

**T.C.**  
**BAHCESEHIR UNIVERSITY**  
**GRADUATE SCHOOL**  
**THE DEPARTMENT OF BUSINESS ADMINISTRATION**  
**DOCTORAL PROGRAM IN BUSINESS ADMINISTRATION**

**A MODEL PROPOSAL FOR THE EVALUATION OF CORPORATE  
SUSTAINABILITY PERFORMANCE**

**PhD THESIS**  
**CANSU DURAN**

**ISTANBUL 2025**

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**CANSU DURAN**

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**ISTANBUL 2025**

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| <b>Thesis Defense Date</b> | 26/05/2025                                                                  |

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## ABSTRACT

### A MODEL PROPOSAL FOR THE EVALUATION OF CORPORATE SUSTAINABILITY PERFORMANCE

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PhD Program in Business Administration

Supervisor: Prof. Dr. Ahu Ergen

May 2025, 97 pages

This study proposes an integrated model for evaluating Corporate Sustainability Performance (CSP), developed through a synthesis of academic literature and findings from in-depth expert interviews. Recognizing the limitations of existing CSP frameworks in capturing Environmental, Social, and Governance (ESG) dimensions, the model introduces a modular, stakeholder-informed, and sector-adaptable structure. The model aims to bridge the gap between strategic sustainability goals and operational implementation, especially for small and medium-sized enterprises (SMEs). The model's theoretical contributions include the balanced integration of ESG pillars, the incorporation of stakeholder theory in indicator design, and the emphasis on adaptability through scalable application. From a managerial perspective, it supports decision-making, risk management, and regulatory alignment through practical tools that can be embedded into existing systems and digital infrastructures. While the model addresses many challenges in CSP evaluation, limitations remain in terms of generalizability, data availability, and sector-specific applicability. Future research should focus on longitudinal validation, digital integration, and cultural contextualization. Ultimately, the model offers a meaningful step toward more systematic, inclusive, and actionable sustainability performance evaluation.

**Keywords:** Corporate Sustainability Performance, ESG, Sustainability Measurement, Performance Evaluation

## ÖZET

### KURUMSAL SÜRDÜRÜLEBİLİRLİK PERFORMANSININ DEĞERLENDİRİLMESİNE YÖNELİK BİR MODEL ÖNERİSİ

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Tez Danışmanı: Prof. Dr. Ahu Ergen

Mayıs 2025, 97 sayfa

Bu çalışma, Kurumsal Sürdürülebilirlik Performansı'nın (KSP) değerlendirilmesine yönelik bütüncül bir model önermektedir. Model, akademik literatürün ve uzmanlarla yapılan derinlemesine mülakatlardan elde edilen bulguların sentezi yoluyla geliştirilmiştir. Mevcut KSP çerçevelerinin çevresel, sosyal ve yönetim (ÇSY) boyutlarını yeterince yansıtamaması nedeniyle, önerilen model modüler, paydaş odaklı ve sektöre uyarlanabilir bir yapı sunmaktadır. Model, özellikle KOBİ'ler için stratejik sürdürülebilirlik hedefleri ile operasyonel uygulama arasındaki boşluğu kapatmayı amaçlamaktadır. Modelin teorik katkıları arasında ÇSY boyutlarının dengeli entegrasyonu, göstergelerin tasarımında paydaş teorisinin uygulanması ve ölçeklenebilir yapısıyla esnekliğe verilen önem yer almaktadır. Model; karar alma süreçlerini, risk yönetimini ve yasal uyumu destekleyen, mevcut sistemlere ve dijital altyapılara entegre edilebilecek pratik araçlar sunmaktadır. KSP değerlendirmesindeki pek çok zorluğu ele alınırken; genellenebilirlik, veri erişimi ve sektör bazlı uygulanabilirlik açısından bazı sınırlılıklar barındırmaktadır. Gelecek araştırmaların boylamsal doğrulama, dijital entegrasyon ve kültürel bağlamlandırma gibi alanlara odaklanması önerilmektedir. Sonuç olarak, bu model sürdürülebilirlik performansının daha sistematik, kapsayıcı ve eyleme geçirilebilir biçimde değerlendirilmesine yönelik anlamlı bir adım sunmaktadır.

**Anahtar Kelimeler:** Kurumsal Sürdürülebilirlik Performansı, ÇSY, Sürdürülebilirlik Ölçümü, Performans Değerlendirme

## ACKNOWLEDGMENTS

My esteemed advisor, Prof. Dr. Ahu Ergen, who patiently guided me at every stage of my study and shared her academic knowledge and experience with me, has been my greatest guide in this process. I would like to express my deepest gratitude to her for her guidance, advice, criticism, and insight throughout the research and encouragement during challenging times.

I extend my gratitude to my thesis monitoring committee members, Assoc. Prof. Gülberk Gültekin Salman, for their guidance, invaluable insights, and contributions during my research. I would like to thank thesis jury members, Prof. Dr. Şafak Gündüz and Dr. Ahmet Aydemir, for their invaluable contributions to my dissertation. I would like to express my gratitude to all the academicians and industry professionals who provided invaluable support during the data-gathering phase of the research.

I am grateful to my parents, Tülay Aslan and Tahsin Aslan for their belief in me and the moral strength they have provided with their presence at every stage of my life. I would like to sincerely thank my dear family for their unconditional love, endless understanding, and continuous support at every stage of this process.

Finally, I would like to express my gratitude to Dr. Hakan Aslan, and Dr. Tuğçe Aslan, who has been a valuable mentor at every stage of my life and has made invaluable contributions to my career.

İstanbul, 2025

Cansu Duran

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## LIST OF ABBREVIATIONS

|       |                                                        |
|-------|--------------------------------------------------------|
| BIST  | Borsa Istanbul Sustainability Index                    |
| CDP   | Carbon Disclosure Project                              |
| CERES | Coalition for Environmentally Responsible Economies    |
| CSP   | Corporate Sustainability Performance                   |
| DJSI  | Dow Jones Sustainability Indices                       |
| ESG   | Environmental, Social, Governance                      |
| EU    | European Union                                         |
| GHG   | Greenhouse Gas                                         |
| GRI   | Global Reporting Initiative                            |
| IFC   | International Finance Corporation                      |
| IIRC  | International Integrated Reporting Council             |
| IISD  | International Institute for Sustainable Development    |
| MCDM  | Multi-Criteria Decision Making                         |
| OECD  | Organization for Economic Co-operation and Development |
| SDGs  | Sustainable Development Goals                          |
| SMEs  | Small and Medium-sized Enterprises                     |
| TBL   | Triple Bottom Line                                     |
| UN    | United Nations                                         |
| UNGC  | United Nations Global Compact                          |
| WCED  | World Commission on Environment and Development        |

## **Chapter 1**

### **Introduction**

From the 20th century onwards, with the influence of the Industrial Revolution, a period in which economic welfare increased and rapid population growth began. However, this change experienced throughout the world was handled in terms of national economies with the concern of the limited resources and it was decided by international agreements that measures should be taken in this regard. 'Sustainable development', which is widely used today, was defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" in the World Commission on Environment and Development (WCED)'s Report on Our Common Future in 1987 (Brundlant Report, 1987: 15). The building blocks of sustainable development are economic, social and environmental development. Each should be treated equally (Bansal, 2005). With the understanding of the importance of the concept, the awareness that all its components are interconnected and cannot be limited by national borders, and the efforts of international initiatives in this regard; the sustainability has become a concept that is targeted and applied from the global dimension to the national, regional and corporate level over time (Altuntaş ve Türker, 2012). The COVID-19 pandemic also provides additional evidence that the three dimensions of sustainability are inextricably linked. Supply chain interruptions and economic reflections have occurred between industries, and different living models such as social distance and working from home have led to the emergence of new social sustainability norms. The pandemic has also underscored the environmental dimension of sustainability by revealing how ecological degradation and the disruption of natural habitats can increase the risk of emerging infectious diseases. Progress in the goals of the United Nations' Sustainable Development Goals, adopted in 2015, which provides an international framework for advancing towards more just, peaceful, resilient and prosperous societies by 2030, has also been hampered by COVID-19 (UN, 2020). The Sustainable Development Report (2024) reveals that global progress toward the SDGs remains limited, with only 16% of targets on track for 2030. Progress varies by region—Nordic countries lead, BRICS nations are advancing, but poorer countries fall behind. Goals related to food and land systems are especially off course, prompting the report to outline three alternative strategies for achieving sustainability in these areas.

Today, the concept of sustainability has become a subject of fundamental importance for the business world, decision makers, scientists, non-governmental organizations and individuals. Now, the approach to sustainability goes beyond the understanding of "nice-to-have" and becomes a "must-to-have" way of doing business. In terms of businesses, the aim of corporate sustainability is the efficient use of environmental, social and economic resources of the corporate (Dyllick ve Hockerts, 2002). Economic dynamics such as technological advancement, globalization, and the removal of trade barriers have compelled businesses to shift their focus. Rather than utilizing all of their economic, environmental, and social resources solely as inputs for production, companies are increasingly allocating a portion of these resources to generate internal value—such as innovation capacity, brand reputation, or employee well-being—within the organization itself. A resource is valuable as long as it creates opportunity for the business or it can eliminate the risks of the business. Value creation is possible when resources are used effectively and efficiently to fulfill strategies (Barney, 1991). This value creation is not a short-term goal, but rather a long-term goal that must be fulfilled continuously and effectively. Now, not only the financial or economic performance but also the social and environmental performance of the corporate are evaluated by the stakeholders. Corporate performance is not equated with financial performance, but is expressed as a combination of economic, social and environmental performances (Atkinson, Waterhouse and Wells, 1997). The Triple Bottom Line (TBL) framework covering economic, social and environmental performance as an indicator of corporate sustainability was first used by John Elkington (1997). The TBL concept goes beyond the classical calculations of profit, return on investment and shareholder value as indicators of corporate sustainability to express economic well-being, environmental quality and social progress.

### **1.1 Statement of the Problem**

In this context, businesses have started to develop corporate sustainability policies in order to ensure environmental integrity, social welfare and continuous value creation for the society in their main activities. However, it is not solely sufficient to determine them within the corporate and to take them into account in the activities. The ability of businesses to operate in international areas depends on their ability to secure their continuity by gaining competitive advantage. Determining in which areas it can gain competitive advantage and how it will be perceived by its stakeholders is

possible by making sustainability measurable and comparable. It is necessary to measure the sustainability performances of the enterprises in order to be able to compare them with each other in terms of sustainability and to determine whether they have a competitive advantage in this field. At the same time, in order to increase sustainability performance, it is necessary to include the economic, environmental and social dimensions of sustainability in all strategic and operational processes and decision mechanisms. The necessity of including sustainability practices in business management has become a reality that must be accepted throughout the world, especially in developed countries. However, too many criteria need to be taken into account in the evaluation of corporate sustainability performance. Since it is a difficult process to evaluate many criteria in an objective and holistic way, this situation brings many problems for businesses.

Some of the companies that offer products and services to international markets in Türkiye share their sustainability performances with the public through various reports, taking as reference the widely used international reporting frameworks. However, the fact that this reporting process is foreign-dependent causes some indicators to be excluded due to socio-cultural reasons as well as the serious expenses it brings to businesses. While the performances of companies that share economic, environmental and social indicators through reports can be measured, the performances of companies that do not report cannot be measured holistically and cannot be evaluated in their decision processes.

## **1.2 Purpose of Research**

The aim of this study, it is to present an integrated sustainability performance evaluation model that can be used alone, which can be adapted to many different sectors and business scales, which perceives sustainability performance from an inclusive perspective, taking into account the current conditions in Türkiye in order to solve the above-mentioned problem. In this way, it is aimed to propose a model that will provide a source for determining the status of businesses in Türkiye on sustainability and identifying the aspects that need to be developed in order to integrate sustainability goals into business activities.

