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ORGANIZING FOR SUSTAINABILITY ORGANIZATION STRUCTURE, ROLES, AND SKILLS

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Dedica

To my family, thank you for always being there for me every step of every journey. I could not have done this without your love and support.

To my friends, thank you for making the journey enjoyable.

To my teachers and mentors, I appreciate all the guidance and encouragement. Your wisdom has shaped this work.

This thesis is dedicated to all of you with sincere gratitude.

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Introduction and Summary

In an era of global challenges such as climate change, social inequality, and corporate accountability, the demand for organizations to adopt sustainability is all-encompassing. It is not just about the environment. It is about social responsibility and economic efficiency, too. Organizations worldwide are making sustainability a top priority, driven by mounting environmental challenges, social disparities, and the need for long-term economic sustainability. In a business context, sustainability means implementing strategies and practices that meet current needs while ensuring the ability of future generations to meet their own needs. This holistic approach integrates environmental protection, social responsibility, and economic efficiency, often summarized under the Environmental, Social, and Governance (ESG) criteria.

The thesis, 'Organizing for Sustainability: Organizational Structure, Roles, and Skills,' comprehensively explores the intricate processes and frameworks required to integrate sustainability into organizational settings. It thoroughly examines the link between governance, organizational structures, roles, skills, and standardization practices, providing comprehensive advice for businesses aiming to effectively and comprehensively incorporate sustainable practices. The thesis is a robust guide on how organizations can incorporate sustainable practices effectively and comprehensively, underscoring the importance of governance, organizational structure, roles, skills, and standardization practices in achieving this goal.

Chapter 1 provides a comprehensive literature review on Environmental, Social, and Governance (ESG) criteria, laying the foundation for understanding the multifaceted nature of sustainability in organizational contexts. It begins by introducing the ESG framework and detailing its components and significance. The chapter then explores related frameworks, including sustainability and Corporate Social Responsibility (CSR), to contextualize ESG within broader sustainability efforts. It examines the importance of ESG data and ratings in evaluating organizational performance and transparency. A significant focus is placed on governance (G) within ESG, discussing its conceptual underpinnings and crucial role in driving ESG performance by ensuring accountability,

ethical decision-making, and stakeholder engagement. Finally, the chapter looks at future directions for ESG, identifying emerging trends and potential areas for further research. Through this review, the chapter highlights the evolving landscape of ESG and its critical importance in shaping sustainable business practices.

Chapter 2 explores the relationship between organizational structures and sustainability, highlighting the importance of designing frameworks that support sustainable practices. It begins by discussing traditional organizational structures, often hierarchical and rigid, and contrasts them with emerging structures more flexible and conducive to sustainability, such as networked and matrix structures. The chapter then identifies the internal factors influencing the adoption of sustainable organizational structures, including organizational culture, leadership commitment, and resource availability, as well as external factors like regulatory pressures, market demands, and societal expectations. It further examines how these structures impact sustainability reporting, emphasizing the need for transparency and accountability in disclosing sustainability performance. Through this analysis, the chapter underscores the necessity of aligning organizational structures with sustainability goals to achieve long-term success and resilience.

Chapter 3 delves into the pivotal roles that various organizational stakeholders play in fostering sustainability, emphasizing the collective effort required for effective implementation. It begins by categorizing stakeholders into primary and secondary groups, with primary stakeholders such as employees, customers, investors, and suppliers directly involved in and affected by the organization's operations. In contrast, secondary stakeholders like local communities, NGOs, regulatory bodies, and the media influence sustainability from an external perspective. The chapter then explores the proactive roles of stakeholders who drive sustainability initiatives through leadership and advocacy, the reactive roles of those who respond to external pressures and challenges, and the mixed roles that combine elements of both proactive and reactive approaches. Additionally, it examines factors influencing stakeholders' roles, including organizational culture, values, and resource availability, highlighting how these elements shape the engagement and effectiveness of stakeholders in promoting sustainability within the organization.

Chapter 4 examines the essential skills necessary for achieving organizational sustainability, emphasizing soft and technological competencies. The chapter begins with an introduction to the critical role of skills in fostering sustainable success. It then delves into soft skills, highlighting the importance of critical thinking and problem-solving, initiative and entrepreneurship, collaboration, and leading by influence as critical drivers for sustainable practices. The discussion moves to technological skills, focusing on the relevance of advancements such as artificial intelligence (AI), nanotechnology, and robotization in enhancing sustainability efforts. Additionally, it outlines strategies for developing these technological skills within the workforce. The chapter also covers the measurement and evaluation of sustainability skills, emphasizing the need for robust assessment methods to ensure that these competencies are effectively cultivated and applied. Through this comprehensive analysis, the chapter underscores the importance of a skilled workforce in driving and maintaining organizational sustainability.

Chapter 5 explores the critical role of standardization in fostering organizational sustainability, examining its processes, impacts, and effectiveness. It begins with an introduction to the concept of standardization of sustainability practices, emphasizing the importance of establishing consistent frameworks and guidelines to promote sustainability across organizational operations. The chapter then analyzes the factors influencing the standardization process, including regulatory requirements, industry norms, stakeholder expectations, and internal organizational dynamics. It discusses methods for measuring the effectiveness of standardized sustainability practices, highlighting key performance indicators (KPIs) and assessment frameworks that ensure accountability and continuous improvement. Furthermore, the chapter explores the benefits of standardized sustainability practices, such as enhanced transparency, reduced operational risks, improved stakeholder trust, and streamlined reporting. It summarizes the implications of standardized sustainability practices for organizations aiming to achieve long-term environmental, social, and economic sustainability goals. Through this analysis, the chapter underscores the significance of standardization as a strategic tool for embedding sustainability into organizational culture and operations.

In conclusion, this thesis underscores the complexity and necessity of organizing for sustainability in modern business environments. Examining ESG, organizational structures, roles, skills, and standardization provides a comprehensive framework for businesses to integrate sustainability into their core operations. The findings highlight the importance of a holistic approach, where strategic governance, supportive structures, clearly defined roles, skilled personnel, and standardized practices work harmoniously to achieve sustainable outcomes. This research contributes to the academic discourse on sustainability and offers practical insights for organizations seeking to navigate the imperative of sustainability and create long-term value for all stakeholders.

1. ESG: A literature review

1.1 Introduction

In recent years, especially after the fiscal crisis of 2008, ESG has become a key concept and a global trend guiding corporate behaviors and an integral part of an organization's business model. According to Dathe et al. (2022), *"ESG is becoming a mainstream corporate initiative to save and maintain our resources"* (p. 117). Encompassing environmental, social, and governance considerations, it incorporates organizations' diverse non-financial and operational standards, offering a framework to evaluate its social responsibility and reflect the values of socially conscious investors (Ballester Climent, 2022).

This dynamic process aligns with evolving ethical and sustainable standards and underscores organizations' accountability to stakeholders, confirming their societal impact (Krishnamoorthy, 2021). It usually involves an organization's voluntary efforts and actions rather than being imposed by local and international regulations. Investors often use responsible or impact investing to study and judge how companies behave and what financial results they might achieve (Dathe et al., 2022).

While integrating ESG into business practices is a laudable goal, it has challenges. This review will delve into these potential pitfalls, highlighting the importance of governance in ESG and the necessity for robust corporate governance to navigate these challenges and mitigate associated risks (Monda & Giorgino, 2013).

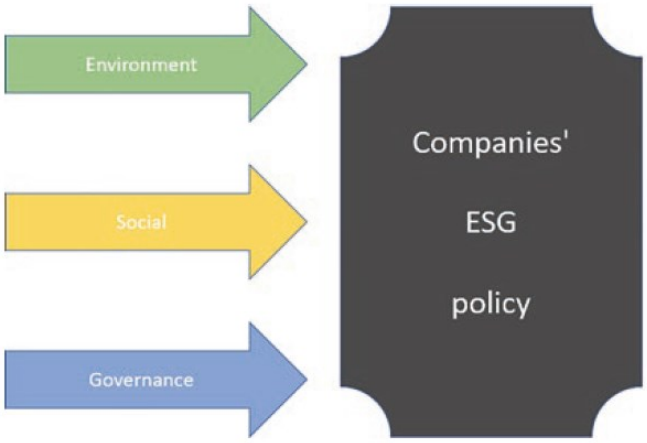
This chapter aims to examine ESG and its integration into organizations' activities while showing the expected role of ESG in shaping and improving the business sector and the world at large, environmentally, societally, and economically, despite challenges or problems that might arise.

1.2 ESG Framework

The ESG framework encompasses three dimensions: environmental, social, and governance (Johnson et al., 2020):

- The environmental dimension focuses on a company's interaction with the environment, including evaluating its impact on air and water quality, energy efficiency, waste management, etc. It also considers climate change, circular economic practices, and deforestation.
- The social dimension examines the relationship between an organization, stakeholders, and society. Social factors include labor practices, human rights, diversity and inclusion, employee health, etc.
- The governance dimension focuses on a company's management, governance, and control. This encompasses analyzing the board structure and composition, shareholder rights, tax fairness, risk management protocols, political engagement, and more.

Figure 1 ESG Framework (Dathe et al., 2022)



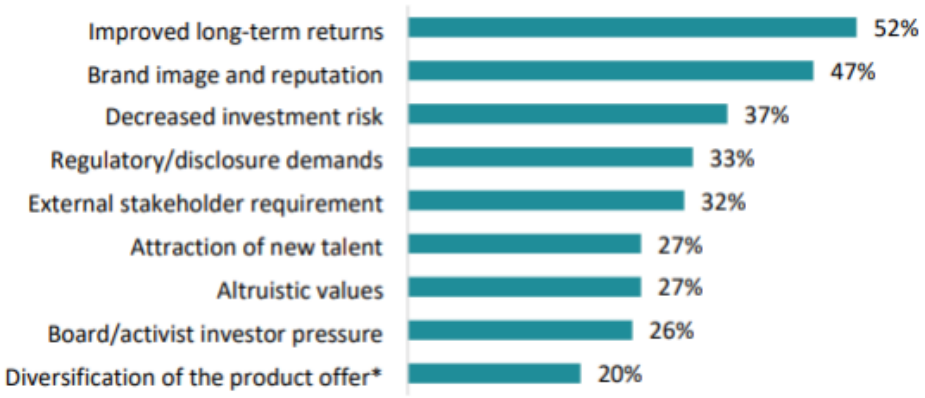
ESG factors significantly influence shareholder value, pushing companies to go for environmentally friendly alternatives, consider every dimension, and integrate ESG principles in investment processes and strategies (Dathe et al., 2022).

Moreover, in the current globalization and digitalization era, where social media platforms share information and opinions that easily influence worldwide users, organizations face much pressure to proactively address ESG issues in their business

practices. They are driven to establish robust and effective ESG strategies and policies to maintain and improve their brand reputation, enhance satisfaction, loyalty, and trust among stakeholders, and attract potential ones, thereby minimizing legal and financial consequences (Dathe et al., 2024).

Therefore, in addition to a survey conducted by the Organization for Economic Cooperation and Development (OECD), integrating ESG practices played a crucial role in organizations' performance, offering multiple benefits on all levels and making them initiative-taking towards this integration (Ballester Climent, 2022).
For this reason, effective ESG strategy and communication create a competitive edge, added value, and better long-term performance for organizations, especially in industries where sustainability has become a crucial success factor.

