge, we propose a new framework that integrates materiality assessment, sustainability strategies, and sustainability performance measurement and reporting. Rooted in an ethical sustainability governance framework (Suhardjo et al., 2024) and building upon the balanced scorecard approach, this study introduces a sustainability strategy map and an integrated sustainability performance scorecard framework.

The proposed framework introduces a new approach to strategic sustainability management by fundamentally reimagining traditional strategic frameworks through the lens of ethical sustainability governance. It incorporates five interconnected perspectives: financial, environmental, social, cultural, and technological. Unlike traditional frameworks, this model positions financial performance as a crucial enabler of sustainable integration rather than the sole organizational objective.

Each perspective represents a critical aspect of organizational sustainability: environmental stewardship addresses ecological responsibilities, the social perspective focuses on stakeholder engagement and human-centric practices, the cultural perspective ensures organizational values and sensitivity to local contexts, and the technological perspective drives innovative solutions for sustainable transformation. These perspectives are not standalone elements but intricately interconnected components.

A critical distinguishing characteristic of this proposed framework is its approach to strategic alignment between materiality, sustainability strategies, and performance measurement and reporting across five interconnected perspectives. The framework's strength lies in its ability to translate complex sustainability strategies into measurable, actionable insights, drawing inspiration from leading sustainability organizations like Kao, Schneider Electric, and PepsiCo. Additionally, this study offers practical guidance on mapping from the balanced scorecard to the new sustainability strategy map and integrated sustainability performance scorecard framework.

This study contributes to our understanding of sustainability and performance measurement systems. However, as a conceptual paper, it relies on existing frameworks and approaches, which pose certain limitations. To mitigate this, the study assesses the sustainability practices of three leading sustainability corporations. Nevertheless, the framework's applicability may vary across different organizational cultures and geographic regions. To further enhance our understanding of ethical sustainability governance, future research should focus on empirical studies and case studies.

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