## **Chapter 2**

### **Literature Review**

In order to assess the progress of businesses regarding sustainability and effectively manage their performance, it is essential for them to initially measure their sustainability performance. Numerous studies have focused on the measurement, assessment, and management of corporate sustainability performance (Epstein and Widener, 2010; Gadenne et al., 2012; Morioka and Carvalho, 2016). Despite the abundance of literature on sustainability performance measurement, there is still no universally agreed upon definition of the term (Silva et al., 2019), highlighting that achieving an objective assessment of corporate sustainability remains a challenging endeavor (Aras et al., 2017).

When examining the relevant research, this chapter explores the meaning of "sustainability performance" and identifies the various aspects of sustainability performance that should be considered during evaluation. The objective is to offer an overview of the current literature on sustainability performance and its evaluation by addressing the foundational principles. This will allow for the identification of research gaps, as well as the formulation of suggestions to direct this research. The focus of this review will be restricted to sustainability performance on a business level; approaches that are more specific or more general than a business level, will not be brought up for discussion. The format of the work that will be done from this point on is as follows; part 2.1 will explain the approach and limitations about how the literature review is conducted. Then, in the following part, a list of publications that have been reviewed, together with their classification depending on their approaches, will be presented. In addition, a brief summary of the literature for conceptual and analytical articles will be provided.

#### **2.1 Systematic Approach for Literature Review**

This review is an analysis of the research that has been done on the literature concerning the sustainability performance and its evaluation in business contexts. An exploratory literature review on the primary concepts, such as sustainable development, corporate sustainability, sustainability performance, and TBL, was carried out in the first step of the process. In order to construct an initial knowledge about the research field, this was carried out in a manner that was non-structured. Some

of the references included in the reviewed articles are additionally evaluated in a broad sense for potential relevance to make sure no other relevant publications are missed. The criteria for the filters used for acquiring the article samples are defined at this stage, which is an essential outcome. A classification system was also created to provide a framework for the articles to be used in the review throughout the planning phase. Three types of classification were initially adopted: literature studies, conceptual approaches, analytical approaches.

In the second step, a sample of articles on sustainability performance was acquired by querying the Web of Science and Scopus databases for works published within the last decade. These databases were chosen because to their extensive collection of articles from publishers such as Emerald, Elsevier, JStor, Springer, Taylor & Francis, Willey, and others. The following filters are applied to journal titles, keywords, and abstracts to narrow the scope of the search: sustainability, performance, assess, evaluat, and measure. The initial review of the articles was limited to the titles and abstracts with the intention of eliminating papers that did not adhere to the current research or for which the entire paper was not available. The suitability of each item is checked carefully before being issued. Articles that focus on either product- or region- specific, are excluded. The aforementioned search terms have also been used in web search to find notable publications that are not academic in nature.

Following extensive research, it has been noted that studies discussing sustainability performance evaluation are abundant in the published literature. As a result, sustainability is discussed in a wide variety of settings, and a plethora of analytical and conceptual have taken various approaches to sustainability. Studies that provide a qualitative model or framework for assessing sustainability performance to better perceive, classify, or explore the concept are considered conceptual approaches. They offer novel insights into what information to gather. Studies that only explore ideas without offering a new model have been excluded. The focus or application areas of these articles is also noted. Quantitative methods are typically used in analytical studies to examine the sustainability performance evaluation numerically. These methods may include descriptive statistics, MCDM, optimization, or others. Analytical approaches offer insights into how to collect and process data, and they have two further types. The first group consists of studies that utilize an existing framework, such as Global Reporting Initiative (GRI), or an existing body of research as its

foundation. The second type consists of studies that offer their own model. The techniques used in each article are also noted.

## **2.2 Review of the Literature**

**2.2.1 Sustainable development and corporate sustainability.** The World Commission on Environment and Development (WCED) defined sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (Brundlant Report, 1987: 15). According to this definition, sustainable development is based on three principles: environmental integrity, social justice and economic welfare. If any of these three principles, each of which is important in itself, is not taken into account, economically sustainable development cannot be achieved (Bansal, 2005). This report, published by the Commission in 1987, identified the most pressing challenges facing life on Earth and inspired a series of international summits aimed at setting goals at which nations and private actors can contribute to sustainable development (Ferns & Amaeshi, 2019). Global goals for sustainable development were put forward for the first time with the Millennium Development Goals in 2000. The experience in the implementation of these targets has formed the basis for the creation of more inclusive and broader targets that concern all countries. As a result, in the United Nations General Assembly held in 2015, the “2030 Agenda”, which consists of 17 goals and 169 targets and named as Sustainable Development Goals (SDGs) that must be fulfilled by 2030, was signed by 196 member countries and was implemented (UN General Assembly, 2015).

These developments towards sustainable development in the international arena and the concept's inclusion in national economic policies have revealed the necessity for businesses that play the most important role in the reduction of resources to include sustainability practices in business management. Various attempts have been made to provide a more precise and operational definition of sustainability in the business context. A representative definition has been made by the International Institute for Sustainable Development (IISD, 1992) as 'to adopt business strategies and activities that meet the needs of the business and its stakeholders today while protecting, maintaining and enhancing the human and natural resources needed in the future'. van Marrewijk (2003) explained sustainability for companies as 'demonstrating that social and environmental concerns are incorporated into business activities and interactions

with stakeholders'. Székely and Knirsch (2005) define it as maintaining and expanding economic growth, shareholder value, prestige, corporate reputation, quality of products and services, and customer relationships.

**2.2.2 The importance of sustainability in SMEs.** SMEs are often regarded as the backbone of a nation's economy due to their substantial economic contributions. This is particularly evident in the large proportion of the total workforce they employ. According to the report published by the KOSGEB in 2023, the amount of labour force from SMEs has amounted to 71% of the entire proportion of labour force in Türkiye. According to the same report, 99.7% of enterprises operating in Türkiye are SMEs, and further clarifies that the share of SMEs in the total turnover is 43.9% and in the total production value is 37.3% (KOSGEB, 2023). Despite their crucial role in economic development, SMEs often focus primarily on financial outcomes, placing less emphasis on environmental and social responsibilities in order to stay competitive and sustain their operations. While SMEs—particularly those in the manufacturing industry—make substantial contributions to national gross domestic product (GDP), they simultaneously pose environmental risks, as most lack the integration of sustainable environmental practices into their strategies, operations, or long-term planning (Rita et al., 2018). Adopting green initiatives is often perceived by SMEs as costly and challenging. In fact, SMEs are estimated to be responsible for as much as 70% of global pollution (Hillary, 2004). According to OECD (2023), SMEs in the 15 OECD countries examined contribute approximately 40% of greenhouse gas emissions. They are also responsible for at least half of industrial pollution and commercial waste, and consume between 20% and 75% of total energy, electricity, and gas. Despite this substantial footprint, SMEs have largely been overlooked in policy discussions and initiatives aimed at environmental sustainability until recent years. This highlights an urgent need for SMEs to embrace eco-friendly approaches to help safeguard the planet for future generations.

Furthermore, “The European Green Deal” presented by the European Commission in 2019, outlines regulations that will extend beyond the borders of the European Union (EU), affecting not only companies within the Union but also all trading and economic partners. As the EU’s fifth largest trading partner and a key export destination (Özkadi and Tavukçu, 2021), Türkiye stands to be significantly impacted. The EU is also the primary source of foreign investment in Türkiye.

Consequently, Turkish businesses—regardless of their size—that engage in trade with the EU will face the implications and required changes prompted by the Green Deal. According to a 2023 report by KOSGEB, SMEs made up 94.2% of all exporting enterprises in 2021, accounting for 30.4% of the country’s total exports. Whether these challenges can be transformed into opportunities will depend on how quickly companies raise their awareness and embed sustainability and green transformation into their strategic planning and risk management processes.

Sustainability has become an important indicator of consumer preferences all over the world and environmentally friendly production is the reason for preference. It is inevitable for SMEs to invest in the green transformation when the Carbon Border Adjustment Mechanism and the Green Deal are at Türkiye’s door, and there is a risk paying billions of dollars in taxes every year at the EU borders. Moreover, unlike the big size companies, the agility of SMEs could bring them significant gains and introduce them to new markets. The green transformation in SMEs is also underlined in the Türkiye’s Green Deal Action Plan (2021). It is stated that the green transformation targets set forth in the international economy and trade, especially the comprehensive changes envisaged in the European Green Deal and EU policies, point to targets that concern the whole world and that require everyone from SMEs to companies operating around the world to adopt, and do their part in their implementation. The plan emphasizes SMEs in information activities on environmental labeling, waste management and increasing water use efficiency.

According to Grandar and Purcell (2012), sustainability reports provide SMEs with various opportunities and chances such as making a difference compared to their competitors, telling their own stories, obtaining easy financing and gaining advantages in risk management. Güner and Coşkun (2013) stated that while SMEs compete with other businesses, they have some functions that can be turned into opportunities in terms of environment, but it is considered that SMEs cannot benefit from these functions sufficiently. According to the research report published by TURKONFED (2022) and that is based on the workshop surveys in which 324 SMEs participated, 65% of the companies consider the European Green Deal as an opportunity, while the rate of those who see it as a risk is only 8%. In the same report, 40% of companies identified consultancy services, and 39% pointed to guidance on financing opportunities as the most beneficial support mechanisms for transitioning to greener production practices. EFRAG, an association established in 2001 to serve the public

interest with the encouragement of the European Commission, published the EU Sustainability Reporting Standards Draft Text in 2022 within the framework of its expanding mission. According to EFRAG (2022), sustainability reporting for SMEs should be considered as part of the set of standards for large enterprises and should be created with a focus on the business model, summarized sustainability information and retrospective key performance indicators. SME-specific standards should be developed that correspond to the expectations of the SME management team, value chain colleagues and financial institutions.

**2.2.3 Sustainability performance and its evaluation.** Despite the diversity of definitions of what sustainability means for companies, there is a common understanding that an organization should be measurable in order to determine its sustainability status (Özdemir et al., 2011). Stakeholders are increasingly demanding disclosure not only about economic performance but also about a company's environmental and social practices (Waddock, 2003). The importance of measuring and evaluating a company's sustainability performance has been highlighted by numerous stakeholders, including CEOs (Hayward et al., 2013), consumers (Cone Communications & Ebiquity, 2015), international organizations (WCED, 1987; UN General Assembly, 2015), policy makers (European Commission, 2011) and nonprofit organizations such as the Carbon Disclosure Project (CDP) or the Global Reporting Initiative (GRI). It has also been observed that investors respond positively (at least in the short term) to increasingly reliable sustainability performance information (Lackmann et al., 2012). Strand et al. (2015) found that stakeholder engagement can help improve sustainability performance. In addition, sustainability performance measurement and evaluation is seen as an appropriate tool for a company's ethical behavior in that it supports value creation management for stakeholders (Freeman, 2010) and provides important information for stakeholders (Searcy, 2012). With all these developments, the strategic importance of sustainability for companies is gradually increasing (Epstein and Roy, 2001; Bourne et al., 2003; Ansari and Kant, 2017).