Figure 2 Main drivers of ESG integration in corporate performance (Ballester Climent, 2022)



1.3 ESG-Related Frameworks

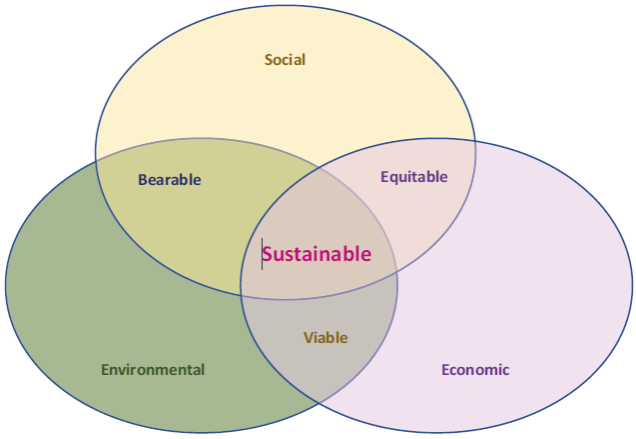
1.3.1 Concept of Sustainability: The Three-Pillar Model

Throughout the years, society has been placing greater emphasis on sustainability and sustainable business practices, which aligns with the growing importance of the Environmental, Social, and Governance (ESG) framework (Dathe et al., 2024). Dathe et al. (2024) describe sustainability, as outlined in the Brundtland report Our Common Future by the World Commission on Environment and Development (WCED), as a development approach that fulfills current societal needs without hindering future generations from meeting their own needs (p. 23).

The three-pillar model, introduced by Elkington in 1998, offers an overall framework for sustainable development and ethical impact assessment. It includes three pillars: environmental, social, and economic (Dathe et al., 2024):

- The environmental pillar focuses on environmental protection and conserving natural resources over time, which is connected to the ecological dimension.
- The social pillar focuses on people's and communities' wellbeing, thereby connected to the social dimension.
- The economic pillar focuses on a company's economic activities to maintain and foster long-term economic well-being by balancing economic growth, resource efficiency, social equity, and financial stability related to governance.

Figure 3 Three-Pillar Model of Sustainability (Dathe et al., 2024)



Therefore, this framework demonstrates how the three aspects of sustainability are interconnected, noting that an ultimate sustainability approach must have a good balance between environmental, economic, and social goals (Dathe et al., 2024).

1.3.2 Corporate Social Responsibility

Although people have long been concerned about the adverse effects of business practices, this issue began to draw significant societal attention only in the mid-twentieth century (Dathe et al., 2024).

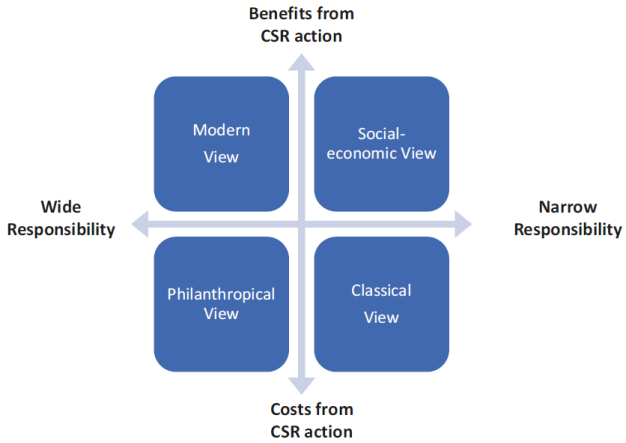
Corporate Social Responsibility (CSR) refers to organizations' dedication and commitment to fostering sustainable economic growth, which enhances well-being and benefits both the business and overall development (Shapsugova, 2023).

- Carroll's CSR Pyramid (1979) is a model organizations use to communicate effectively with stakeholders. It enables them to clearly articulate their CSR activities and ethical approaches through a hierarchical classification: economic, legal, moral, and philanthropic responsibility (Dathe et al., 2024).

Figure 4 Carroll's Four-Step CSR Pyramid (Dathe et al., 2024)

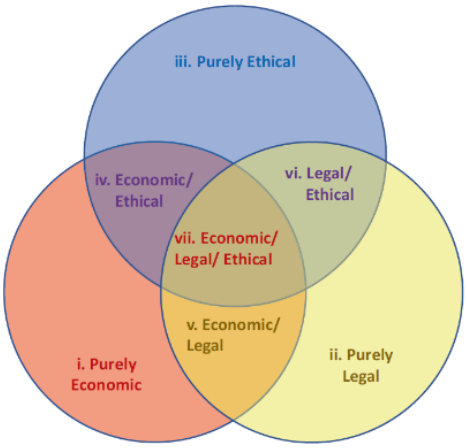
- Two-Dimensional Model of Quazi and O'Brien: a broad framework an organization uses to define and categorize CSR characteristics, features, and strategies (Dathe et al., 2024).

Figure 5 Two-Dimensional Model of Quazi and O'Brien (Dathe et al., 2024)



- Carroll and Schwartz's three-domain model is an additional model to organizations' four-step CSR pyramid model that eliminates some limitations (Dathe et al., 2024).

Figure 6 Three-Domain Model by Carroll and Schwartz (Dathe et al., 2024)



Integrating ESG metrics and CSR strategies in an organization leads to a more comprehensive approach to sustainability that enhances its reputation and contributes to long-term financial performance and resilience. This, in turn, proves that sustainable growth and positive societal impact can be achieved through ethical business practices.

1.4 ESG Data and Ratings

Over time, investors needed guidance in comparing, evaluating, and ranking organizations regarding their ESG performance. This is why ESG data providers, who collect and sum scores of ESG factors both separately and collectively through several ways, such as reviewing a company's public documents and annual reports, websites, and other stakeholders and data sources, created ESG ratings (Rau & Yu, 2024).

In the 2020s, some of the leading ESG data providers included (Rau & Yu, 2024):

- MSCI: Known for its ESG ratings and indices, it evaluates companies' resilience on various environmental, social, and governance criteria to help investors understand and manage ESG risks. With a reach of 8,500 companies and over 680,000 equity and fixed-income securities, it is recognized as one of the largest and most independent sources globally.
- Refinitiv: A global financial market data provider that offers comprehensive ESG data and ratings covering more than 600 diverse ESG metrics derived from publicly available information such as CSR reports, company websites, annual reports, etc., focusing on transparency and comparability.

- S&P Global: This agency provides ESG scores across over 8,000 companies based on a precise corporate sustainability assessment through verified company disclosures and in-depth company analysis. It integrates these scores into various indices to guide responsible investing.

However, these ratings and data were followed by several things that could have been improved. For instance, as the demand for ESG data increased and the ESG information disclosure requirements became stricter, the quality and reliability of such data were affected. The ESG metrics used in reports might be "greenwashed," where companies might misrepresent or exaggerate their ESG performance to appear more environmentally or socially responsible than they are (Rau & Yu, 2024.).

In addition, they are often considered inconsistent as they vary from different countries, which may lead to disagreements between different ESG rating agencies and confusion for investors. Similarly, company size and sector bias also lead to such disputes. For example, larger firms tend to have better resources and capacity to prepare more detailed and comprehensive ESG reports, which leads to higher ESG scores. Also, the normalization of ESG ratings within the same industry, which is expected to ensure comparability, may oversimplify the complexities within sectors, leading to sector bias in the assessments and disadvantaging industries of more significant environmental and social impacts despite their efforts to improve sustainability (Rau & Yu, 2024).

Therefore, while ESG ratings serve as valuable tools for investors to assess companies' environmental, social, and governance performance, challenges such as data quality, consistency, and industry biases persist. As demand for ESG data grows, efforts to enhance transparency, standardization, and accuracy are crucial for ensuring informed decision-making and promoting sustainable investing practices.

1.5 Governance (G) in ESG

1.5.1 Concept of Governance

According to Monda & Giorgino (2013), corporate governance within ESG is described as the system that manages and controls firms through market and regulatory mechanisms, which dictate company management practices, stakeholder relationships, and organizational goals (p. 2).

It encompasses every aspect of an organization's management and control. It covers the mission, vision, and purpose of an organization, the policymaking and decision-making, the rights and responsibilities allocation among various stakeholders, and other aspects and areas that have all become core issues in the corporate governance structure of an organization. More broadly, it refers to organizations' rules, frameworks, practices, and processes, allowing shareholders to exert control and influence over management, aiming to ensure alignment of organizations' decisions and stakeholders' interests (Dathe et al., 2024).

Governance has many components: authorities and regulators, board of directors, shareholders, and managerial incentive compensation plans, each of which has created a literature of its own. Other components, the external community's interested parties, are investors, suppliers, employees, and others. Each party, according to its investment, is interested in either the financial or social performance of the organization or even both (Monda & Giorgino, 2013).

For this reason, managers in an organization have the responsibility to protect and prioritize the interests of shareholders, especially in the aspects below (Dathe et al., 2024):

- Duty to act for the company's benefit: Managers' decisions should promote the organization's well-being, considering both short-term financial performance and long-term survival.
- Professional duty: Managers' skills and expertise should be utilized efficiently and effectively to run the company successfully.
- Duty of care: Managers are legally obligated to act with due diligence in conducting corporate activities.

However, in practice, the principal-agent problem emerges from the fundamental conflict of interest and information asymmetry that exists between shareholders and managers, referred to as agents and principals, respectively (Dathe et al.,2024):

- Conflict of interest: when managers' interests conflict with those of shareholders.
- Information asymmetry: As managers understand business operations more deeply, shareholders might not fully understand the effects of management's decisions.

Therefore, communicating effectively with stakeholders is critical to addressing the principal-agent problem. It enhances responsibility for management decisions and promotes stakeholder engagement. Transparent ESG reporting is vital in this context, allowing businesses to communicate their ESG performance and commitment.

1.5.2 Role of Governance (G) in ESG Performance

Sometimes, the (G) element is forgotten or ignored when analyzing ESG factors because the main spotlight, especially by the media, is focused on the environmental and social factors first; however, solid governance is the essential base for creating an effective ESG strategy that drives sustainability.

In recent years, organizations have increasingly embraced governance mechanisms to integrate ESG considerations into their decision-making and operations. These mechanisms involve creating ESG metrics, committees, or task forces influencing executive compensation, adopting sustainability reporting frameworks, and engaging stakeholders about key ESG issues (Dathe et al., 2022).

The relationship between governance practices and ESG performance has been explored through numerous studies that suggested that companies with solid governance structures and practices reach higher levels of environmental stewardship, social responsibility, and ethical behavior (Monda & Giorgino, 2013).
For instance, independent boards, diverse leadership teams, and transparent practices are examples of effective governance mechanisms linked to improved and better ESG outcomes and financial performance. Contrarily, firms with weak governance systems, such as lack of board independence, inadequate risk management, and lack of stakeholder engagement, are more susceptible to environmental controversies, social conflicts, and ethical failures, which can damage their ESG reputation and undermine shareholder value (Monda & Giorgino, 2013).

Therefore, organizations who are aiming to improve their ESG governance and impact should think about designing and implementing processes to record progress and accountability, creating a road map that establishes and documents ESG strategy as part of their business strategy with a strong focus on priorities and SMART goals, and most importantly intentionally incorporating ESG and communicating its vision and plans to

investors and employees alike. However, although the application of ESG principles to business practices and activities demonstrates significant opportunities and benefits, with such integration, organizations might encounter some challenges (Shapsugova, 2023):

- Inconsistent Reporting Standards: Organizations' reporting of ESG data is inconsistent, making it difficult for investors and stakeholders to assess and evaluate ESG performance. This affects data quality and availability.
- Short-term vs. Long-term Goals: Organizations tend to focus on short-term financial results, which might contradict ESG goals that require significant initial investment and may take years to show positive results.
- Regulatory Differences: ESG regulations and standards vary across countries, which creates challenges for multinational organizations in applying ESG principles consistently across different regions.

1.6 ESG Future Directions

Several significant developments are shaping the future of Environmental, Social, and Governance (ESG) principles. One of which is the increase in regulatory oversight. Since societies are more widely recognized environmental, social, and economic issues, regulations ensuring businesses meet ESG standards are becoming stricter. This drives organizations to demonstrate greater accountability and transparency as they must adapt and comply with them (Shapsugova, 2023).