With the increasing importance of sustainability in businesses, companies adapt the sustainability indicators of economic, social and environmental factors to their organizations and decision-making activities in a way that creates value for all their stakeholders. As a result of framework and standardization efforts carried out to reveal

the important role of businesses in sustainability, their duties and the requirements they have to fulfill, sustainability reporting indexes such as GRI, International Integrated Reporting Council (IIRC) and Organization for Economic Co-operation and Development (OECD) are now internationally accepted and widely adopted (Aras et al., 2017). In this context, corporate sustainability reporting tools, also known with various terminologies such as corporate social responsibility reporting, sustainable development reporting, the Triple Bottom Line reporting, non-financial reporting, and environmental, social and governance (ESG) reporting, have been developed and companies' sustainability practices have begun to be published extensively with these publicly available reports (Siew, 2015). Sustainability reports, which are actually a statement of results help companies to measure, understand and explain their performance in economic, environmental and social issues, and then to set strategic goals on these issues and to manage change effectively (Aras et al., 2018). Naturally, they are recognized as an important tool to aid comparative performance and decision making between companies in different fields (Singh et al., 2012). On the other hand, the rapid growth and diversity in corporate sustainability reports has made it very complicated to understand them (Siew, 2015).

#### **2.2.4 Conceptual approaches on sustainability performance evaluation.**

Since the 1990s, conceptual approaches on sustainability performance evaluation have been the subject of ongoing development. However, especially with the the development of freshly outlined sustainability indices and indicators, significant advancements have been made in the last decade. It is helpful to explain 'what' should be measured by making use of conceptual approaches, as well as what should be expected from the measurements and what sorts of indicators should be employed. A few of these models are eventually end up being evolved into tools that are utilized extensively in the industry. These tools can be categorized as reporting frameworks, standards, indices, and etc. Some of the main frameworks, standards and indices used within the scope of sustainability performance evaluation will be discussed next. Then, the articles that mainly discuss literature reviews, conceptual approaches and sustainability performance evaluation models in the last decade are summarized.

**2.2.4.1 Global Reporting Initiative (GRI).** GRI was established in Boston in 1997 with the aim of carrying out international sustainable economic activities, the

foundations of which were laid by the non-profit Coalition for Environmentally Responsible Economies (CERES) and the Tellus Institute. The GRI was established as a guide for establishing global standards for sustainability and measuring the three dimensions of sustainability. GRI offers organizations guidance in sustainability reporting. Sustainability reporting based on GRI Standards provides information about an organization's positive or negative contribution to sustainability.

The version released by GRI in 2016 is the first global standard. GRI Standards are grouped under two basic categories: universal standards and standards for topics. The latest revised Universal Standard was published in 2021 (GRI, 2022).

**2.2.4.2 United Nations Global Compact (UNGC).** UNGC, an initiative that encourages companies to operate responsibly and to support society, is the world's largest voluntary corporate sustainability initiative with its principles covering human rights, labor standards, environment and anti-corruption (UN Global Compact, 2022)

**2.2.4.3 Carbon Disclosure Project (CDP).** Focusing on 3 main areas as climate, water and forest, CDP aims to reduce environmental risks by transforming the environmental performance data requested from companies, cities, states and regions into detailed analyzes (CDP, 2022).

**2.2.4.4 Organization for Economic Co-operation and Development (OECD).** Providing discretionary principles and standards for responsible business management that complies with applicable law, the OECD provides recommendations by governments to multinational businesses. The guide aims to increase contributions to sustainable development by aligning the activities of multinational enterprises with government policies (OECD, 2011)

**2.2.4.5 International Finance Corporation (IFC).** IFC's Sustainability Framework, adopted in 2006 and updated in 2012, consists of The Policy on Environmental and Social Sustainability, which describes IFC's commitment to sustainable development, the Performance Standards that explain the roles and responsibilities of customers in relation to environmental and social risk management, and Access to Information Policy that explains IFC's corporate obligations regarding transparency and accountability (IFC, 2022).

**2.2.4.6 International Integrated Reporting Council (IIRC).** The International Integrated Reporting Council (IIRC) is a global association of companies, investors, non-governmental organizations and accounting professionals. The aim of this association, which produces ideas for the development of the corporate reporting process, is to report information on the economic, environmental and social impacts of institutions (IIRC, 2022).

**2.2.4.7 Greenhouse Gas Protocol (GHG Protocol).** The GHG Protocol, which is used as an international carbon calculation tool, was put forward by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD). The GHG Protocol represents a voluntary international standard that enables businesses to report information from global operations in a way that provides a clear picture of greenhouse gas risks and mitigation opportunities.

**2.2.4.8 ISO Standards.** ISO is the world's largest developer of voluntary International Standards. It publishes more than 21,000 International Standards covering all aspects of agriculture, health, food safety, computing, technology and commerce. ISO Standards are widely used around the world, although they are voluntary.

The Social Responsibility Guide ISO 26000 was published in 2010. ISO 26000 is a guide that all businesses can benefit from in terms of social responsibility. It provides guidance to businesses on how they should continue their activities with a sense of social responsibility (ISO, 2022).

ISO 14000 family, which is included in the ISO standards, was put into practice in 1996 as a result of the Rio Environment Summit held in 1992. It undertakes the task of guidance in determining all factors affecting the environment from the raw material to the presentation of the product to the customer and minimizing the environmental destruction by taking the necessary precautions (ISO, 2022).

**2.2.4.9 AA1000 AccountAbility principles.** The AccountAbility Principles for sustainable development, first published in 1999, are principles-based standards and frameworks used by a wide range of organizations (global businesses, private

companies, governments, etc.) to demonstrate leadership and performance in accountability, responsibility and sustainability (AccountAbility, 2022).

**2.2.4.10 Dow Jones Sustainability Indices (DJSI).** DJSI was created in 1999 with the joint collaboration of RobecoSAM and S&P Dow Jones Indices. This index provides investors with the opportunity to compare stock performance information in terms of economic, environmental and social aspects, and provides important opportunities for businesses that want to achieve best practices in terms of sustainability. Only businesses with the best corporate sustainability can join the DJSI family. DJSI, the first global index used to track sustainability-oriented financial performances worldwide, is used to measure the financial performance of sustainability leaders (S&P, 2022).

**2.2.4.11 Borsa Istanbul Sustainability Index (BIST).** Borsa Istanbul sustainability index (BIST), published in 2014, supports the development of investment conditions in Türkiye. In addition to increasing the transparency of the private sector in the field of corporate sustainability, it provides an objective and clear evaluation.

Its purpose is to create an index selected by companies with high corporate sustainability performance among companies registered on the Istanbul Stock Exchange (ISE). In this context, the index allows companies to compare their corporate sustainability performance on a local and global basis. In addition, the ISE provides companies with a tool to evaluate their performance and thus adopt new targets, while helping them to develop their risk management capabilities for corporate transparency, accountability and sustainability (BIST, 2022).

**2.2.4.12 Conceptual approaches in literature.** In this part, the articles that mainly discuss literature reviews, conceptual approaches and sustainability performance evaluation models in the last decade are summarized. In Table 1, the classified listing of the reviewed articles on conceptual approach is provided.

Berardi (2012) conducted an extensive study involving a dataset of 490 buildings and concluded that most established building sustainability rating systems—such as BREEAM (Building Research Establishment Environmental Assessment Method) and LEED (Leadership in Energy and Environmental Design)—tend to place

disproportionate emphasis on energy performance. According to his findings, energy-related metrics consistently outranked other sustainability dimensions, such as water usage, materials, or indoor environmental quality, indicating a potential imbalance in how these systems define and prioritize sustainability. In the same year, Moldan et al. (2012) contributed to the conceptual foundations of sustainability performance evaluation (SPE) by arguing that meaningful assessment must be anchored in clearly defined reference points and measurable targets. They emphasized that without goal-setting and benchmark values, evaluations risk becoming abstract and disconnected from actionable progress. Their work highlighted the strategic importance of establishing normative standards for interpreting sustainability outcomes. Also, Schneider and Meins (2012) introduced the concept of "sustainability governance" as an essential dimension of corporate sustainability performance. Their proposition expanded the traditional boundaries of SPE by incorporating organizational structures, accountability mechanisms, and decision-making processes that influence how sustainability is managed and implemented within firms. Searcy (2012) offered a forward-looking perspective by identifying several key research questions aimed at guiding future investigations in the field of SPE. His work served as a roadmap for researchers by pointing out underexplored areas and methodological gaps in the literature, particularly with regard to indicator development, performance integration, and reporting practices. In a significant literature review, Singh et al. (2012) examined the technical construction of sustainability indices, shedding light on how individual indicators are selected, scaled, normalized, weighted, and ultimately aggregated to form composite measures. Their study examined the technical steps of scaling, normalization, weighting, and aggregation, which all play a critical role in shaping the outcomes of sustainability assessments. Čuček et al. (2012), through two separate literature reviews, clarified key terms in the field, including composite sustainability indicators, carbon footprint, and ecological footprint. Their work helped provide a clearer understanding of these foundational concepts. Tokos et al. (2012) proposed not only GRI-compatible indicators covering economic, environmental, and social aspects, but also integrated indicators specifically developed for the brewing industry. This approach showed how general frameworks can be tailored to meet the needs of specific sectors. Lastly, Zhou et al. (2012) compared different combinations of normalization, weighting, and aggregation techniques to assess which ones worked best when developing a composite indicator for the construction industry. Improving

the reliability and clarity of sustainability performance evaluations in that sector was the aim of the research.

Goyal et al. (2013) conducted a structured literature review that examined how sustainability performance relates to firm performance. Their analysis showed that environmental and social initiatives can influence a company's overall success, especially in areas like financial outcomes, operational efficiency, and stakeholder relations. The study highlighted that sustainability is increasingly being seen not just as a compliance issue, but also as a potential source of business value. Gatti and Seele (2013) analyzed the terminology used in sustainability reports, focusing on how companies communicate their sustainability efforts. They identified trends in the use of specific terms and noted that although the frequency of sustainability-related language has increased, the meanings and interpretations of those terms still vary across organizations.

Ingwersen et al. (2014) suggested using a combination of tools—such as Life Cycle Assessment (LCA), ecological footprint, and Green Net Value Added (GNVA)—to better capture the multiple dimensions of sustainability. They argued that relying on a single method may miss important aspects, and combining tools can offer a more complete view of sustainability impacts at both product and organizational levels. Searcy (2014) introduced a conceptual framework for sustainability performance evaluation (SPE). The framework outlined several core requirements and their sub-elements to help companies develop more structured and reliable assessment systems.

In 2015, Kim et al. (2015) pointed out several limitations of LCA-based SPE frameworks, particularly their lack of focus on decision-making and social dimensions. In their research, they proposed a decision-support framework designed to improve sustainability outcomes in manufacturing processes, offering more practical guidance for companies aiming to implement sustainability in day-to-day operations. Kühnen and Hahn (2015) examined the broader challenges in the SPE literature and argued that there is still no shared understanding of how to measure the social impact of businesses. They argued that the lack of standard indicators and consistent definitions makes it difficult to evaluate or compare social performance across companies.

Morioka and de Carvalho (2016) reviewed key contributions and inconsistencies in the literature on corporate sustainability performance (CSP). They identified nine

widely used conceptual frameworks, including major standards such as the Dow Jones Sustainability Index (DJSI) and the Global Reporting Initiative (GRI). Maas et al. (2016) analyzed recent publications and observed that core functions such as performance evaluation, financial accounting, internal control, and public disclosure are often handled separately within organizations. They argued that this fragmented approach weakens the effectiveness of sustainability assessments and they proposed an integrated structure that connects sustainability measurement with bookkeeping, control systems, and reporting mechanisms to address this. Poveda and Elbarkouky (2016) introduced a hybrid conceptual model aimed at benchmarking firms in the energy industry. Their model included a new sustainability rating system, designed to capture both traditional and emerging sustainability metrics, thereby supporting more nuanced performance comparisons within the sector. Ferreira and Silva (2016) developed a five-step balanced scorecard framework for evaluating sustainability performance in supply chains. Their model incorporated indicators from the GRI and ISO 14031, emphasizing the need for standardized and structured approaches to performance tracking across interconnected business operations. Rodrigues et al. (2016) conducted a systematic review of the literature and identified 787 sustainability performance evaluation indicators, which they organized into categories to create a refined set of key performance indicators (KPIs) for product development. Miller et al. (2016) introduced a composite index tailored to public transportation systems, designed to evaluate sustainability performance in that specific sector. Their model integrates various indicators to support decision-making in urban transport planning and policy development.