In addition, ESG factors are drawing greater attention from investors, who consider these factors when making investment choices. This encourages companies to align their business practices and activities with investor expectations and recognize the importance of sustainability and ethical conduct (Dathe et al.,2024).

Moreover, advancements in ESG reporting and disclosure will improve standardization, driving organizations to emphasize social and governance aspects and enhancing their ability to measure and manage ESG performance (Shapsugova, 2023).

Finally, new sustainable business models are emerging. For instance, concepts like the circular economy and sustainable consumption are becoming more noticeable,

encouraging businesses to reconsider their practices and activities and align them with sustainability and social responsibility (Dathe et al.,2024).

1.7 Conclusion

The Environmental, Social, and Governance (ESG) framework has become crucial for assessing and evaluating an organization's commitment and eagerness to sustainability and social responsibility. This comprehensive approach, focusing on environmental factors such as climate change, social aspects like labor practices, and governance like board oversight, gives organizations an adaptable framework to align with evolving ethical standards and societal expectations.

Furthermore, organizations are realizing the benefits of incorporating ESG principles into their business strategies for competitive advantages, driven by their influence on shareholder value, brand reputation, and customer satisfaction. Companies that successfully integrate ESG can improve long-term value, operational efficiency, stakeholder engagement, and financial performance. Similarly, transparent ESG reporting is essential for effective governance and promoting responsible corporate behavior.

Finally, although integrating ESG principles, social responsibility, and corporate sustainability into business practices may be challenging, organizations that do so can gain significant long-term benefits.

2. Organization Structures and Sustainability

2.1 Introduction

Organizational sustainability, a key imperative in today's global environmental, social, and economic challenges, is about more than survival. It is about maintaining an organization's core principles and purposes over time, despite evolving external and internal factors, to ensure longevity (Bateh et al., 2013). This requires a vision firmly focused on achieving sustainability by promoting and implementing sustainability initiatives from top to bottom. Therefore, organization structures, which are crucial for the overall success and effectiveness of the company, are designed in alignment with sustainability strategies (Mohd et al., 2019).

Organizational structure, a framework influencing an organization's activities, is the backbone of its functioning, from task coordination to decision-making and information flow. It achieves clarity and direction by defining roles and responsibilities, reporting relationships, and establishing and implementing policies and procedures, leading to greater efficiency and effectiveness (Ahmady et al., 2016). However, traditional organizational structures face significant challenges in adapting to modern sustainability demands. This has led to a growing recognition of the need for alternative innovative structures better suited to promote sustainability goals (Vargas-Hernández, 2021).

This chapter delves into organizational sustainability, explicitly focusing on organizational structures. We aim to understand better different sustainability structures and their relationship with sustainability goals. We will also consider internal and external factors that might influence adopting such structures and their influence on sustainability reporting.

2.2 Types of Organizational Structures for Sustainability

Organizational structures are shaped by established rules and role incumbents' discretion, with the potential for alteration and modification (Sandhu & Kulik, 2019). In pursuing sustainability, organizations must carefully consider how their structures support or delay their ability to integrate environmental, social, and economic considerations into their core activities. For instance, excessive adherence to structure can suppress creativity and innovation, while excessive freedom can result in ambiguity and disorder (Sandhu &

Kulik, 2019). Therefore, it is essential to understand the key dimensions that shape organizations.

On the one hand, formalization, defined as the level of codification and standardization of rules, processes, and procedures within an organization, provides clarity, consistency, and predictability in operations since it includes clear guidelines on task performance, decision-making, and employee relations. However, this may also limit flexibility and adaptability in dynamic environments (Maine et al., 2022).

On the other hand, centralization, defined as authority concentration of decision-making at high-level management within the organization, provides strong governance and direction since critical decisions are typically made by a few individuals or a central authority. However, it may also affect innovation, employee autonomy, and responsiveness to changing circumstances (Maine et al., 2022).

Therefore, organizations can better understand the underlying principles that shape their structures and how they influence sustainability efforts by considering these two dimensions—formalization and centralization—and implementing them efficiently and effectively.

2.2.1 Traditional Structures

Traditional structures have long been common in many industries, providing clear and well-defined hierarchies, roles, and reporting lines.

Functional Organizational Structure

The *Functional Organizational Structure* is one of the most common traditional structures whereby employees are grouped based on their specialized skills or similarity of work functions (e.g., HR, IT, accounting), and it is typically implemented when there is a high need for separation (Ahmady et al., 2016). This structure can promote sustainability by strategically organizing employees and grouping sustainability expertise and resources within specific functional areas and teams. Accordingly, organizations can effectively identify and implement best sustainability practices to focus efforts on critical goals such as energy efficiency, waste reduction, and CSR. Moreover, through collaboration and coordination across functions, different departments can efficiently

collaborate on sustainability initiatives and adapt to complex sustainability challenges. Therefore, a functional structure plays a vital role in an organization's sustainability integration and achieving long-term environmental, social, and economic goals.

Divisional Organizational Structure

Another traditional structure is the *Divisional Organizational Structure,* which divides the company into separate divisions responsible for a specific product, service, or geographic region. It is usually used to transfer the top manager's decisions and responsibilities to central staff, which ensures the organization's alignment with the environment and strategy (Ahmady et al., 2016). Therefore, this structure enhances sustainability as the divisions' autonomy enables them to tailor their initiatives concerning their unique contexts and divisional focus and allocate resources efficiently. Additionally, with the separation of divisions, organizations can assess and address the environmental, social, and economic effects on their operations more effectively and efficiently and target their efforts accordingly. Moreover, a divisional structure allows divisions to exchange their beliefs, experiences, expertise, etc., facilitating knowledge sharing and collaboration on sustainability ideas, best practices, and lessons learned. Hence, by leveraging this structure's strengths to focus on sustainability, organizations can achieve more significant impact and relevance in their sustainability efforts, contributing to more meaningful and sustainable outcomes.

Matrix Organizational Structure

Matrix Organizational Structure is also a traditional structure commonly used that is an efficient and flexible combination of aspects of both functional and divisional structures. In this structure, employees report to functional and project or product managers with multiple lines of authority and accountability (Ahmady et al., 2016). Accordingly, this creates an opportunity for cross-functional collaboration and integration of expertise from various departments and disciplines to assess the environmental impact and allocation of resources of sustainability projects while developing comprehensive and innovative solutions to sustainability challenges. In addition, a matrix structure fosters communication and coordination among employees, departments, and projects, enhancing sustainability efforts' efficiency and effectiveness and ensuring sustainability goals are effectively communicated, progress is monitored, and obstacles are addressed,

driving more significant impact and results. Moreover, as employees work on multiple projects simultaneously and report to different managers, this provides adaptability and flexibility to respond to changing sustainability priorities and dynamics. This, in turn, allows quick resource allocation, priorities adjustment, and scaling of sustainability initiatives in response to evolving environmental, social, and economic conditions. Therefore, this structure enables organizations to drive innovation and impact in sustainability efforts to stay ahead of emerging trends and challenges for continuous progress.

2.2.2 Emerging Structures

Modern and innovative structures are emerging tailored to integrate environmental, social, and economic considerations into businesses' core operations.

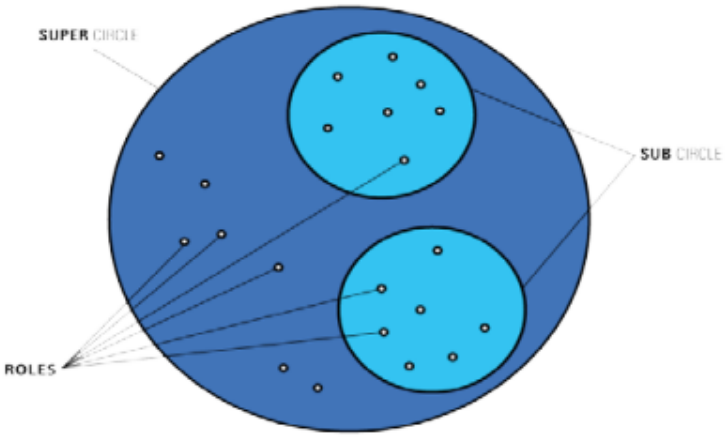
Network Organizational Structure

An emerging organizational structure, usually due to rapid technological changes, market fragmentation and specialization, and products' short life cycles, is the *Network Structure* whereby organizations form partnerships and collaborate with external stakeholders (Ahmady et al., 2016). Through these partnerships, organizations can address complex sustainability challenges, leverage diverse perspectives and capabilities, and have access to shared resources, expertise, and networks. This, in turn, leads to more effective and innovative solutions and sustainability initiatives. Additionally, such networking can help organizations reach larger audiences, expanding their sustainability efforts and initiatives to create a positive impact on a scale. Therefore, organizations with a network structure can develop more innovative, inclusive, and resilient approaches to sustainability that benefit the organization and society.

Holacracy Organizational Structure

Another non-traditional organizational structure is *Holacracy,* a purpose-driven structure that makes organizations lean, adaptable, and practical while distributing authority and decision-making power across self-organizing teams or "circles" and focusing on job roles rather than titles (Van De Kamp, 2014, p. 4). This structure empowers employees to identify sustainability opportunities and initiatives, implement them, and proactively address any upcoming challenge autonomously within their areas of expertise. Moreover, holacracy fosters innovation and experimentation that favors sustainability and promotes continuous learning and improvement through feedback, reflection, and adaptation. Additionally, by providing a decentralized decision-making authority, this structure helps organizations embed sustainability efforts and initiatives within their culture, ensuring alignment with their purpose and values. Therefore, this approach to sustainability management helps organizations refine their strategies through separate phases, learn from successes and failures, and drive continuous progress toward sustainability goals.

Figure 7 Example of a general company circle with sub-circles (Van De Kamp, 2014)



Circular Economy Organizational Structure

Circular Economy Structure is another emerging structure whereby organizations must reimagine their traditional supply chains and adopt innovative business models that prioritize sustainability and environmental stewardship—for instance, establishing closed-loop systems where resources and materials are continuously reused, recycled, and regenerated throughout their life cycles to achieve waste minimization and efficiency maximization, contributing to a more sustainable and resilient economy (Bertassini et al., 2021). In addition, such a structure fosters collaboration and partnership between organizations and stakeholders to create a closed-loop economy linked with sustainability on multiple levels. This, in turn, can leverage collective expertise, resources, and

influence to drive systemic change (Sehnem et al., 2022). Therefore, such a structure allows organizations and stakeholders to create sustainable, beneficial, long-term impacts.

2.2.3 Conclusion

In conclusion, organizational structures are vital in influencing sustainability initiatives within organizations. Traditional structures have been widely used in various industries for a long time; however, new creative structures are emerging to promote and implement sustainability in organizations innovatively. Therefore, combining traditional and modern structures would benefit organizations, the environment, and society for future generations.

2.3 Factors Influencing the Adoption of Sustainable Organizational Structures

As mentioned, organizations increasingly recognize the importance of considering environmental, social, and economic principles to achieve sustainability objectives. Therefore, adopting sustainable organizational structures is crucial. However, such adoption is influenced by external and internal factors that shape these organizational structures and determine how they integrate these considerations into their core business operations.

2.3.1 Internal Factors

The adoption and shaping of sustainable organizational structures are affected by various internal factors, including organization size and age, culture, and leadership commitment. They influence the organization's readiness and ability to embrace sustainable practices.

- Leadership Commitment: Leadership commitment is one of the primary factors for driving organizational change and fostering a culture of sustainability. Leaders who demonstrate a solid commitment to sustainability goals and initiatives reflect a sense of direction and guidance for the organization from the top down. This, in turn, builds trust in the organization and empowers and motivates employees to go to the next level (Galpin & Lee Whittington, 2012). Moreover, such commitment often grants managers the discretion to prioritize sustainability initiatives, allocate resources

towards sustainable practices, and implement policies that align with sustainability goals, which can impact organizational outcomes (Sandhu & Kulik, 2019).

- Organizational Culture: Organizational culture encompasses shared values, beliefs, and behaviors that form an organization's identity. Organizations should develop a culture that encourages and supports innovation, flexibility, and change to achieve sustainability rather than resist it. Therefore, it is essential to integrate environmental, social, and economic considerations into its core values and practices, from its leadership to its operational processes, through open and transparent communication while fostering a sense of responsibility among employees (Vodonick, 2018). With such a culture, the organization's structure will change in terms of its power and its internal and external relationships, paving the way for long-term sustainability.

- Organization Size and Age: Both size and age can also influence the adoption of sustainable organizational structures depending on each organization's context and internal dynamics. For example, large organizations have more resources and capacities to invest in sustainability initiatives; however, they might face complexities, bureaucracy, and even resistance to change by employees and stakeholders (Sandhu & Kulik, 2019). Similarly, newer organizations are more flexible and agile towards the adoption of sustainable organizational structures; however, they might lack the required resources and expertise (Wang et al., 2023).

2.3.2 External Factors

External factors also significantly impact the adoption of sustainable organizational structures; these include regulatory environment, market pressures, and stakeholder expectations, which shape the external context within which organizations operate and influence their approach to sustainability.

- Regulatory Compliance: The regulatory environment drives organizations to adopt sustainable structures. For instance, regulations often mandate CSR reporting and adherence to sustainability standards, such as ISO 14001 or the Global Reporting Initiative (GRI) (Vigneau et al., 2015). For instance, environmental regulations, such as emissions standards and waste disposal requirements, drive organizations to incorporate sustainability into their activities to meet compliance and avoid legal

repercussions. Furthermore, organizations should continuously review and revisit their structures to attain the best framework that complies with the changing laws, regulations, and standards (Atkinson & Leandri, 2005). Therefore, this pushes organizations to embrace sustainability proactively, positioning it as a core aspect of their organizational structure and strategy.

- Market Pressures & Stakeholder Expectations: Organizational change often comes as a response to changes in the market and stakeholders' demands, which is a part of the external environment. For instance, nowadays, an organization's responsibility is to ensure that its operations and practices respect and meet sustainability criteria due to the pressure exerted by consumers who are sustainability advocates. This will enable organizations to maintain and improve their reputation through customer satisfaction and competitiveness and explore new opportunities in the market (Poisson-de et al., 2015). Moreover, investors are now more interested in investing in organizations that embrace sustainability and adopt sustainable practices along all phases and stages, such as resource usage and allocation, waste reduction, sustainable procurement, etc. This, in turn, satisfies stakeholders in general and attracts more investment capital (Fischer et al., 2020).

2.3.3 Conclusion

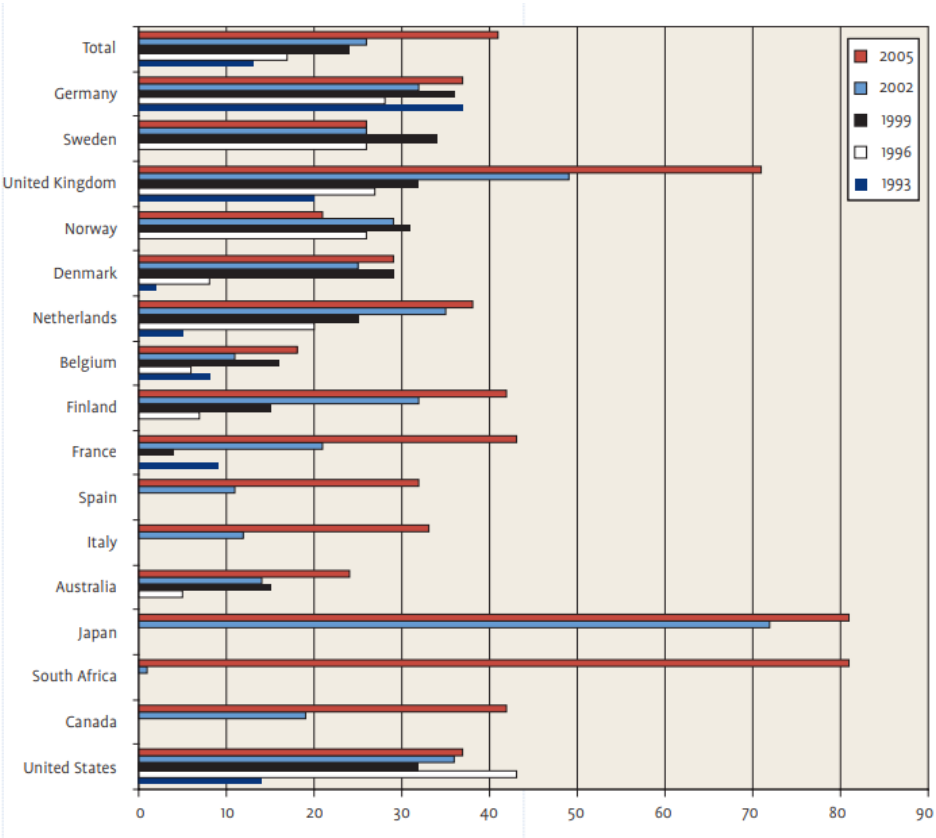
In conclusion, external and internal factors influence the adoption of sustainability structures, impacting organizations' sustainability initiatives. Therefore, absorbing these factors, understanding them, and addressing them will enhance an organization's ability and willingness to embrace and promote sustainability from top to bottom and contribute to long-term sustainability environmentally, socially, and economically.

2.4 Organizational Structures and Sustainability Reporting

As embracing and promoting sustainability in an organization is increasingly playing a vital role in achieving long-term success, the need for reporting sustainability data has become essential to track and communicate environmental, social, and governance (ESG) performance as nowadays, internal and external stakeholder, need non-financial data as much as they need financial data or even more. Therefore, disclosure of sustainability information reduces the likelihood of fraudulent practices, enabling investors to make

informed decisions, mitigate risks, and minimize potential financial and reputational damages within an organization (Çalıyurt, 2020).

Figure 8 Sustainability Reporting (Kolk, 2005)



The effectiveness and quality of sustainability reporting are profoundly influenced by the underlying organizational structures within companies. These structures set how sustainability data is collected, analyzed, and distributed throughout the organization, shaping reporting processes, practices, and outcomes.

For instance, an organization's ownership structure, whether public, private, or hybrid, can impact the disclosure of information since the mix of public and private stakeholders involved influences the degrees of managerial autonomy, and as their inclusion level increases, so does the probability of the organization to report on its sustainability practices (Geerts et al., 2021). Moreover, organizations that establish CSR board committees or dedicated departments that prioritize strategic CSR and reporting are motivated to measure and disclose their CSR performance voluntarily, and this structure, in turn, enhances sustainability reporting quality (Amran et al., 2014).

Therefore, an organizational structure can shape how sustainability data is reported, influencing the quality and transparency of reporting practices that must align with and meet stakeholders' expectations.

2.5 Conclusion

In conclusion, this chapter comprehensively examined the relationship between organizational structures and sustainability, tackling traditional and modern types of organizational structures and their role in influencing sustainability initiatives.

Moreover, it discussed how internal and external factors shape and affect the adoption of organizational structures in the context of sustainability, providing valuable insights into the complexities of integrating sustainability into organizational practices.

Furthermore, this chapter highlighted the impact of adopting sustainable organizational structures on sustainability reporting practices and quality while emphasizing the importance of transparency, accountability, and stakeholder engagement.

3. Organization Roles and Sustainability

3.1 Introduction

Roles within an organization are crucial for its overall success. They entail tasks, reporting, decision-making, and information transfer, ensuring functions and responsibilities are covered and understood and maintaining accountability. They are interconnected with the organization's structure (Royakkers et al., 2005).

In sustainability, organizational roles are specific and tailored according to sustainability initiatives and projects, encompassing the planning, implementation, and maintenance processes. However, the focus should not only be on specific tasks but also on expressing the culture and values of sustainability (Epstein & Buhovac, 2010). Clear definitions and assignment of these roles, influenced by internal and external factors, are crucial to ensure that all aspects of sustainability initiatives are addressed.

Despite the importance of role assignment and designation, challenges often arise related to sustainability. However, through effective strategies and best practices, organizations can overcome these challenges and optimize their efforts toward sustainability (Royakkers et al., 2005).

This chapter explores the concept of roles within an organization's sustainability initiatives by identifying key stakeholders involved and their roles in promoting and implementing sustainability. It aims to comprehensively understand these dynamics while tackling the factors influencing role assignment.

3.2 Key Stakeholders and Sustainability

An organization's stakeholders can be broadly categorized into primary and secondary. The primary stakeholders are those directly involved in or impacted by an organization, and their roles are initiative-taking. Conversely, the secondary stakeholders are those indirectly involved in or influenced by the organization, and their roles are reactive (Goodman et al., 2017). The “Stakeholder Theory,” which highlights the importance of considering all parties affected by an organization's actions, is particularly relevant here (Goodman et al., 2017, p.2). Additionally, the “Three Pillars of Sustainability” model

discussed in the 1st chapter is also relevant in this context by emphasizing roles within environmental stewardship, social equity advocacy, and economic strategy.

This section will delve into the key stakeholders involved in sustainability initiatives and provide a better understanding of their roles, essential for effective stakeholder engagement and collaboration in advancing sustainability goals.

3.2.1 Primary Stakeholders

On the one hand, organizations' primary stakeholders include employees, customers, suppliers, and shareholders. These stakeholders are crucial in driving organizational sustainability, influencing practices, and fostering long-term success individually and collectively with direct involvement and influence.

Employees

As primary stakeholders, it is essential to study the relationship between an organization and its *employees* regarding sustainability. A workforce can significantly enhance an organization’s performance and adaptation to challenges in sustainable operations. Managing this relationship successfully leads to businesses' success, as employees support and implement sustainability practices. In addition, factors such as labor costs, workforce size, flexibility, and adaptability play a role in sustaining and improving an organization’s sustainability efforts and initiatives (Manzaneque-Lizano et al., 2019). For instance, middle managers can develop tasks and responsibilities based on the organization’s sustainability objectives. Accordingly, operational staff can promote and implement sustainability, improving the company’s reputation through daily tasks and behavior.

Customers

Customers are vital to an organization’s sustainability initiatives, business strategies, and policies. Market trends and pressures, through their purchasing decisions, force businesses to align with their sustainability values, influencing societal norms and inspiring others to adopt sustainable behaviors (Mostaghel & Chirumalla, 2021). For instance, loyal customers emphasize sustainable brands that foster long-term relationships and drive business expansion. Their emphasis on sustainability also drives investors to

consider and prioritize environmental and social responsibility, thus boosting shareholder confidence and enhancing financial performance.

Suppliers

Suppliers play a critical role in shaping organizations' environmental and social impacts. They can directly influence an organization's sustainability performance through their supply chain practices and their raw materials, components, services, etc.; therefore, this leads to mitigating risks and ensuring business continuity due to compliance with regulations and ethical practices. Collaboration with suppliers fosters transparency, trust, and innovation, creating shared value and long-term sustainability benefits. (Gualandris & Kalchschmidt, 2016). Organizations can drive positive change, enhance resilience, and advance toward a more sustainable future by prioritizing sustainability in supplier relationships.

Shareholders

Shareholders also influence sustainability practices through their ownership interests and economic leverage. They prioritize sustainable strategies, advocate for sustainability initiatives, and require transparency in environmental, social, and governance (ESG) performance metrics. Shareholders also relate sustainability to risk management as this affects financial performance. Their engagement underscores their commitment to fostering sustainability as a driver of competitive advantage and long-term financial viability, shaping organizational behavior towards more responsible and sustainable practices (Crifo et al., 2019).