Amui et al. (2017) conducted a comprehensive literature review that focused on dynamic capabilities for sustainability, aiming to assess the current state of research and identify critical gaps between organizational practices and institutional strategies. Their analysis emphasized that the alignment between what is practiced in the field and what is proposed in institutional frameworks remains limited. Kumar et al. (2017) reviewed the use of Multi-Criteria Decision-Making (MCDM) techniques in evaluating sustainability performance, particularly within renewable energy projects. Their work highlighted the growing role of decision-support tools in improving the transparency and consistency of sustainability assessments in complex energy systems. Singh and Vinodh (2017) proposed a new conceptual framework for sustainability performance evaluation. Their model consisted of 5 enablers, 25 criteria,

and 75 attributes, offering a structured and multi-layered approach to understanding how sustainability is supported within organizations. Schöggel et al. (2017) explored the connection between sustainability performance evaluation (SPE) and product design, introducing a qualitative assessment checklist to support early-stage sustainability considerations. They tested the framework through a case study involving 9 lightweight automotive technologies, demonstrating how such a tool can guide design decisions toward more sustainable outcomes.

In 2018, a wide range of studies on sustainability performance evaluation were reviewed by Büyüközkan and Karabulut (2018). They pointed out that many existing models lack balance and clarity in defining relevant criteria. They also noted the challenges posed by the subjective nature of some qualitative indicators. In the same year, Qorri et al. (2018) examined different methods used to measure sustainability with a focus on supply chains. Their findings show that while various tools are used across sectors, there is a growing preference for multi-criteria approaches like Life Cycle Assessment and the Analytic Hierarchy Process, which help capture the complexity of sustainability in practice.

In 2019, Mousa and Othman (2019) explored how green HRM practices are applied in Palestinian healthcare organizations. Through interviews and surveys, they found that these practices were moderately implemented, with ‘green hiring’ and ‘green training’ seen as most effective. While green HRM was not fully integrated, overall sustainable performance was rated relatively high. That same year, Kamble et al. (2019) reviewed studies on data use in sustainable agriculture supply chains. They examined how analytics—descriptive, predictive, and prescriptive—support sustainability goals. Their findings led to a practical framework showing that data visibility and resource use play a key role in improving sustainability through analytics.

Bui and Filimonau (2021) reviewed academic studies to assess how commercial foodservice businesses perform in terms of triple bottom line sustainability. Their analysis highlighted key focus areas such as food waste, health and safety, local sourcing, staff well-being, and support for disadvantaged groups. Malesios et al. (2021) conducted a literature review to understand which sustainability practices and performance criteria are commonly used, how they are linked, and what methods are applied to study these links. Based on 58 studies, they proposed a framework using statistical models to help SMEs measure and improve their sustainability performance.

Table 1

*Reviewed Articles on Conceptual Model*

| Year | Author(s)               | Application Area / Subject         | Type                          |
|------|-------------------------|------------------------------------|-------------------------------|
| 2012 | Berardi                 | Construction Sustainability Rating | Framework                     |
| 2012 | Čuček et al.            | Index                              | Conceptual literature reviews |
| 2012 | Moldan et al.           | N/A                                | Conceptual literature review  |
| 2012 | Schneider and Meins     | N/A                                | Framework                     |
| 2012 | Searcy                  | N/A                                | Conceptual literature review  |
| 2012 | Singh et al.            | Index                              | Conceptual literature review  |
| 2012 | Tokos et al.            | Brewing                            | Framework                     |
| 2013 | Goyal et al.            | N/A                                | Conceptual literature review  |
| 2013 | Herva and Roca          | N/A                                | Analytical literature review  |
| 2014 | Gunasekaran et al.      | Supply Chain                       | Conceptual literature review  |
| 2014 | Ingwersen et al.        | N/A                                | Framework                     |
| 2014 | Searcy                  | N/A                                | Framework                     |
| 2015 | Kim et al.              | N/A                                | Framework                     |
| 2016 | Ferreira and Silva      | Supply Chain                       | Balanced Scorecard            |
| 2016 | Garcia et al.           | Energy                             | Framework                     |
| 2016 | Hansen and Schaltegger  | N/A                                | Conceptual literature review  |
| 2016 | Kylili et al.           | Construction                       | Conceptual literature review  |
| 2016 | Maas et al.             | Sustainability reporting           | Conceptual literature review  |
| 2016 | Miller et al.           | Transportation                     | Composite Index               |
| 2016 | Morioka and de Carvalho | N/A                                | Conceptual literature review  |
| 2016 | Poveda and Elbarkouky   | N/A                                | Framework                     |
| 2016 | Rodrigues et al.        | Product development                | Framework                     |
| 2016 | Schöggl et al.          | Supply Chain                       | Composite Index               |
| 2017 | Amui et al.             | N/A                                | Conceptual literature review  |

Table 1 (Cont'd)

| Year | Author(s)                            | Application Area / Subject | Type                                    |
|------|--------------------------------------|----------------------------|-----------------------------------------|
| 2017 | Boiral and Henri                     | N/A                        | Discussion                              |
| 2017 | de Almeida Guimarães and Leal Junior | Transportation             | Framework                               |
| 2017 | Kumar et al.                         | Energy                     | Analytical literature review            |
| 2017 | Schögggl et al.                      | Automotive                 | Framework                               |
| 2017 | Sikdar et al.                        | N/A                        | Conceptual literature review            |
| 2017 | Singh and Vinodh                     | N/A                        | Framework                               |
| 2018 | Büyüközkan and Karabulut             | N/A                        | Conceptual/Analytical literature review |
| 2018 | Qorri et al.                         | Supply Chain               | Framework                               |
| 2019 | Mousa and Othman                     | Healthcare                 | Framework                               |
| 2019 | Kamble et al.                        | Agriculture Supply Chain   | Analytical literature review            |
| 2021 | Bui and Filimonau                    | Catering services          | Literature review                       |
| 2021 | Malesios et al.                      | SMEs                       | Literature review                       |

### 2.2.5 Analytical approaches on sustainability performance evaluation.

Numerous scholars have developed analytical techniques for assessing sustainability performance. These approaches make use of a wide range of quantitative methods, such as descriptive statistics, composite indices, and multi-criteria decision-making (MCDM). These techniques can either make use of an already existing framework such as GRI and apply it to a particular context, or they can present a new model to measure the performance of several components of sustainability. In this part, the articles that use analytical approach for sustainability performance evaluation in the last decade are summarized. In Table 2, the classified listing of the reviewed articles on analytical model is provided.

In 2012, a four-phase sustainability performance evaluation (SPE) methodology introduced by Dai and Blackhurst (2012), that integrated Analytic Hierarchy Process (AHP) with Quality Function Deployment (QFD) to support supplier selection decisions. Their approach structured sustainability criteria and stakeholder priorities into a phased model that enhances transparency in decision-making. To demonstrate the practical relevance of the method, they applied it to a case involving a large retail company. García-Melón et al. (2012) proposed a SPE framework specifically designed for sustainable tourism. Their model was built using the Analytic Network Process

(ANP)—a form of Multi-Criteria Decision-Making (MCDM)—combined with a Delphi-based participatory process to ensure stakeholder consensus. They applied the methodology to a real-world case in Venezuela, using 3 scenarios and 13 sustainability criteria to demonstrate how tourism planning can be informed by structured and participatory sustainability assessment. In the same year, Ghadimi et al. (2012) developed a fuzzy MCDM-based method for comparing the sustainability of different products. Their approach incorporated expert judgment and weighted fuzzy logic, offering a flexible evaluation tool that addresses uncertainty in qualitative assessments. The methodology was validated through an application in the automotive component industry, where product alternatives were assessed based on sustainability-related factors. Also in 2012, Traverso et al. (2012) conducted a sustainability performance evaluation focused on assembly operations for photovoltaic modules. Their work aimed to identify areas for improvement in production processes from an environmental and resource-efficiency perspective, highlighting the relevance of operational-level analysis in SPE. Wolfslehner et al. (2012) applied a multi-criteria evaluation framework to a regional forest-wood supply chain. Their goal was to assess and enhance sustainability across different stages of the value chain, considering environmental, economic, and social indicators. The case study demonstrated how regional natural resource management can benefit from structured performance evaluations. Li et al. (2012) introduced a composite sustainability index specifically designed for manufacturing companies. Their model integrated multiple indicators into a single score to enable performance benchmarking. Bilbao-Terol et al. (2012) approached sustainability performance from a financial decision-making perspective, developing an SPE-supported investment evaluation model. They compared conventional funds with socially responsible investment (SRI) funds, incorporating financial, environmental, social, and ethical criteria, providing insights into how sustainability considerations can be integrated into portfolio management. Lastly, in two separate studies, Vinodh and Girubha (2012a; 2012b) examined ways to enhance sustainability performance in manufacturing using ELECTRE II and PROMETHEE, both widely recognized MCDM methods. Their work demonstrated how these tools can be applied to rank alternatives and support strategic sustainability decisions within production systems.

In 2013, a sustainability performance evaluation (SPE) model tailored to construction projects was developed by Akadiri et al. (2013). Their study incorporated

6 main factors and 24 detailed criteria and framework was designed to support decision-makers in assessing sustainability throughout the construction lifecycle by integrating environmental, social, and economic considerations relevant to the sector. Alves de Albuquerque et al. (2013) combined multi-criteria decision-making (MCDM) techniques with Petri nets to propose a novel evaluation method. Their model included advanced sustainability indicators such as exergy and global warming potential of emissions, aiming to capture both the efficiency and environmental impact dimensions of sustainability in complex systems. In the same year, Herva and Roca (2013) contributed to the methodological discussion in their review paper by emphasizing the growing role of fuzzy logic in sustainability evaluations. They noted that imprecision and subjectivity are inherent challenges in SPE, and fuzzy logic techniques offer a flexible way to address vague or qualitative data, improving the robustness of assessment outcomes. Nikolaou et al. (2013) proposed a set of social responsibility performance indicators for reverse logistics systems, building their framework on the widely recognized GRI standards. Govindan et al. (2013) tackled the supplier selection problem by introducing an SPE-based model that incorporated linguistic preferences of experts using triangular fuzzy numbers. Their research allowed subjective opinions to be mathematically represented and integrated into the decision-making process, making the evaluation more inclusive and context-sensitive. Later that year, a general-purpose SPE tool for the construction industry was presented by Pons and de la Fuente (2013) based on the value function concept. Their model aimed to help project managers assess sustainability using a value-based scoring mechanism, balancing technical, economic, and environmental factors in construction decision-making. Ren et al. (2013) introduced a method for mapping cause-effect relationships in hydrogen supply chains, using 37 sustainability parameters. Their work aimed to uncover how various factors interact across the supply chain, providing a systemic view of sustainability impacts in emerging energy systems. Costa and Menichini (2013) proposed a hybrid methodology that combined multi-criteria decision-making with fuzzy linguistic variables to evaluate both monetary and non-monetary dimensions of sustainability. In their study in 2013, Vinodh et al. (2013) applied the VIKOR method, a compromise ranking technique, to improve sustainability performance in an assembly enterprise. The method facilitated the selection of balanced alternatives by minimizing conflict between multiple sustainability objectives. Lastly, Babcicky (2013) critically evaluated an

environmental index through a case study. His findings revealed weaknesses in both the index structure and its underlying SPE approach, suggesting that further refinement is needed to enhance its usefulness in real-world applications.