3.2.2 Secondary Stakeholders

On the other hand, secondary stakeholders include government and regulators, NGOs, and the media. These stakeholders shape market trends and support sustainable practices and initiatives through indirect involvement and influence alongside primary stakeholders.

Government and Regulators

While often classified as secondary stakeholders, *government and regulatory bodies* are crucial in advancing organizational sustainability. They are responsible for establishing

and enforcing comprehensive laws, regulations, and policies tailored to environmental protection, social responsibility, and corporate governance. For instance, organizations must disclose non-financial information. It could be related to the extent of diversity and inclusion within a large company, waste management, energy efficiency, etc.; therefore, they monitor the progress of Sustainable Development Goals (SDGs) in companies. By creating frameworks for ethical and sustainable practices, these entities ensure organizational compliance through incentives and penalties where needed (Vieira Nunhes et al., 2021). This fosters innovation and continuous improvement in sustainability.

Non-governmental Organizations (NGOs)

NGOs play a vital role in advancing sustainability within organizations. They champion environmental and social causes, holding businesses responsible for their sustainability efforts. Moreover, they raise awareness about corporate conduct and its impact on the environment and society, shaping public perception. NGOs also pressure corporations to enhance sustainability by providing specialized knowledge and guidance (Lee, 2019). As a result, NGOs improve transparency and accountability by overseeing and reporting on corporate practices, pinpointing areas that need attention or enhancement, and encouraging organizations to embrace more sustainable policies and practices.

Media

The *media*, a powerful platform, can raise public awareness about environmental and social issues. It can shape public perception and influence consumer behavior, compelling organizations to prioritize sustainability to safeguard their reputation. By disseminating information, the media can expose environmental violations, social injustices, and greenwashing, driving organizations to take sustainability seriously. Media campaigns also have the potential to pressure governments to adopt stricter regulations and sustainable standards. Furthermore, financial media coverage of sustainability performance and ESG ratings can sway investor decisions, prompting them to support organizations prioritizing sustainability. Moreover, the media serves as a bridge between organizations and their stakeholders, where raising stakeholders' opinions and concerns ensures that companies are attentive and responsive to their needs (Reilly & Weirup, 2012). This fosters the development of more inclusive and practical sustainability

strategies and encourages organizations to integrate sustainable practices into their core operations.

3.2.3 Conclusion

In conclusion, integrating sustainability within organizations relies on the collaborative efforts of key stakeholders such as employees, customers, suppliers, and shareholders. Employees drive implementation, customers influence market alignment, suppliers promote innovation, and shareholders prioritize sustainable strategies, advancing an organization's reputation and success. Additionally, government regulators, NGOs, and the media play pivotal roles in shaping ethical practices, raising awareness, and driving accountability. Together, these stakeholders foster transparency, innovation, and continuous progress toward a more sustainable future.

3.3 Stakeholders Roles in Sustainability

3.3.1 Proactive Roles

Stakeholders holding proactive roles in an organization, such as the stimulator, the initiator, and the impact extender, engage proactively in sustainability initiatives, driving innovation and long-term strategic planning.

The Stimulator

One important proactive role is that of the *stimulator*. This role involves stakeholders taking proactive steps to stimulate innovation by providing initial funding or issuing calls for proposals. Stimulators generate interest, enthusiasm, and momentum for sustainability within organizations, communities, or industries (Goodman et al., 2017). They inspire others to act and drive positive change. For example, the Chief Sustainability Officer (CSO) may stimulate sustainability initiatives by promoting an organization's recycling and waste management practices.

The Initiator

Initiators are vital in driving and inspiring new sustainability projects or programs. They are responsible for developing innovative solutions to address emerging challenges or opportunities. Initiators must be identifiable as they often lead collaborative efforts

involving multiple stakeholders to promote sustainable development and systemic change (Goodman et al., 2017). For instance, an organization's R&D team may take the lead in initiating sustainability projects by creating innovative energy solutions that reduce carbon emissions.

The Impact Extender

Impact extenders are vital stakeholders who aim to increase the use of a product or service and expand its influence on various aspects of sustainable lifestyles. They use networks, partnerships, and platforms to enhance the impact and scope of sustainability efforts beyond their initial boundaries. This role is evident at various stages of innovation and is usually taken on by stakeholders, whether primary or secondary, who prioritize social and environmental sustainability (Goodman et al., 2017).

3.3.2 Reactive Roles

Conversely, reactive stakeholders such as the concept refiner, the legitimator, and the educator respond to external pressures and emerging sustainability challenges, adjusting practices accordingly to meet evolving expectations.

Concept Refiner

A *concept refiner* is a stakeholder who improves an organization's comprehension of sustainability concepts, frameworks, and best practices through testing and feedback. Their input is essential for refining the final product to be more appealing to a broader scale of end users and for the success of innovation (Goodman et al., 2017). For instance, a sustainability consultant serves as a concept refiner within an organization, offering expert guidance, analysis, and recommendations on sustainability strategies, goals, and initiatives.

The Legitimator

Legitimators are crucial in enhancing the legitimacy and credibility of sustainability initiatives and the organization. They support, recognize, or validate sustainability efforts, making them more socially acceptable and influential. These stakeholders, often public authorities or universities, can help companies navigate uncertainty and earn trust among

end users and the broader community, ensuring the success and acceptance of innovative solutions (Goodman et al., 2017).

The Educator

Educators are stakeholders who raise awareness, build skills, and foster an understanding of sustainability principles and practices. They provide valuable information, resources, and training to improve stakeholders' knowledge and abilities in sustainability. Educators empower individuals and organizations to make well-informed decisions, embrace sustainable behaviors, and contribute to positive social and environmental impacts. They frequently serve as intermediaries between academic institutions and public authorities (Goodman et al., 2017).

3.3.3 Mixed Roles

Amid proactive and reactive roles, mixed stakeholders balance these two approaches, blending strategic foresight with adaptive responses to effectively address sustainability issues.

The Mediator

Mediators play a central mixed role, facilitating dialogue among diverse stakeholders with competing interests or perspectives. They help to resolve differences, find common ground, and develop mutually beneficial solutions to complex sustainability issues. As integrators, they design, coordinate, and control alliances to share sustainability knowledge and promote collaboration, trust, and cooperation among stakeholders. This fosters constructive engagement and collective action, bridging gaps between various sub-networks (Peterman et al., 2020). For example, an NGO could facilitate negotiations among various stakeholders, help resolve conflicts, and develop collaborative sustainability solutions.

The Context Enabler

Context enablers are stakeholders who address obstacles such as policy constraints and cultural norms that may hinder progress toward sustainability goals. They reshape infrastructure policies and regulations to facilitate innovative ideas' development and market entry by advocating and driving for significant and institutional changes and

fostering a favorable environment for sustainable development on local, national, or global scales, context enablers (Goodman et al., 2017).

3.3.4 Conclusion

In summary, to achieve organizational sustainability, a wide range of stakeholders must play proactive, reactive, and mixed roles. Proactive stakeholders, such as stimulators, initiators, and impact extenders, drive sustainability forward by generating enthusiasm, leading innovation, and expanding impact. Reactive stakeholders, including concept refiners, legitimators, and educators, refine, endorse, and educate to ensure sustainability initiatives resonate, gain credibility, and empower action. Mixed-role stakeholders, like mediators and context enablers, foster collaboration, trust, and favorable environments, enabling sustainable progress at local, national, and global levels. These stakeholders form a dynamic ecosystem that drives positive change toward a more sustainable future.

3.4 Factors Influencing Stakeholders' Roles

In pursuing sustainable practices, organizations must consider various factors influencing how stakeholders' roles are assigned and executed within their framework.

3.4.1 Organization Culture and Values

The culture and values of an organization highly influence stakeholders' roles and their assignment and execution. In an organization where sustainability is deeply embedded, stakeholders may naturally take on proactive roles and actively engage in their role execution. Conversely, in organizations where sustainability is seen as peripheral, stakeholders may be assigned more reactive roles or may not prioritize sustainability.

Organizations prioritizing sustainability often have cultures where environmental and social responsibility are core values reflected in their mission, vision, code of conduct, etc., influencing decision-making. They integrate practices that foster active involvement and engagement in sustainability initiatives, from educating to recognizing and rewarding sustainability achievements, fostering collaboration across different departments and levels of the organization, and encouraging diverse stakeholders to work together towards common sustainability objectives. Additionally, they expand roles and create specific ones tailored to sustainability, such as a sustainability manager, sustainability reporting

specialist, etc., and assign them people who are sustainability advocates. Moreover, they tend to designate these roles to senior levels for effective communication and implementation. They ensure they report to top management for high-level commitment, strategic alignment, and accountability for achieving sustainability goals (Bertels et al., 2010).

3.4.2 Resource Availability

In pursuing sustainability goals, organizations must align their actions with the availability of resources, which encompasses financial, technological, and human resources that effectively shape the implementation and advancement of their sustainability initiatives.

Firstly, the critical resource for an organization's operation and success is its people. Skilled personnel with expertise in different areas are essential for the growth and viability of an organization in the long run. Therefore, sustainability advocates are crucial human resources that drive organizational change and achieve sustainability goals. Organizations may need to attract, train, and retain talented individuals with knowledge and experience in sustainability strategy, environmental science, etc. For example, stakeholders responsible for talent acquisition are given proactive roles, such as headhunting and recruiting, to build a capable and motivated workforce for sustainability, leadership, and innovation. Moreover, diversity allows the sharing and exchanging of knowledge, perspectives, skills, and approaches toward sustainability, which encourages stakeholders to actively address their challenges and solutions differently, which fosters innovation and creativity in role execution (Tipu, 2022).

Secondly, access to technology and data analytics enables organizations to effectively measure, monitor, and manage their ESG and sustainability performance. Therefore, investing in technological infrastructure, such as sustainability software, sensors, and analytics platforms, is essential to facilitate data-driven decision-making and improve the efficiency of sustainability initiatives. For instance, employees involved in role assignments must consider candidates with solid technological skills for proactive roles in sustainability initiatives. Through data analytics, they can assess the skill gaps within the organization and identify areas for improvement to drive sustainability goals effectively. Moreover, along the supply chain, facilitating data tracking and sharing

supplier engagement platforms empower suppliers to understand and fulfill their assigned roles effectively within the supply chain, driving continuous improvement in sustainability practice (Jarvenpaa & Essén, 2023).

Finally, adequate financial resources are essential to invest in the above resources, implement sustainability initiatives, and integrate sustainability practices. Organizations with good financial resources can afford designated dedicated teams or hire external consultants to lead and support sustainability efforts. Similarly, stakeholders responsible for budget planning and resource allocation may assign proactive roles to individuals or teams to execute sustainability initiatives effectively. They can overcome cost barriers and implement sustainable practices across the organization. Moreover, financial availability allows organizations to invest in customer feedback platforms, surveys, and stakeholder engagement initiatives, whereby proactive roles are assigned to customers who provide feedback, share their sustainability experiences, and advocate for corporate responsibility, driving positive change and influencing organizational decision-making (Zakaria et al., 2017).

3.4.3 Conclusion

To sum up, understanding resource availability is part of the process and the foundation of effective sustainability planning. It involves taking stock of the various factors necessary for implementing sustainability initiatives. These may include natural resources, financial capital, a skilled workforce, technology, etc. Resource availability is crucial for assigning and executing stakeholder roles in sustainability initiatives, and understanding it enables organizations to allocate responsibilities to stakeholders effectively. By understanding what is available, organizations can effectively plan and execute their sustainability strategies, thus working towards achieving their sustainability goals and objectives.

3.5 Conclusion

In conclusion, the roles within an organization's sustainability framework are pivotal for its success in achieving sustainability goals and objectives. Key stakeholders, including employees, customers, suppliers, shareholders, government and regulatory bodies, NGOs, and the media, play crucial roles in driving sustainability forward through their

proactive, reactive, or mixed roles. These roles are linked with the organization's structure and influenced by various factors, including organizational culture, values, and resource availability. In assessing and understanding these factors, organizations can effectively allocate responsibilities to stakeholders, plan and execute sustainability strategies, and work towards achieving sustainability goals and objectives, optimizing their efforts towards sustainability and contributing to a more sustainable future.

4. Organization Skills and Sustainability

4.1 Introduction

Organizations must embrace different approaches to thrive and remain sustainable in today's evolving business environment. To succeed, sustainability initiatives and practices must be efficiently and effectively implemented through a workforce with the necessary knowledge, skills, and attitudes (KSAs). As competition intensifies, the workforce ages, and technology advances, talent attraction and retention become more challenging. Consequently, organizations must invest in talent management to equip their employees with sustainability essentials. This will allow them to identify and address sustainability-related challenges and opportunities while implementing relevant strategies to make a positive impact (Lacy et al., 2009).

Therefore, skills are crucial for shaping an organization’s future. These include soft, technical, and technological skills, which should be emphasized and utilized as each serves differently. Therefore, prioritizing critical competencies alongside technological ones is essential for influencing the future of businesses, navigating complexities, impacting the environment and society, and driving sustainable growth (Sousa & Wilks, 2018).

This chapter explores the critical soft and hard skills necessary for sustainability within an organization, highlighting their importance and addressing strategies for developing them among the workforce and stakeholders while tackling the importance of measuring and evaluating these sustainability skills.

4.2 Soft Skills for Sustainable Success

Nowadays, organizations encounter various environmental, social, and economic challenges and opportunities that they should address and seize respectively to maintain their reputations and competitiveness in the market. Therefore, the workforce and stakeholders must be equipped with critical soft skills. By cultivating abilities like thinking, problem-solving, initiative, and collaboration skills, organizations can enhance their capacity to develop innovative solutions, drive sustainability initiatives, and maintain a competitive edge.

4.2.1 Critical Thinking and Problem Solving

Organizations increasingly encounter environmental, social, and economic challenges as they continuously face change. Therefore, it is vital to recognize, examine, and resolve these issues. Through *critical thinking* and complex *problem-solving*, employees and other stakeholders can understand these problems, develop respective solutions, and make informed decisions to navigate complexities and seize opportunities (Sousa & Wilks, 2018). These skills are fundamental for achieving organizational sustainability.

On the one hand, critical thinking refers to clear and rational thinking that allows one to understand the logic between ideas and evaluate information accordingly. It is an acquired skill, often known as a mental habit, since it should be developed, exercised, and integrated consistently into a human's mind (Snyder & Snyder, 2008). In sustainability, critical thinking is essential for assessing the validity of data, understanding complex scenarios, and making reasoned decisions that promote long-term benefits.

On the other hand, problem-solving refers to working through the details of a problem to reach a solution that addresses various interconnected factors. In sustainability, problem-solving addresses immediate or short-run problems and considers long-term impacts and the interdependencies between systems (Tainter, 2000).

Therefore, to equip their workforce with the above skills, organizations can provide targeted training programs, form cross-functional teams, and foster a culture of feedback and reflection. These efforts empower employees to address sustainability challenges and drive positive change effectively.

4.2.2 Initiative and Entrepreneurship

Initiative and Entrepreneurship are vital skills for driving organizational sustainability initiatives. In a rapidly evolving business landscape, individuals with an entrepreneurial mindset are initiators who identify opportunities, propose solutions, and implement innovative ideas creatively and studiedly (Youssef et al., 2018). This complements their critical thinking and problem-solving skills in one way or another.

Processing these skills within a workforce, particularly in sustainability, makes it easier to take proactive steps in adopting and integrating sustainability trends. This creates a

sense of autonomy and ownership among employees, continuously encouraging them to create value for the organization in several ways (Sousa & Wilks, 2018). Therefore, organizations must foster an empowering culture encouraging involvement, autonomy, and risk-taking. Additionally, organizations can offer entrepreneurship training programs and workshops to equip employees with skills to initiate efficient and effective sustainability ideas and practices, leading to meaningful progress toward sustainability goals, innovation, and responsibility (Youssef et al., 2018). Organizations prioritizing these skills are better positioned to maintain their reputation and competitiveness.

4.2.3 Collaboration and Leading by Influence

Organizations can achieve sustainability through *collaboration* in networks and by *leading through influence*. Firstly, network collaboration involves working effectively within and across organizational boundaries, building and maintaining partnerships, and engaging with various stakeholders and groups to address complex sustainability challenges. This includes communication, information sharing, and cooperation (Rădulescu et al., 2020). Secondly, leading by influence, rather than formal authority or hierarchical power, involves guiding and inspiring others toward shared goals and objectives. It requires trust, credibility, emotional intelligence, persuasion, and motivation skills (Waite, 2013). In sustainability, influential leaders drive cultural and behavioral changes, foster a culture of sustainability and innovation, and ensure that sustainability initiatives and practices are embraced across the organization and beyond. To equip its workforce with these skills, an organization must ensure transparency, promote open communication, facilitate networking opportunities, and build global networks. Additionally, investing in collaboration tools and technologies and training employees to use them effectively is essential. Moreover, an organization must offer leadership development programs focused on influence and provide mentorship and coaching (Sousa & Wilks, 2018). Therefore, recognizing and rewarding collaborative efforts further reinforces these practices, driving considerable progress towards sustainability goals and creating lasting positive impacts.

4.2.4 Conclusion

In conclusion, to navigate and seize environmental, social, and economic complexities and opportunities effectively, organizations must cultivate critical soft skills like critical

thinking, problem-solving, initiative and entrepreneurship, and collaboration skills for sustainable success. By fostering these competencies through an empowering culture and targeted training, organizations can drive sustainability initiatives, promote innovation, and maintain competitiveness in a rapidly changing landscape.

Table 1 Critical Soft Skills for Sustainability (Sousa & Wilks, 2018)

Critical thinking and problem solving	To ask questions is the basis of critical thinking. The need to be able to ask questions to solve a problem, to get answers that allow critical analysis and question the causes.
Collaboration in networks and leading by influence	Increased focus on global collaboration. The leadership of a team by influence, and not by authority—group influence, alliance building towards a common goal.
Agility and adaptability	Agility and adaptability to the unpredictable consequences of technology. Continuously learning is a requirement.
Initiative and entrepreneurship	Development of a sense of initiative and entrepreneurial skills. Entrepreneurs try to find workers who consistently seek new opportunities, ideas and new strategies for business growth.
Effective oral and written communication	To communicate clearly as an extension of clear and logical thinking. To be able to present an argument persuasively and to inspire others; to capture the essentials of communication concisely. To get to promote yourself or promote a product/service.
Evaluating and analysing information	To learn how to access and select valid information in the digital world. To know how to assess the source and evaluate the content of the data. To understand what information is up to date.
Curiosity and imagination	Curiosity as a powerful search engine for new knowledge and innovations. It is necessary to stimulate the creativity to create new knowledge. Students need to be encouraged to ask questions and seek answers. Thinking 'out of the box' needs to be considered as having the same importance as physics or mathematics.

4.3 Technological Skills for Sustainable Success

In today's dynamic business environment, organizations strive to achieve sustainability. Therefore, they are increasingly integrating advanced technologies like artificial intelligence (AI), nanotechnology, and robotization to transform how they operate, drive efficiency, and foster innovation, which allows them to meet their sustainability objectives and goals more effectively.

4.3.1 Artificial Intelligence (AI)

Nowadays, *artificial intelligence (AI),* which, according to (Nishant et al., 2020), is defined as the computerized ability to solve problems and achieve goals, shapes organizations and their governance. It influences various processes' efficiency and effectiveness while providing organizations valuable insights to make informed decisions

contributing to their sustainability objectives. AI tools, continuously learning and improving, help optimize operations, reduce resource consumption, and enhance environmental, social, and economic performance (Sousa & Wilks, 2018). For instance, they can minimize energy waste, reduce utility costs, and optimize supply chain operations, enhancing resource efficiency and environmental sustainability. Additionally, AI-driven advancements promote social well-being and positive relationships between organizations and stakeholders as they improve customer satisfaction, loyalty, and inclusivity. Moreover, economically, AI tools reduce operational costs and optimize resource allocations, increasing an organization's productivity and competitiveness (Nishant et al., 2020).

Table 2 Summary of AI Research Themes (Nishant et al., 2020)

AI Capability	Research Themes	Technical Themes
Data analysis and learning	Machine learning (ML)	learning techniques, models and algorithms, natural computing (NC)
Human cognition	Computer vision (CV)	feature extraction, object identification and classification, environment perception
	Natural language processing (NLP)	speech recognition, speech understanding, text analysis, speech generation
Emotions and thinking	AI robotics[a]	human motions and manipulations based on CV, NLP, and emotions and thinking
	Affective computing	recognize, understand, and express human feelings based on CV and NLP
	Decision support	fuzzy logic (FL), expert systems (ES)
	Self-learning	strategic planning and sequential actions, self-learning and self-improvement, artificial general intelligence

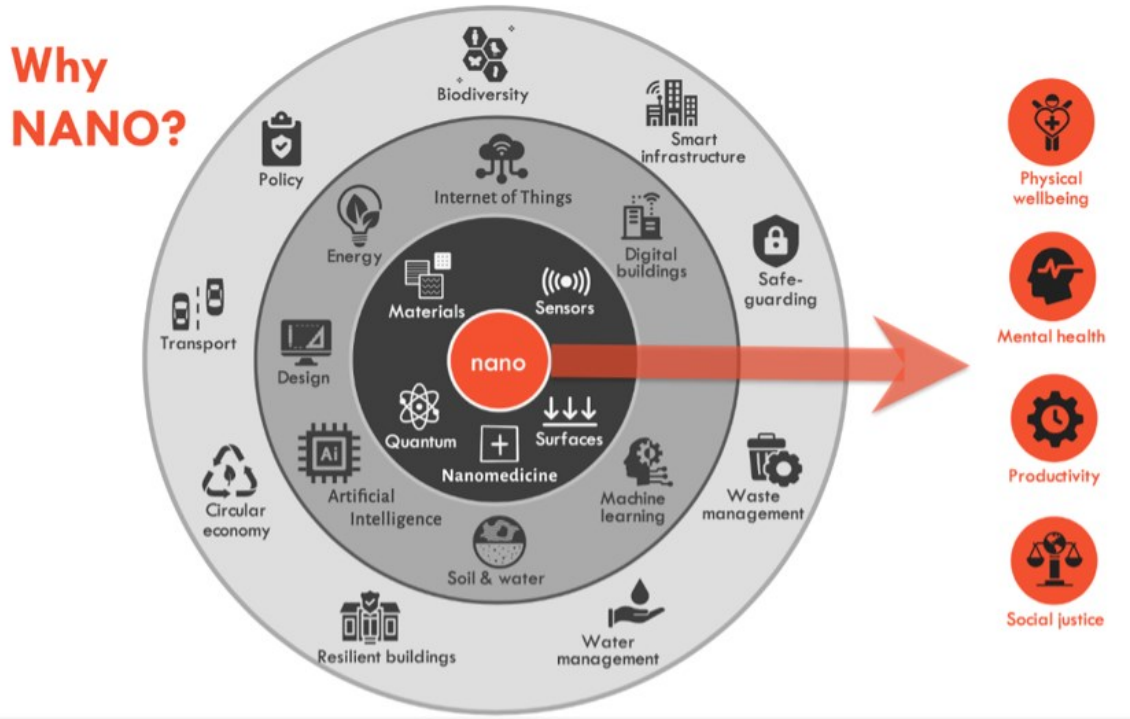
[a] AI robotics traverse the borders of cognition,emotions, and thinking.