In 2014, a sustainability performance evaluation (SPE) framework was proposed by Chardine-Baumann and Botta-Genoulaz (2014) where they integrated the composite index approach with multi-criteria decision-making (MCDM) methods. Their model aimed to synthesize diverse sustainability indicators into a unified structure, enabling decision-makers to compare alternatives while considering environmental, economic, and social dimensions simultaneously. That same year, Gunasekaran et al. (2014) published a literature review on the importance of applying operations research (OR) tools in SPE model development. They argued that OR techniques can help manage the complex trade-offs between the 3 pillars of sustainability, and support structured, data-driven decision-making in organizational contexts. Later that year, a composite index-based framework for assessing sustainability in renewable energy systems was introduced by Liu (2014). The study incorporated 11 performance indicators and highlighted the limitations of discrete evaluation scales, suggesting they often fail to capture the nuanced and dynamic nature of sustainability performance, especially in rapidly evolving energy sectors. In the same year, Van der Voet et al. (2014) proposed a quantitative MCDM methodology capable of handling both compensation effects and indicator weighting. The integrated SPE framework in this study used a structured hierarchy of indicators to better reflect the relative importance of sustainability dimensions and mitigate distortions in evaluation results. Ziolkowska (2014) developed a multi-objective linear programming (MOLP) model to evaluate sustainable biofuel production under conditions of resource limitation and uncertainty. The model in her study provided a mathematical structure for optimizing sustainability outcomes while addressing some constraints in renewable energy systems. Also in the same year, Pinar et al. (2014) proposed a non-linear aggregation method to construct a sustainability index based on 19 indicators. Her approach was based on a novel method in SPE literature, the Choquet Integral, which respects monotonicity and avoids compensability—ensuring that poor performance in one criterion cannot be completely offset by high performance in another. Barata et al. (2014) also contributed an original multi-criteria evaluation approach tailored to the assessment of corporate sustainability performance. In their study, they combined various dimensions into a coherent

framework, helping organizations identify key improvement areas. Finally in 2014, Zolfani and Sapauskas (2014) demonstrated a relatively recent MCDM technique, the application of SWARA (Step-wise Weight Assessment Ratio Analysis) for selecting sustainable energy systems. The findings in their study showed that SWARA is an effective tool for structuring expert judgment and prioritizing evaluation criteria in SPE contexts.

In 2015, Escrig-Olmedo et al. (2015) applied a hybrid fuzzy TOPSIS method to assess sustainability performance in the apparel industry. In their model, they aimed to manage uncertainty and vagueness in expert evaluations by combining fuzzy logic with the TOPSIS technique. Their research demonstrated how such an approach can be used in industries where qualitative judgments and subjective criteria are prevalent. That same year, Tan et al. (2015) explored the relationship between sustainability performance and corporate competitiveness in the international construction sector. Based on their findings, they argued that improved sustainability performance can enhance a company's competitive advantage, especially in global markets where environmental and social standards are increasingly important for project selection and stakeholder perception. Lastly, Rajak and Vinodh (2015) pointed out that the evaluation of social sustainability using performance indicators remains underdeveloped in the academic literature. In their study, they proposed their own assessment approach to address this gap, emphasizing the importance of measuring social aspects alongside environmental and economic dimensions in sustainability evaluations.

In 2016, an evaluation approach designed to measure the total economic, environmental, and social impacts that businesses generate or mitigate in society was introduced by Hendriksen et al. (2016). In their study, they aimed to capture both the positive and negative externalities of corporate activities and offered a more comprehensive view of how businesses contribute to or detract from sustainability at the societal level. Later that year, Zhao and Li (2016) evaluated the smart power grid planning in China by combining Fuzzy TOPSIS with Stochastic Analytic Hierarchy Process (AHP). Their proposed model incorporated 4 main criteria and 12 sub-criteria, enabling a nuanced assessment of energy infrastructure projects by integrating both uncertainty and expert judgment. In the same year, an analytical technique based on statistical process control (SPC) charts proposed by Maltz et al. (2016) to monitor changes in sustainability performance over time. They applied their method to a

benchmarking study of energy companies in the United States, and they tracked and interpreted variations in performance to identify trends, outliers, and areas requiring managerial attention. Onat et al. (2016) developed a hybrid life-cycle-based sustainability performance evaluation model for comparing different transportation alternatives. Their model enabled more refined judgments under uncertainty by integrating TOPSIS with intuitionistic fuzzy logic. Also in the same year, Kolak and Feyzioglu (2016) contributed to hybrid evaluation methods by combining TOPSIS with the Choquet Integral. In their study, they aimed to address the limitations of traditional additive models and improve the accuracy of SPE in complex decision contexts. Finally, Wibowo and Grandhi (2016) implemented an advanced method using the intuitionistic hesitant fuzzy Choquet integral to evaluate power generation alternatives. In their study, the model accounted for hesitation and indecision in expert input, making it particularly suitable for high-stakes infrastructure planning where data may be uncertain or conflicting.

In 2017, in order to evaluate alternative options for industrial ovens Pask et al. (2017) introduced a set of 7 simple sustainability indicators. In their study, they integrated fuzzy set theory with Monte Carlo simulation to account for uncertainty in both data quality and expert assessments. The indicator weights were derived from the evaluations of industrial experts, and the alternatives were assessed using readily available technical and operational data. That same year, Rivera et al. (2017) applied a methodology grounded in fuzzy set theory to assess the economic, environmental, and social performance of publicly listed Spanish companies. The data that they used in their analysis was from the Thomson Reuters ASSET4 database, and offered a structured way to handle qualitative uncertainty in corporate sustainability assessments. Ghadimi et al. (2017) developed a fuzzy inference system specifically aimed at evaluating and selecting the most sustainable suppliers for an automotive spare part manufacturer. They combined expert input and linguistic variables to assess suppliers across a range of sustainability-related factors. Similarly, Bottani et al. (2017) proposed a numerical evaluation framework for assessing sustainability performance at the company level across the 3 main dimensions—economic, environmental, and social. In their study, the model was based on a monotonic hierarchical fuzzy inference tool, which aggregated expert judgments into a composite index. Later on, a novel multi-criteria decision-making (MCDM) method based on the MIVES approach was presented by Fuente et al. (2017), in order to evaluate the

sustainability performance of wind-turbine towers. Their model incorporated a range of economic, environmental, and social requirements. In the same year, Rodger and George (2017) used fuzzy set theory to optimize sustainability outcomes in natural gas supply chains. In their study, they aimed to balance competing objectives such as resource efficiency, cost, and emissions reduction. Sikdar et al. (2017a) adopted a Euclidean distance-based approach to sustainability performance evaluation, in which indicator values represent the position of a system relative to an ideal sustainability point. Their method provided a visual and mathematical means to compare sustainability levels across alternatives. Kamali and Hewage (2017) identified 33 relevant criteria for evaluating the sustainability of both modular and conventional construction methods. They then weighted these criteria through a survey of industry experts and produced a tailored framework that reflects sector-specific sustainability concerns and priorities. In the same year, Raut et al. (2017) developed an integrated MCDM framework to assess the sustainability performance of commercial banks. In their model, they combined the Balanced Scorecard, fuzzy AHP, and fuzzy TOPSIS to structure performance evaluation across multiple levels. The framework was tested through a case study involving 6 Indian banks, and demonstrated that how it can guide strategic decision-making in finance based on sustainability criteria.

Raj and Srivastava (2018) developed a composite index to assess the sustainability of an Indian aircraft manufacturer using a fuzzy multi-criteria method. Drawing on expert input and literature, they identified key sustainability attributes and used fuzzy logic to handle hard-to-measure areas. Economic factors were found to be the most influential, and while overall performance was strong, several weaker areas needing improvement were also highlighted.

Cui et al. (2019) developed a hybrid method to better assess the sustainability performance of high-tech firms by combining both quantitative and qualitative techniques. Using cluster analysis, grey theory, and DEMATEL, the study identified key sustainability criteria. Findings highlight the importance of socio-environmental factors.

Naghi Beiranvand et al. (2021) proposed a model to assess sustainable product-service supply chain performance in the oil and gas sector. They identified ten key performance criteria, including environmental, financial, social, operational, and innovation-related aspects, offering a broad framework for evaluating sustainability in this industry.

Table 2

*Reviewed Articles on Analytical Model*

| Year | Author(s)                           | Application Area / Subject | Method                    | Specific Techniques                  |
|------|-------------------------------------|----------------------------|---------------------------|--------------------------------------|
| 2012 | Bilbao-Terol et al.                 | Finance                    | MCDM                      | Fuzzy Goal                           |
| 2012 | Dai and Blackhurst                  | Purchasing                 | MCDM                      | AHP, QFD                             |
| 2012 | García-Melón et al.                 | Tourism                    | MCDM                      | ANP, Delphi                          |
| 2012 | Ghadimi et al.                      | Automotive                 | MCDM                      | Fuzzy AHP, Weighted Fuzzy            |
| 2012 | Lee and Farzipoor Saen              | Electronics                | Data envelopment analysis | N/A                                  |
| 2012 | Li et al.                           | N/A                        | Composite Index           | PCA                                  |
| 2012 | Traverso et al.                     | Photovoltaics              | LCA                       | N/A                                  |
| 2012 | Vinodh and Girubha                  | Manufacturing              | MCDM                      | ELECTRE II                           |
| 2012 | Vinodh and Girubha                  | Manufacturing              | MCDM                      | PROMETHEE                            |
| 2012 | Wolfslehner et al.                  | Forestry                   | MCDM                      | PROMETHEE                            |
| 2012 | Zhou et al.                         | Construction               | Composite Index           | Normalization, weighing, aggregation |
| 2013 | Akadiri et al.                      | Construction               | MCDM                      | FAHP                                 |
| 2013 | Babcicky                            | Index                      | Descriptive statistics    | PSR, Regression                      |
| 2013 | Büyüközkan and Çifçi                | Supply Chain               | MCDM                      | GDM, QFD                             |
| 2013 | Costa and Menichini                 | Sustainability reporting   | MCDM                      | Fuzzy, 2-tuple                       |
| 2013 | Govindan et al.                     | Supply Chain               | MCDM                      | Fuzzy TOPSIS                         |
| 2013 | Hsu et al.                          | Sustainability reporting   | MCDM                      | ANP                                  |
| 2013 | Nikolaou et al.                     | Logistics                  | Composite Index           | Arithmetic weighing                  |
| 2013 | Pons and de la Fuente               | Construction               | MCDM                      | Value function                       |
| 2013 | Ren et al.                          | Supply Chain               | MCDM                      | DEMATEL                              |
| 2013 | Vinodh et al.                       | Manufacturing              | MCDM                      | VIKOR                                |
| 2014 | Barata et al.                       | Energy                     | MCDM                      | ELECTRE                              |
| 2014 | Chardine-Baumann and Botta-Genoulaz | N/A                        | Composite Index           | Arithmetic weighing                  |
| 2014 | Liu                                 | Energy                     | MCDM, Composite Index     | Fuzzy AHP, Arithmetic weighing       |
| 2014 | van der Voet et al.                 | N/A                        | Framework, MCDM           | N/A                                  |
| 2014 | Ziolkowska                          | Biofuels                   | MCDM                      | PROMETHEE                            |
| 2014 | Zolfani and Saparauskas             | N/A                        | MCDM                      | SWARA                                |