4.3.2 Nanotechnology

Nanotechnology offers revolutionary solutions for organizations, enhancing efficiency, fostering innovation, and promoting sustainability. Organizations can achieve exceptional properties and functionalities through nanotechnology, giving them a competitive edge and positioning them as market leaders. For instance, this technology enables the development of eco-friendly products and services through energy efficiency, renewable energy generation, and sustainable practices, thereby reducing environmental impact (Pokrajac et al., 2021). Additionally, by integrating nanotechnology into their practices and development programs like cyber systems and holograms, organizations can continuously empower employees, enriching their roles and stakeholders to learn, collaborate, and share knowledge, promoting diversity and inclusion, and enhancing innovation, engagement, productivity, and retention. Therefore, this reflects an organization's commitment to social responsibility and community contribution. Additionally, these advanced technologies streamline processes, automating repetitive

tasks, which reduces dependency on manual labor and labor costs, creates new revenue streams, and capitalizes on emerging market trends. Therefore, organizations enhance and ensure their economic sustainability, viability, and growth in the long run (Sousa & Wilks, 2018).

Figure 9 Nanotechnology is at the Core of Technology-based Solutions (Pokrajac et al., 2021)



4.3.3 Robotization

Incorporating *robotization* into organizational practices and operations contributes efficiently and effectively to sustainability initiatives. It allows the consistent and precise execution of tasks with the necessary speed to reduce cycle times, which leads to cost savings and better resource utilization. Additionally, robotization minimizes human error, leading to fewer mistakes, reduced waste and energy consumption, and improved quality control, which lowers an organization's environmental footprint and aligns with sustainability goals (Sobczak, 2022). Moreover, robots can perform risky tasks or ones impossible for humans as they can work in dangerous or challenging environments, ensuring the safety and well-being of employees and stakeholders and allowing organizations to undertake previously unfeasible projects due to such conditions. Furthermore, robotization supports greater flexibility and adaptability within

organizations, enabling businesses to quickly adjust to changing market demands to maintain competitiveness and resilience in a dynamic business environment (Sousa & Wilks, 2018).

4.3.4 Strategies for Developing Technological Skills

Organizations have diverse strategies to adopt to equip their workforce and stakeholders with crucial technological skills for sustainability. One of these is providing comprehensive training and education through on-site workshops, online courses, and industry seminars tailored to sustainability applications. This could happen through collaborations with external partners such as technology providers and research that can keep the company at the forefront of technological developments (Prezioso & Margherita, 2021). Additionally, organizations should prioritize providing stakeholders with real-world projects involving these technologies, enabling cross-departmental initiatives and teams to experiment with and refine technological applications for sustainability and integrate them into sustainability efforts since hands-on experience is critical. Moreover, organizations must encourage collaboration, knowledge sharing, and innovative problem-solving by creating cross-functional teams whereby experts from various fields are brought together to work on sustainability projects (Sousa & Rocha, 2019). By encouraging a culture of continual learning and innovation, employees can stay updated on the latest technological advancements and their applications in sustainability.

4.3.5 Conclusion

Organizations can enhance their sustainability efforts by developing a technologically skilled workforce. These skills enable organizations to streamline processes, minimize environmental impact, and devise innovative solutions to sustainability challenges, setting them up for long-term success in a rapidly changing environment. Therefore, investing in technology is crucial to ensure employees have access to advanced tools and infrastructure, allowing them to explore innovative applications of these technologies in sustainability projects.

Table 3 Disruptive Technological Skills (Sousa & Wilks, 2018)

Skills	Applications	Impacts
Artificial intelligence	Intelligent software systems that can perform tasks and are in continual learning and improvement. Medical diagnosis and prescription assistance.	In the nature of work and at the manufacturing level (namely, robotics). Analysis of large amounts of data.
Nanotechnology	To teach through interactive programs, using cyber systems, holograms and intelligent systems.	With the automation of tasks, organizations can enrich the roles of workers. Creation of new products and services, by changing the way companies and other organizations structure themselves.
Robotization	In industry: • Robots with increasing greater dexterity and intelligence used to automate tasks. • Vehicles with reduced or no human intervention. • Advances in interfaces and sensors with better materials and ergonomic design. In medicine: • Robotic surgeries to improve quality. • Performing invasive surgeries that may reduce postoperative complications.	Reduction of labour costs. Greater flexibility and shorter delivery time for products to the market. Performance of dangerous tasks by robots (treating patients or automating manual work). Productivity growth, higher quality products, safer surgeries and better quality of life for the elderly and disabled.

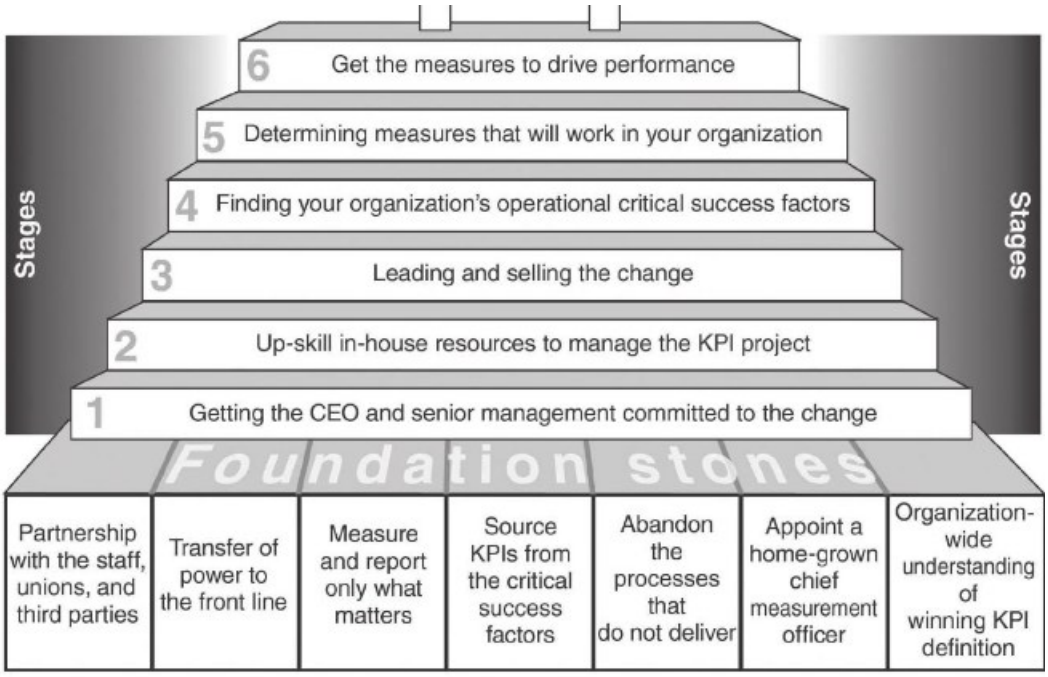
4.4 Measurement and Evaluation of Sustainability Skills

Effectively measuring and evaluating sustainability skills within an organization is crucial for ensuring that these skills contribute to long-term sustainable development goals. This process involves establishing clear metrics, utilizing appropriate assessment tools, and fostering a culture of continuous improvement.

Organizations can create *Key Performance Indicators (KPIs)* that align with their sustainability objectives and the necessary skills for accomplishing them. These indicators offer quantifiable measures to monitor advancement and efficiency (Parmenter, 2015). For instance, in the context of critical thinking regarding sustainability challenges, specific criteria or behaviors could be defined to measure the ability to analyze environmental or social issues, assess different viewpoints, and suggest innovative solutions. Moreover, when it comes to technological skills, an organization can define measurable metrics that reflect the integration and impact of technology on sustainability objectives, such as the percentage of employees trained in AI technologies relevant to sustainability or the scalability and adaptability of robotic solutions. Accordingly, they set targets or benchmarks for enhancement over time. Once established, KPIs should be integrated into the organization's regular reporting processes. This ensures that

sustainability skills are continuously monitored, and their impact is visible to all stakeholders (Hristov et al., 2022).

Figure 10 The 7 KPI Stages (Parmenter, 2015)



In addition, assessment tools are essential since they provide valuable insights into strengths and areas that require improvement in soft and technological skills, guiding strategic decisions, and allocating resources for skill development initiatives. They can entail employee self-assessments, like surveys or reflection journals, which can reflect on their sustainability skills and identify areas for improvement. Also, peer reviews are conducted where colleagues assess each other's sustainability skills and provide feedback on sustainability initiative behaviors. Another could be utilizing frameworks like the Sustainability Accounting Standards Board (SASB) and the Global Reporting Initiative (GRI) that offer guidelines and metrics that are widely recognized and respected for a structured approach to evaluating sustainability skills (Rasul et al., 2012).

Furthermore, continuous improvement is foundational to fostering sustainability skills within an organization. It entails evaluating, refining, and enhancing soft and technological skills to adapt to sustainability challenges and opportunities. By embracing a culture of continuous improvement, organizations can ensure that their workforce remains agile, innovative, and equipped to drive meaningful progress toward

sustainability goals. This can be achieved through annual reviews of sustainability skills and their impact on organizational goals, monitoring progress and addressing any emerging issues promptly, feedback loops incorporating insights from evaluations into practice, and investing in ongoing professional development opportunities for employees to keep track of the latest sustainability practices and technologies (Medne & Lapina, 2019).

By establishing and using KPIs, employing various assessment tools, and fostering a culture of continuous improvement, organizations can effectively measure and evaluate the sustainability skills of their workforce. This approach ensures that sustainability goals are met and promotes a culture of accountability and continuous development, driving long-term success in sustainability initiatives.

4.5 Conclusion

Organizations must prioritize developing a skilled workforce with essential soft and technological skills to thrive in today's dynamic business environment and advance sustainability initiatives. Critical soft skills, such as critical thinking and problem-solving, initiation and entrepreneurship, collaboration, and leading by influence, are pivotal for addressing complex sustainability challenges and driving innovation. These skills enable employees to understand and resolve environmental, social, and economic issues effectively, fostering a culture of sustainability and continuous improvement. Equally important are technological skills involving advanced tools like artificial intelligence, nanotechnology, and robotization, which transform organizational operations by optimizing processes, reducing resource consumption, and enhancing overall sustainability performance. Integrating these technologies allows organizations to streamline operations, minimize environmental impact, and promote social well-being, ensuring economic viability and growth. Effective measurement and evaluation of sustainability skills ensure that these competencies contribute to long-term sustainable development goals. Establishing clear metrics, utilizing appropriate assessment tools, and fostering a culture of continuous improvement provide valuable insights into strengths and areas for development, guiding strategic decisions and resource allocation for skill enhancement. By investing in comprehensive training, fostering collaboration, and encouraging continuous learning, organizations can equip their workforce with the

necessary skills to drive meaningful progress towards sustainability goals, maintain competitiveness, and positively impact society and the environment. This integrated approach ensures that sustainability initiatives are effectively implemented and continuously improved, positioning organizations for long-term success in a rapidly changing landscape and aligning business success with broader sustainable development objectives.

5. Standardization and Organizational Sustainability

5.1 Introduction

Organizations must adopt a structured, standardized approach to achieving meaningful and lasting sustainability outcomes. Standardizing sustainable practices within organizational structures is necessary for sustainability efforts to be consistent, efficient, and effective across all departments and operations. These practices, as explored in previous chapters, entail activities that aim to improve the environmental, social, and economic state within an organization and society at large. They include guidelines for sustainable procurement, resource management, compliance with regulations, etc. Therefore, standards must be clear, measurable, and aligned with the organization's strategic objectives and goals (Lampland & Star, 2009).

Some strategic steps are involved in implementing standardized sustainable practices effectively, providing insights into key considerations, best practices, and methodologies for success. Therefore, challenges will still arise when standardizing sustainable practices. However, the long-term advantages make it worth the wait since it offers numerous benefits that enhance the organization's ability to progress toward sustainability progress, maintain its competitiveness, and improve its reputation (Nouzha et al., 2020).

This chapter explores the various facets of standardizing sustainable practices, highlighting the implementation strategies, factors affecting the process, benefits, and methods for measuring effectiveness.

5.2 Standardization of Sustainability Practices

Organizations should think strategically and take steps when standardizing sustainable practices for successful implementation. First, they must develop comprehensive sustainability standards, considering regulatory requirements, best practices, and their specific sustainability goals. In this context, the International Organization for Standardization (ISO) has created a set of standards that positively affect organizations and contribute to achieving their sustainability goals. They include ISO 9001, 14001, 50001, 45001, 26000, and SA8000 (Nouzha et al., 2020):

- **ISO 9001:2015** offers tailored advancements for organizations of all sizes and industries to establish and maintain effective quality management systems.

These systems help organizations understand their state, manage processes effectively, and evaluate performance. In addition, they help them focus on enhancing customer satisfaction and achieving organizational success.

- **ISO 14001:2015** enhances environmental management systems and helps organizations improve environmental performance and achieve sustainability goals by emphasizing proactive approaches, integrating them with overall business strategies, and promoting leadership involvement, risk-based thinking, and stakeholder engagement.

- **ISO 50001:2018** offers organizations a framework for energy management systems outlining requirements for policy development, monitoring, continual improvement, etc., aiming to enhance energy performance, efficiency, and cost reduction while aligning energy management with broader organizational objectives.

- **ISO 45001:2018** offers a comprehensive occupational health and safety management systems (OHSMS) framework that prevents work-related accidents, injuries, illnesses, and fatalities and fosters a safe and healthy workplace. It emphasizes risk management, legal compliance, worker involvement, and continual improvement.

- **ISO 26000:2010** offers organizations recommendations on ethical behavior, stakeholder engagement, and sustainable practices across various areas. It guides organizations' social responsibility and responsible business practices and contributes to sustainable development.

These ISO standards are interconnected in their aim to promote sustainability. They guide organizations to consider and responsibly manage their environmental, social, and economic impacts. Accordingly, organizations can integrate these standards into their management systems and standardize their business practices.

In addition, for a successful implementation, organizations should educate employees about the specific standards, their importance, and the benefits of following them through continuous training and development. This will keep employees up to date on the latest sustainability practices and technologies. Additionally, stakeholders' insights and

feedback are crucial in the development process since they can ensure that the standards are rational and accepted. Therefore, organizations should engage them since it facilitates implementation, compliance, and success of sustainability outcomes. Moreover, technology supports the implementation, whereby leveraging it enhances efficiency and ensures accurate data collection and reporting. This solidifies the organization's commitment to sustainable operations. For instance, data analytics and automated reporting systems enable organizations to monitor compliance, track progress, and analyze the effectiveness of their sustainability initiatives (Silva et al., 2020).

Therefore, organizations can effectively integrate sustainability into their core operations by developing comprehensive standards and leveraging frameworks such as those provided by ISO through stakeholders in general, employees in particular, and technology. This ensures that strategic standardization of sustainable practices leads to more successful and impactful sustainability outcomes.

5.3 Factors Influencing Standardization Process

Understanding the factors influencing an organization's standardization process is essential for ensuring its effectiveness, enhancing operational efficiency, and achieving sustainable success (Schafermeyer et al., 2010):

- **Input and Output Variety**

  Lower input, which refers to the resources or data used during a process, and output, which refers to the results of that process, variety can significantly contribute to the success of standardization efforts. With fewer input variations, organizations can more easily define clear protocols for resource management, waste reduction, and other sustainability initiatives, fostering consistency and reliability. Similarly, lower output variety ensures that the outcomes of standardized processes are more predictable and consistent, which is essential for achieving desired sustainability outcomes, such as reducing environmental impact.

- **Sequential Variety**

  Low sequential variety of a process within an organization fosters standardization success as it facilitates the development of standardized procedures and guidelines for carrying out those tasks. For instance, routine processes demonstrate lower sequential

variety because the sequence of tasks or activities is consistent and often predictable each time the process is executed. Contrarily, processes with higher sequential variety may involve more complex sequences of tasks, making it challenging to standardize them effectively. These processes may require more flexibility or adaptability in their execution, hindering efforts to establish standardized procedures.

- **Process Repetition**

  Frequently repeating tasks in a standardized manner contributes to the success of standardization efforts. When processes are repeated consistently, it becomes easier to identify patterns, streamline procedures, and implement standardized practices effectively. This repetition fosters employee familiarity and mastery, reducing errors and variability in process execution.

- **Uncertainty**

  Uncertainty, which refers to the lack of predictability or clarity in executing processes, often arising from variable input factors, employee skill gaps, or external factors, makes the standardization process challenging. Therefore, low levels of uncertainty positively influence standardization success as they indicate greater stability and predictability in process execution.

- **Interpretive Input Assessment by Employees**

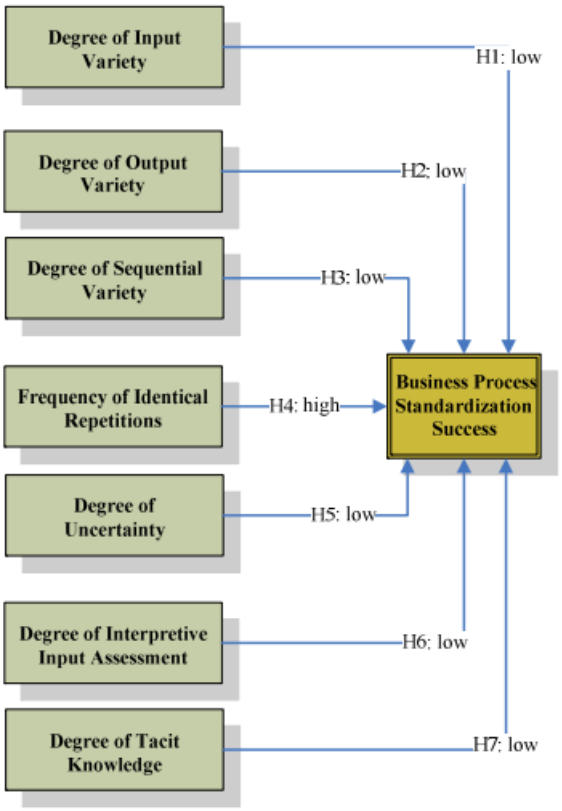
  Interpretive input assessment refers to the need for employees to assess and interpret various inputs or situations during process execution. Their subjective insights or decisions introduce variability and complexity into the standardization process, making it more difficult. Therefore, processes that require minimal interpretive input assessment are more responsive to standardization as they rely on clear, objective criteria for execution.

- **Tacit Knowledge**

  In the context of standardization, tacit knowledge, which often involves nuanced insights, preferences, or contextual understanding that can vary among employees, can complicate efforts to establish standardized procedures. Contrarily, processes that rely solely on explicit procedural knowledge, which can be easily documented and

communicated, are generally more advantageous to standardization success as they minimize reliance on subjective interpretations or individual expertise.

Figure 11 Business Process Standardization Success Factors (Schafermeyer et al., 2010)



Therefore, organizations aiming to improve operational efficiency and attain sustainable success must understand and tackle the factors that impact standardization processes. By acknowledging the importance of the abovementioned elements, organizations can devise strategies to streamline processes, reduce variability, and implement standardized practices effectively. These efforts foster greater consistency, predictability, and reliability in achieving sustainability goals, ultimately leading to enhanced performance and outcomes.

5.4 Measuring Effectiveness of Standardized Sustainability Practices

Organizations must measure the effectiveness of standardized sustainability practices since they will get insights into their progress and the areas for improvement, enabling them to make informed decision-making toward continuous enhancement of sustainability performance. Therefore, they can develop a comprehensive approach by selecting and developing indicators directly aligned with their sustainability objectives.

For instance, this can include environmental, social, and economic indicators like energy consumption, employee satisfaction, and cost savings. Once selected, they must be clearly defined and communicated to ensure consistency and accuracy in measurement (Gudmundsdottir & Sigurjonsson, 2024).

In addition, organizations must utilize their internal and external sources for data collection. For instance, industry benchmarks, regulatory requirements, and performance reports contribute to a comprehensive dataset, which they analyze accordingly to evaluate performance. They must effectively communicate their findings through regular sustainability reporting, ensuring transparency and accountability to stakeholders (Fraser et al., 2020).

Moreover, organizations must establish a feedback loop to capture stakeholders' input, which must be integrated into the process. This helps refine indicators and metrics, ensuring ongoing alignment with organizational priorities and stakeholder expectations.

Therefore, by concentrating on these elements, companies can create a thorough method for evaluating the impact of standardized sustainability practices. This approach helps ensure that these practices lead to meaningful results and support achieving broader sustainability objectives.

5.5 Benefits of Standardized Sustainability Practices

Standards serve multiple purposes and provide various benefits to organizations, mainly when implemented effectively in the context of sustainability. Uniform procedures ensure consistency in applying sustainability efforts and practices across all areas of an organization. This consistency is crucial for achieving predictable and reliable outcomes. Additionally, compliance with highly recommended and known standards is effective for information transfer, avoiding further inquiries. This, in turn, makes the products or services more reliable and trustworthy, which facilitates coordination and comparability between different organizations. (Vasileva, 2020).

Moreover, standards discourage undesired behaviors and promote desired ones, simplifying choices and reducing the risk of conflicts and the recurrence of problems. This enhances efficiency and effectiveness, leading to cost savings. For instance, by adopting standards like ISO 14001 (previously discussed), organizations can manage

their resources and energy efficiently and reduce waste, lowering operational costs. Similarly, through the Global Reporting Initiative (GRI) guidelines, the organization's sustainability reporting on environmental, social, and economic impacts has improved to be more accurate and credible, promoting transparency and accountability. This, in turn, is crucial for stakeholders to build trust and invest in such organizations, and also reduces discrepancies among countries' sustainability reporting, thus discouraging businesses from relocating to areas with weaker regulations (Geijer & Sturesson, 2013).

Furthermore, standardization can drive growth and continuous improvement while shaping competition and innovation. Organizations that standardize sustainability practices are motivated to innovate and refine their methods to enhance their reputation and remain competitive. This commitment to standardized practices attracts and retains talent and increases operational efficiencies, leading to unexpected financial benefits (Geijer & Sturesson, 2013).

To sum up, standardized practices are crucial and effective for any organization, especially regarding sustainability. They serve as a practical tool to improve organizational practices and operations, enhancing efficiency and effectiveness, driving continuous improvement, and fostering trust among stakeholders and organizations, all while balancing public and private interests.

5.6 Conclusion

In conclusion, standardizing sustainable practices within organizational structures is imperative for achieving meaningful and lasting sustainability outcomes. Adopting a structured approach to sustainability, which involves developing comprehensive standards aligned with organizational goals and leveraging frameworks such as those provided by ISO, is essential. Organizations can enhance efficiency, reduce costs, and drive continuous improvement by implementing standardized practices effectively. However, challenges may arise during the standardization process, but the long-term benefits outweigh the initial obstacles. By measuring the effectiveness of standardized sustainability practices using well-defined indicators and metrics, organizations can gain valuable insights into their progress and identify areas for improvement, ultimately contributing to the advancement of sustainability goals. Therefore, organizations must

embrace standardization as a strategic tool for fostering sustainability and driving positive environmental, social, and economic impacts.

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