Table 2 (Cont'd)

| Year | Author(s)               | Application Area / Subject | Method                 | Specific Techniques                            |
|------|-------------------------|----------------------------|------------------------|------------------------------------------------|
| 2015 | Escrig-Olmedo et al.    | Manufacturing              | MCDM                   | Fuzzy TOPSIS                                   |
| 2015 | Rajak and Vinodh        | Automotive                 | MCDM                   | Fuzzy                                          |
| 2015 | Tan et al.              | Construction               | Descriptive statistics | Correlation, regression                        |
| 2016 | Kolak and Feyzioglu     | Transportation             | MCDM                   | TOPSIS, Choquet integral                       |
| 2016 | Maltz et al.            | Energy                     | Descriptive statistics | Statistical charts                             |
| 2016 | Medel-González et al.   | Energy                     | MCDM                   | ANP, BSC                                       |
| 2016 | Onat et al.             | Transportation             | MCDM                   | TOPSIS, Intuitionistic fuzzy                   |
| 2016 | Wibowo and Grandhi      | Energy                     | MCDM                   | Intuitionistic hesitant fuzzy Choquet integral |
| 2016 | Zhao and Li             | Energy                     | MCDM                   | Fuzzy TOPSIS, AHP                              |
| 2017 | Acquaye et al.          | Energy                     | Input-output analysis  | MRIO                                           |
| 2017 | Bottani et al.          | Food                       | MCDM                   | Fuzzy                                          |
| 2017 | Fuente et al.           | Energy                     | MCDM                   | MIVES                                          |
| 2017 | Ghadimi et al.          | Automotive                 | MCDM                   | Fuzzy                                          |
| 2017 | Kamali and Hewage       | Construction               | MCDM                   | Fuzzy                                          |
| 2017 | Pask et al.             | Automotive                 | MCDM                   | Fuzzy, Monte Carlo                             |
| 2017 | Raut et al.             | Finance                    | MCDM                   | Fuzzy, AHP, TOPSIS                             |
| 2017 | Rivera et al.           | Stock market               | Numerical analysis     | Fuzzy                                          |
| 2017 | Rodger and George       | Energy                     | MCDM                   | Fuzzy                                          |
| 2017 | Sikdar et al.           | N/A                        | Descriptive statistics | Euclidean distance                             |
| 2018 | Raj and Srivastava      | Manufacturing              | MCMD                   | Fuzzy best worst                               |
| 2019 | Cui et al.              | High-tech firms            | Hybrid                 | Cluster, Grey, DEMATEL                         |
| 2021 | Naghi Beiranvand et al. | Oil and gas                | MCDM                   | Fuzzy, Factor analysis                         |

## **Chapter 3**

### **Methodology**

#### **3.1 Epistemological and Ontological Foundations**

Qualitative research is grounded in specific assumptions about the nature of reality and knowledge, and is often associated with the interpretivist paradigm. Ontologically, qualitative research assumes that reality is not singular but multiple and socially constructed. In the social world, multiple constructed realities exist and can only be understood holistically within their context. From this perspective, reality is shaped by participants' perceptions and interpretations; each stakeholder's experiences and viewpoints reflect a distinct understanding of the phenomenon under study. Epistemologically, qualitative research is based on a subjective and interactional understanding of knowledge. There is no clear separation between the researcher and the researched; the source of knowledge and the knower are inherently intertwined. Thus, the researcher in qualitative inquiry is not merely a "measurement tool" but an active participant in collecting, interpreting, and constructing knowledge through interaction with participants. The resulting knowledge is co-constructed through the engagement of the researcher and the participants' meaning-making processes (Denzin and Lincoln, 2018).

This paradigm emphasizes subjective meanings and context. Qualitative researchers aim to understand phenomena from the participants' perspectives within their natural settings. Unlike quantitative studies, which often seek generalizable laws, qualitative research seeks to explore and describe the processes and meanings emerging in specific contexts. Therefore, qualitative research usually follows an inductive reasoning process, and focuses not on hypothesis testing but on developing concepts and themes from data (Denzin and Lincoln, 2018). In qualitative research, the goal is to provide a deep insight specific to the research context, rather than taking the generalizability as a primary concern. Qualitative research is characterized by a flexible design which allows methodological adjustments throughout the process. According to Creswell (2007), qualitative research designs are not rigid and can evolve according to the course of the study. This flexibility allows researchers to adjust to unforeseen results and enhance their investigations.

To conclude, the ontological and epistemological bases of qualitative research are defined by a relativistic perspective of truth, acknowledgment of subjectivity, and

a focus on interaction and context. These bases provide a suitable structure for examining intricate and multifaceted subjects like corporate sustainability, which is influenced by intertwined social and organizational realities and stakeholder perceptions.

### **3.2 Qualitative Design and Its Alignment with the Study**

In this study, a qualitative design is used to develop a holistic evaluation model for corporate sustainability performance. As Merriam (2009) explains, the philosophical roots of qualitative research lie in constructivism, phenomenology, and symbolic interactionism. Accordingly, it focuses on how people interpret their experiences, construct their realities, and attribute meanings to those experiences. Also, Merriam (2009) states that the main objective of qualitative research is to deeply explore how individuals make sense of their lives from their own perspectives. This approach enables the researcher to draw on the strengths of various methods while maintaining flexibility throughout the research process.

The purpose and context of this study align well with a qualitative design. The researcher proposes a model integrating the Triple Bottom Line (TBL) and Environmental, Social, and Governance (ESG) frameworks. Understanding how this model is perceived, its applicability, and the challenges encountered in practice requires insights derived from stakeholder experiences rather than numerical indicators. For instance, understanding how a sustainability manager interprets and applies an integrated TBL-ESG model in their institutional practice, the benefits they perceive, and the difficulties they face can only be achieved through rich qualitative data. Such questions demand participants' narratives, subjective evaluations, and lived experiences. The general qualitative design directly serves the purpose of understanding a phenomenon from multiple stakeholder perspectives. Emphasizing the originality of the research, the study aims to adapt the theoretical model to field realities. To achieve this, it is necessary to explore how field actors make sense of the concepts and relationships within the model. A quantitative design would not yield this depth of understanding; while surveys might reveal surface-level trends, they would struggle to capture contextual factors and interpretive nuances. In contrast, qualitative approaches allow participants to articulate the situation in their own words, enabling the researcher to derive themes and concepts from these accounts.

Given the multidimensional nature of corporate sustainability performance—covering environmental, social, governance, and economic aspects—it is essential to go beyond numbers and examine how these dimensions are balanced in practice, what priorities guide decision-makers, and what conflicts arise. The qualitative design allows for the examination of such complex performance assessments without artificial constraints, through the narratives of the actors involved. Furthermore, the exploratory nature of the research questions requires progress without being bound to rigid categories or predefined theories. This study aims to validate and refine the theoretical framework formed by the TBL and ESG combination through field insights. Although a completely new theory is not developed, an inductive analysis process will be followed to investigate the practical application of the existing framework. As is common in general qualitative designs, the data will be analyzed using thematic or content analysis, and the researcher will derive codes and themes from the raw data to examine how theoretical concepts are reflected in practice. Similarly, in this study, qualitative data obtained through semi-structured interviews will be analyzed using inductive content analysis and compared with the TBL+ESG theoretical framework. This process will help identify which elements of the model are well-received in practice, where challenges are encountered, and which parts remain underdeveloped.

In addition to theoretical justifications, practical considerations also support this design choice. The institutional settings and participants involved in the study (e.g., corporate managers, sustainability experts) likely come from diverse sectors and organizational cultures. In light of this diversity, the study aims to derive common themes from varied experiences rather than focus on a single case. The general qualitative design facilitates the integration of data from multiple sources (e.g., different companies or stakeholders) and helps build a comprehensive model. As a result, it provides a broader understanding of how the proposed holistic evaluation model is perceived across contexts. In summary, the research questions align both theoretically and practically with the qualitative design.

In the literature, there are also studies emphasizing the necessity of qualitative approaches for similar topics. For instance, Barbosa et al. (2023), through a comprehensive literature review, noted that most studies examining the effects of ESG criteria on corporate sustainability performance rely on quantitative methods (e.g., firm-level data and regression analyses). Highlighting the lack of qualitative

perspectives—such as the views of employees—they emphasized the need for new studies in this area. Indeed, the literature on sustainability performance is saturated with numerical indicators and indexes; however, the human and organizational processes underlying these metrics remain insufficiently understood. High-impact academic publications also underline the importance of qualitative insights in advancing sustainability performance. For example, cultural factors or stakeholder relationship issues that underlie weak ESG performance in an organization cannot be fully understood by merely looking at financial ratios. Therefore, the use of a qualitative design in this study holds the potential to make a unique contribution by addressing this identified gap in the literature.

### 3.3 Evaluating Alternative Qualitative Designs

Although there are various designs within the qualitative research tradition, each has its distinct purposes and appropriate contexts for use. In this study, as previously justified, the qualitative design was selected because it best aligned with the research questions and objectives. Below, common qualitative designs are briefly defined, along with the rationale for why they were not deemed suitable for this particular research:

- **Phenomenology:** Phenomenological research aims to uncover how a specific phenomenon is experienced by individuals and to identify the essence of that experience. For example, a phenomenological study might explore the question, “What is the essence of how employees experience a sustainability initiative in the workplace?” and would seek to extract shared meanings through in-depth interviews. As such, phenomenology often focuses on universal essences of lived experiences and subjective perceptions (Moustakas, 1994). However, this study is not concerned with the individual essence of a single phenomenon but rather with the development and application of a holistic model. The objective is to understand how a corporate sustainability performance framework is received in the field—an issue that involves the collective feedback of various stakeholders rather than the deeply personal experience of one. Therefore, phenomenology does not provide a suitable path for addressing the research questions. If this were a phenomenological study, the researcher would aim to uncover the emotional or spiritual core of each stakeholder’s experience—an aim that does not align with the researcher’s practical goal of model development.

- **Ethnography:** Ethnographic research focuses on studying the culture, norms, and meaning systems of a cultural group or community through long-term observation and immersive fieldwork. In ethnography, the researcher enters the “field” and engages with the group over time to observe interactions, rituals, and behaviors in detail (Hammersley and Atkinson, 1995). However, this study on corporate sustainability performance is not intended to decode the cultural codes of a single company or community. Although organizational culture undoubtedly influences sustainability practices, the scale of this study does not call for a deep cultural analysis (i.e., corporate ethnography) of one organization. Instead, the researcher aims to collect data from various institutions or experts to identify general trends and shared themes. Conducting ethnographic research would require the researcher to remain in the field for extended periods, which is neither practical nor necessary for developing a holistic model. The research questions are focused on synthesizing shared perceptions across institutions, rather than uncovering the deep cultural dynamics of a specific group. Hence, ethnography is not an appropriate choice.
- **Case Study:** A case study design involves the in-depth examination of a bounded system or phenomenon (e.g., a single case or a small number of cases). According to Yin (2018), case studies seek to understand contemporary phenomena within real-life contexts through detailed analysis of defined systems. This method typically concentrates on a single organization, community, or project and aims to reveal its internal dynamics and causal relationships. In contrast, this study does not aim to explore one company or institution as a case, nor to discuss all findings within that particular context. Rather, to increase the model’s general applicability and relevance, it is designed to draw on data from multiple sectors or institutions. If a case study design were employed, for instance, the research would focus solely on how Company X implements the TBL+ESG model. As a result, the developed model would likely be context-specific and less generalizable. The general qualitative approach, by contrast, allows for the integration of knowledge from multiple contexts and enables the proposal of a more universal model. Therefore, despite the advantages of in-depth case analysis, a case study design was not considered necessary for this research, which instead prioritizes thematic breadth and cross-contextual insight.

- **Grounded Theory:** Grounded theory is a methodology used to develop new theories in the social sciences. Researchers using grounded theory collect data on phenomena that are either theoretically underexplored or unexplained, and then construct theories from the ground up based on this data. In classic grounded theory (Glaser & Strauss, 1967), data collection and analysis are intertwined, and concepts are derived through coding, leading to categories and ultimately to a theoretical proposition. The goal is to create a theory grounded entirely in data, avoiding predefined theoretical frameworks as much as possible. However, this study begins with an established theoretical framework—namely, the integration of TBL and ESG. The objective is not to discover a theory from scratch, but rather to build an applied model by combining existing conceptual foundations. This represents a key difference from grounded theory, which emphasizes minimal prior theoretical knowledge and continuous data collection until theoretical saturation is achieved. For the purposes of this study, grounded theory would have been excessively rigorous and ill-suited. Instead, a more descriptive and exploratory qualitative design was selected, allowing the researcher to test and refine an existing framework in practical settings. Nonetheless, the researcher acknowledges that certain grounded theory techniques (e.g., open coding, category development) may still inform her analysis, even though the methodology as a whole is not adopted.
- **Narrative Research:** Narrative research focuses on gathering and analyzing individuals' life stories and experiences in chronological order. The main aim is to understand how participants construct meaning through stories about their lives and the world around them. Narrative analysis typically centers on the life history of one or a few individuals, using rich, detailed descriptions of their personal experiences within specific periods or events (Clandinin and Connelly, 2000). For example, a narrative study might explore how a CEO personally experienced a sustainability transformation within their company, weaving together values from childhood, career milestones, and leadership reflections into a cohesive story. In contrast, this study focuses not on personal life stories, but on the collective evaluation of a sustainability performance model at the institutional level by multiple actors. While participants will indeed share examples from their experiences during interviews, the goal is not to analyze these as personal

narratives but to synthesize them into common themes. Hence, rather than adopting the individual-centered nature of narrative research, this study uses a theme-centered qualitative analysis. If the researcher had used a narrative design, she might have focused on the career stories of a few managers and their personal understandings of sustainability. However, this would have diluted the focus on model development and reduced the analysis to individual accounts. Instead, the researcher aims to construct a broader institutional picture based on participants' narratives.

Each of the qualitative designs mentioned above serves as an ideal tool for specific research questions and contexts. The decision not to adopt these designs stems from their methodological misalignment with this research's objectives. Phenomenology, ethnography, case study, grounded theory, and narrative research each focus on narrow phenomena, deep cultural immersion, single-case analysis, or personal life stories. In contrast, this research's questions require a mid-level abstraction: synthesizing diverse experiences through a theoretical model to generate broadly applicable insights. The qualitative design serves precisely this purpose. It allows for methodological flexibility, the integration of multiple techniques, and a balanced use of both deductive and inductive reasoning. As Merriam (2009) suggests, this enables the researcher to remain focused on the research questions throughout the study and increases the likelihood that the resulting model will be compatible with field realities.

### **3.4 Method of the Study**

In this study, methodological choices have been carefully justified in line with both theoretical expectations and practical field requirements. The qualitative research approach, with its inherent ontological and epistemological assumptions, provides a suitable foundation for understanding complex, human-centered phenomena such as corporate sustainability. The qualitative design was selected for its scope and flexibility, which align closely with the study's aims. This choice is also supported by discussions in the methodology literature and findings from similar studies. Although alternative qualitative designs were considered and evaluated, they were not employed due to their lack of alignment with the research questions. As a result, the chosen methodology enables a deep understanding of how the theoretical model that integrates

TBL and ESG frameworks is reflected in practical settings. The findings generated through this approach are expected to offer both new theoretical insights and practical recommendations for organizations. By grounding the theoretical model in insights derived from expert interviews and allowing for its refinement based on empirical perspectives, the methodology supports the study's overarching goal: bridging the gap between theory and practice. Therefore, the qualitative research roadmap followed in this study reinforces the coherence and scientific contribution of the work. The results are anticipated to help fill existing gaps in the literature and contribute meaningfully to a better understanding of corporate sustainability performance.

**3.4.1 Sampling process and participants.** In this study, a purposive sampling method was employed to form a study group consisting of experts experienced in the fields of corporate sustainability and performance evaluation. Purposive sampling enables the selection of information-rich cases that are most capable of providing in-depth answers to the research questions. As Patton (2002) suggests, small but strategically selected samples allow for a deeper understanding of phenomena that are of central importance to the research. Based on this approach, the principle of maximum variation was observed in selecting participants relevant to the phenomenon under investigation. In the literature, maximum variation sampling involves including as many diverse and heterogeneous cases as possible that are related to the research problem, thereby enabling the identification of common patterns and core themes across different contexts rather than producing statistical generalizations. Accordingly, participants in this study were selected from a range of sectors, areas of expertise, and institutional backgrounds. As commonly recommended in social research, diversity in sampling was ensured by considering participants' professions, career trajectories, institutional affiliations, and levels of public visibility. Participants represented a variety of sectors (e.g., finance, manufacturing, services), roles (e.g., sustainability managers, academics, consultants), and organizational positions or levels of experience. This diversity provided a broad range of perspectives and experiences, facilitating a multidimensional understanding of the phenomenon. A summary of the 9 respondents' key characteristics and backgrounds is presented in Tablo 3.

Table 3

*Respondants' Key Characteristics*

| Respondants | Gender | Age | Education     | Experience in Sustainability |
|-------------|--------|-----|---------------|------------------------------|
| S.S.        | Female | 66  | Graduate      | 20 years                     |
| T.A.        | Male   | 59  | PhD           | 37 years                     |
| B.B.        | Female | 43  | Undergraduate | 18 years                     |
| B.T.        | Female | 48  | Graduate      | 22 years                     |
| İ.P.        | Male   | 45  | Graduate      | 4 years                      |
| M.T.        | Female | 41  | Undergraduate | 5 years                      |
| E.T.        | Female | 42  | Undergraduate | 6 years                      |
| N.Ç.        | Female | 40  | Undergraduate | 11 years                     |
| Ö.B.        | Female | 46  | Graduate      | 23 years                     |

**3.4.2 Data collection process.** In this study, the data were collected by semi-structured interviews. These interviews were conducted via online video conferencing between April and May 2025. Each interview lasted approximately 45 minutes and was audio-recorded with the participants' consent. Before the interviews, an interview guide was developed based on the literature review and was improved by the feedback from the experts. As Kvale and Brinkmann (2009) states, in order to conduct a successful qualitative interview, it is important to have an interview guide that reflects the purpose of the study and defines the scope of the questions. Based on this view, open-ended questions aligned with the research aims were prepared, resulting in a clear and comprehensive question set. A flexible approach was adopted during the interviews. Basically the guide was followed during the interviews, but additional probing questions were also asked to explore topics highlighted by the participants in greater depth. Kvale and Brinkmann (2009) emphasizes that the qualitative interviews provide participants the opportunity to express their experiences, views, and concerns in their own words. In this situation, all participants were able to articulate their perspectives on corporate sustainability performance in detail. Next, the audio recordings were transcribed verbatim by the researcher. These transcripts were read multiple times in preparation for analysis, and participant statements were revised or verified as needed. Ethical principles such as obtaining informed consent, ensuring

confidentiality, and protecting privacy were strictly adhered to throughout the data collection process (Orb et al., 2001). The question set and prompts used during the interviews is presented in Table 4.

Table 4

*In-Depth Interview Questions*

| #  | Question                                                                                                                                                                                                   |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | Could you briefly introduce yourself? In which field do you work, and what kind of experiences have you had regarding sustainability?                                                                      |
| 2  | What does corporate sustainability mean to you?                                                                                                                                                            |
| 3  | Why do you think measuring sustainability performance is important, and for whom is it important?                                                                                                          |
| 4  | In your opinion, what main dimensions should necessarily be included when evaluating a company's sustainability performance? If you were to classify them into three main categories, how would you do so? |
| 5  | What measurable indicators could correspond to each of these main dimensions?                                                                                                                              |
| 6  | Based on your experience, are these indicators typically collected and reported by organizations?                                                                                                          |
| 7  | Should a corporate sustainability performance evaluation model be the same across all sectors, or should it be tailored to each sector?                                                                    |
| 8  | What should be considered to ensure that this model is applicable not only to large-scale companies but also to SMEs?                                                                                      |
| 9  | Based on your experience, in which areas do organizations typically measure sustainability performance?                                                                                                    |
| 10 | What are the most common challenges faced in evaluating sustainability performance?                                                                                                                        |
| 11 | How can evaluation models serve as incentives to improve corporate sustainability performance?                                                                                                             |
| 12 | In your view, what kind of structure should a good sustainability performance evaluation model have?                                                                                                       |
| 13 | What methods would be effective in enhancing the usability of such a model?                                                                                                                                |
| 14 | So far, what elements do you think are missing in existing evaluation models, or what components do you believe must be included?                                                                          |

**3.4.3 Data analysis technique.** The qualitative data collected in this study were analyzed using a thematic analysis approach. Thematic analysis is a method that allows

for the systematic identification of meaning patterns within data and facilitates an in-depth interpretation of the dataset. According to Braun and Clarke (2006), thematic analysis is “a method for identifying, analyzing, and reporting patterns (themes) within data,” and it offers the opportunity to interpret various dimensions of the research topic. The analysis was conducted with the support of MAXQDA 2024, a qualitative data analysis software. After the interview transcripts were imported into MAXQDA, the processes of systematic coding, exploring relationships among codes, and constructing themes were carried out using the software. Silver (2024) highlights that qualitative data analysis tools provide powerful means to facilitate thematic analysis. Indeed, the coding and visualization features of MAXQDA enhanced the researcher’s engagement with the data and accelerated the process of uncovering meaningful themes.

**3.4.3.1 Steps of thematic analysis.** Based on the framework proposed by Braun and Clarke (2006), the thematic analysis in this study followed the steps outlined below:

1. **Familiarization with the data:** All transcripts were read repeatedly and annotated to ensure familiarity with the data. The researcher made notes on the key points and initial impressions from each interview to develop a general understanding of the dataset (also known as the data immersion stage).
2. **Generating initial codes:** The data were examined systematically, and meaningful units of information were assigned codes. The researcher proceeded line by line, creating labels (codes) to represent similar statements by using the MAXQDA software. In order to allow for the emergence of new categories not anticipated in advance, an open coding approach was adopted.
3. **Reviewing and refining codes:** The initial list of codes was examined in order to group codes that were alike or connected, and then combined or arranged in a hierarchy as required. The researcher continuously improved the coding scheme to make sure it was thorough but also easy to manage and in line with the goals of the study. MAXQDA’s Creative Coding tool was also used during this phase to visually arrange hierarchical relationships between codes.

4. **Searching for themes:** In order to identify potential themes that represented recurring patterns of significance in the dataset, clusters of refined codes were examined. The fundamental concepts of each group were interpreted, and temporary names were given to the themes. For instance, a possible theme like "Challenges in Evaluating Performance" could have been identified at this point. Later on, based on the number of associated codes and their significance in capturing key aspects of the data, the relevance and representativeness of each theme were assessed.
5. **Reviewing and defining themes:** In order to ensure their validity, the potential themes were cross-checked against the full dataset. Evaluating overlaps between themes, the presence of sub-themes, and any inconsistencies occurred at this stage. As necessary, themes were merged, refined, or narrowed. Supporting excerpts from the data were reviewed to verify whether they aligned with the intended meaning of each theme. Final definitions were developed for each theme, along with lists of representative codes.
6. **Writing the report:** Finally, the findings were organized around the identified themes and subthemes. Each theme was named in a way that best captured its meaning, and relevant findings were reported under each theme, supported by direct quotations from participants. This stage corresponded to the drafting of the findings section of the research.

In line with the steps outlined above, the data were analyzed inductively—that is, the themes were derived directly from participants' statements. Although the researcher conducted the coding and theme development independently, several analytical tools provided by the MAXQDA software were utilized to support the process. For instance, the Code Matrix Browser was used to examine the distribution of codes across participants, allowing the researcher to visualize the extent to which each participant contributed to specific codes. Similarly, the Code Relations Browser was employed to analyze the frequency with which different codes co-occurred within the same data segments (co-coding), thereby revealing tendencies for certain concepts to emerge together. These visual tools supported the researcher in identifying relationships between themes and uncovering latent patterns within the data.

In order to enhance the reliability of the analysis, peer debriefing was conducted. The coding process and the resulting themes were reviewed by two independent experts with experience in qualitative research. These experts provided feedback on the appropriateness of the theme labels, the alignment between codes and themes, and the consistency of the researcher's interpretations. Based on this feedback, minor revisions were made, and the themes were finalized. Additionally, to protect participant confidentiality, no real names of individuals or institutions were used when reporting the codes and themes; all data were anonymized (Orb et al., 2001). A summary of the resulting code system and themes is presented under the section titled

Table 5

*Code System and Frequencies*

| <b>Code System</b>              | <b>Frequency</b> |
|---------------------------------|------------------|
| Code System                     | 289              |
| Performance Indicators          | 0                |
| Economic                        | 2                |
| Profitability                   | 3                |
| Cost Effectiveness              | 0                |
| ROI                             | 0                |
| Operational efficiency          | 0                |
| Environmental                   | 8                |
| Emissions                       | 9                |
| Energy                          | 5                |
| Water                           | 9                |
| Waste                           | 8                |
| Natural resources               | 4                |
| Biodiversity                    | 2                |
| Social                          | 9                |
| Employee welfare                | 7                |
| Turnover                        | 3                |
| Training and education          | 5                |
| Health and safety               | 4                |
| Gender equality                 | 8                |
| Contribution to society         | 7                |
| Governance                      | 8                |
| Board structure                 | 1                |
| Ethic                           | 4                |
| Communication                   | 1                |
| Transparency and accountability | 4                |
| Stakeholder management          | 5                |
| KPIs                            | 6                |
| Compliance                      | 4                |

Table 4 (Cont'd)

| <b>Code System</b>                    | <b>Frequency</b> |
|---------------------------------------|------------------|
| Innovation                            | 1                |
| Performance Measurement               | 0                |
| Importance                            | 0                |
| Strategic decision making             | 6                |
| Improvement opportunities             | 5                |
| Risk management                       | 6                |
| Sectoral competition                  | 1                |
| Brand value and reputation            | 5                |
| Attracting investment                 | 2                |
| Corporate continuity                  | 3                |
| Target group                          | 0                |
| Top management                        | 4                |
| Employees                             | 6                |
| Investors                             | 6                |
| Shareholders                          | 3                |
| Customers                             | 4                |
| Regulators                            | 5                |
| Society and NGOs                      | 2                |
| Measurement Difficulties              | 0                |
| Data gathering                        | 7                |
| Lack of digital tools                 | 6                |
| Investment need                       | 4                |
| Complexity of indicators              | 8                |
| Top management support                | 5                |
| Resistance to change                  | 4                |
| Application differences               | 5                |
| Lack of knowledge and communication   | 5                |
| Measurement Model Suggestions         | 0                |
| Incentive and implementation elements | 0                |
| Financial incentives                  | 4                |
| Regulations                           | 4                |
| KPI systems                           | 5                |
| Investor demand                       | 1                |
| Voluntariness and obligation          | 2                |
| Model Structure                       | 0                |
| Layered structure                     | 4                |
| Single common structure               | 7                |
| Sectoral structure                    | 10               |
| Flexible and modular structure        | 9                |
| Model features                        | 0                |
| Scoring system                        | 6                |
| Digital integration                   | 6                |
| Benchmarking elements                 | 2                |

**3.3.4 Validity and reliability.** In qualitative research, the reliability of findings is one of the most critical criteria of scientific inquiry. In this context, the concepts of validity and reliability are widely used to assess the quality of scientific methods. While in quantitative research, the validity and reliability of data collection tools and methods are rigorously tested and reported, the treatment of these concepts in qualitative research differs (Başkale, 2016). Various strategies commonly employed to ensure reliability in qualitative research were utilized in this study. Guba and Lincoln (1982) emphasized the concept of “trustworthiness” instead of validity and reliability in evaluating qualitative studies, and accordingly, proposed four fundamental criteria. These criteria have become widely accepted as a standard in the literature. They are classified under the headings of credibility, dependability, confirmability, and transferability (Guba & Lincoln, 1982). Throughout the study, the analysis process was guided by these four main criteria.

In this study, the interviews were examined through an unbiased lens and evaluated based on the consensus of three researchers with expertise in the relevant field to ensure the validity and reliability of data analysis. The researcher carried out the analysis process in following to the principles of impartiality, transparency, and fairness. Moreover, the reliability formula developed by Miles and Huberman (1994) was applied during the process. This formula is expressed as “[Reliability = (Agreement / (Agreement + Disagreement)) x 100],” and a result close to or above 90% is considered reliable (Şahin & Kaya, 2019). Based on this formula, the inter-rater agreement between the two researchers was calculated as 91%, which supports the reliability of the analysis process.

**3.3.5 Reflexivity.** In qualitative research, being reflexive means staying aware of how one’s own background, beliefs, and position might shape the research at different stages. Rather than aiming for complete objectivity, it involves acknowledging the researcher's role in shaping how data is collected, interpreted, and presented (Finlay, 2002; Berger, 2015). This study, which looked into corporate sustainability performance through semi-structured, in-depth interviews, was carried out using an interpretivist approach. In this framework, the researcher is not a distant observer, but part of the meaning-making process alongside participants.

As the principal investigator, the researcher brought to the research both theoretical knowledge and nearly a decade of professional experience in sustainability-

related fields. The researcher's prior involvement in sustainability consulting shaped her initial understanding of the research topic. While this background enriched her capacity to interpret participants' insights and engage with complex terminologies, it also posed the risk of introducing preconceived assumptions. Acknowledging this, reflexive measures were taken to mitigate potential bias throughout the study.

The way the interview questions were developed reflects this reflexive awareness. While the questions were mainly shaped by a thorough review of relevant academic literature, the final form also inevitably carried traces of how the researcher personally understands and approaches sustainability. To address this, special attention was given to keeping the questions open-ended and flexible. This allowed participants to express their own perspectives, values, and concerns, rather than being steered toward confirming any particular assumption. In doing so, the researcher's influence was intentionally reduced, and participants' voices remained central to the data.

All interviews were conducted in Turkish, which was the native language of every participant. The questions were also written in Turkish to ensure clarity and make the process more comfortable for those involved. Since sustainability is often discussed across multiple fields and sectors, care was taken to use language that was simple and widely understood. This helped create a more inclusive environment, where people from different professional backgrounds could participate on equal footing. Whenever a term seemed unclear or too technical, it was explained during the interview to avoid confusion and ensure a shared understanding.

Throughout data collection, the researcher maintained a reflexive journal to document evolving thoughts, potential biases, and notable interview dynamics. This journal was instrumental in making transparent how the researcher's own interpretations developed and shifted in response to participants' inputs. It also enabled a recursive analytical process in which early coding decisions could be critically revisited and refined.

Moreover, power dynamics between researcher and participant were actively considered. The researcher's expertise in the field may have influenced participants' desire to present best practices or align with prevailing narratives. To mitigate this, interviews were framed as collaborative exchanges, emphasizing that there were no "correct" answers and that all perspectives were valid. A non-directive tone and attentive listening were maintained to create a psychologically safe space for participants to share candidly.

To further enhance the credibility of the analysis, the coding process was peer-reviewed by two independent experts in qualitative research. Their input helped to cross-check interpretive decisions and identify any areas where the researcher's perspective may have inadvertently constrained the thematic scope. This triangulation contributed to analytical depth and increased the trustworthiness of the findings.

Ultimately, this reflexive stance served not only to enhance the methodological integrity of the study, but also to reinforce ethical responsibility. By remaining critically self-aware and open to the multiplicity of meanings expressed by participants, the research process was oriented toward interpretive depth without compromising analytical rigor.



## Chapter 4

### Findings

In this section, the main findings of the study, which were derived from in-depth interviews and systematically analyzed using MAXQDA, are presented. Based on key themes that arose from responses given by participants about the evaluation of corporate sustainability performance, the findings are organized. In order to support the analysis, data visualizations such as code maps, word clouds, and frequency charts have been used.

#### 4.1 Core Understanding of Sustainability and Thematic Prioritization

Firstly, a word cloud was created using MAXQDA to identify the key concepts in the interview data. This visualization shows how often and how prominently certain keywords were mentioned by the participants, giving a general picture of the main themes found in the qualitative data.

As shown in the Figure 1, the term "sürdürülebilirlik" (sustainability) is prominently featured, indicating the primary emphasis of the research. Aligning with the ESG (Environmental, Social, Governance) framework, the related terms like "çevresel" (environmental), "sosyal" (social), and "yönetişim" (governance) further emphasize the three-leg structure frequently used in sustainability evaluations.

The use of terms like "raporlama" (reporting), "kpi", "performans" (performance), and "veri" (data) in the text implies that participants highlighted the significance of measurable indicators and organized reporting systems in evaluating sustainability performance. Similarly, the frequent use of terms like "kurumsal" (corporate), "çalışan" (employee), "tedarikçi" (supplier), and "yatırım" (investment) in participants' responses suggests a strong emphasis on organizational structure and strategic planning.

It is also clear that environmental sustainability remains a key concern when the inclusion of specific environmental concerns like "iklim" (climate), "karbon" (carbon), "su" (water), and "atık" (waste) are interpreted. Meanwhile, terms such as "kadın" (woman), "eşit" (equal), "toplumsal" (societal) are considered by participants to be essential components of sustainable development when it comes to social equity.

Other significant terms like “sektörel” (sectoral), “KOBİ” (SMEs), and “kamu” (public), indicate discussions around the need for sector-specific and scalable sustainability models. Lastly, expressions like “teşvik” (incentive), “farkındalık” (awareness), and “eğitim” (education) point to enabling factors and challenges in implementation.

Overall, the word cloud shows that corporate sustainability performance is viewed as a complex, multi-dimensional concept that involves combining elements from strategic, operational, and societal areas.



Figure 1. Word cloud of the research

## 4.2 Dimensions of Corporate Sustainability Performance Measurement Model

The visual representation in Figure 2 presents a conceptual framework derived from qualitative data analysis, illustrating the primary components and thematic clusters constituting the proposed Corporate Sustainability Performance Model. The model is organized into three main branches: Performance Indicators, Performance Measurement, and Measurement Model Suggestions, each encompassing a set of interconnected subthemes.

Under the Performance Indicators category, the model incorporates four key dimensions: Economic, Environmental, Social, and Governance. This structure aligns with the ESG framework and reflects the comprehensive, multi-dimensional nature of

corporate sustainability, as emphasized by participants. These dimensions represent the foundational areas where sustainability outcomes are expected to be observed and assessed.

The Performance Measurement branch addresses operational aspects of sustainability evaluation, including the Importance of measurement practices, identification of the Target Group for whom the evaluation is relevant, and the Measurement Difficulties encountered in practice. These subthemes highlight concerns about data availability, standardization challenges, and the need for clarity in defining responsibility across organizational levels.

The third major branch, Measurement Model Suggestions, outlines recommendations and structural elements for improving sustainability evaluation practices. This includes Incentive and Implementation Elements (such as policy tools and organizational enablers), Model Structure (referring to the architecture of the proposed evaluation model), and Model Features (such as adaptability, simplicity, and sectoral relevance).

Overall, this thematic map reflects a holistic and practitioner-informed approach to sustainability performance assessment. It integrates normative dimensions (what should be measured), practical challenges (how it can be measured), and strategic design considerations (how the model should function across diverse organizational contexts).

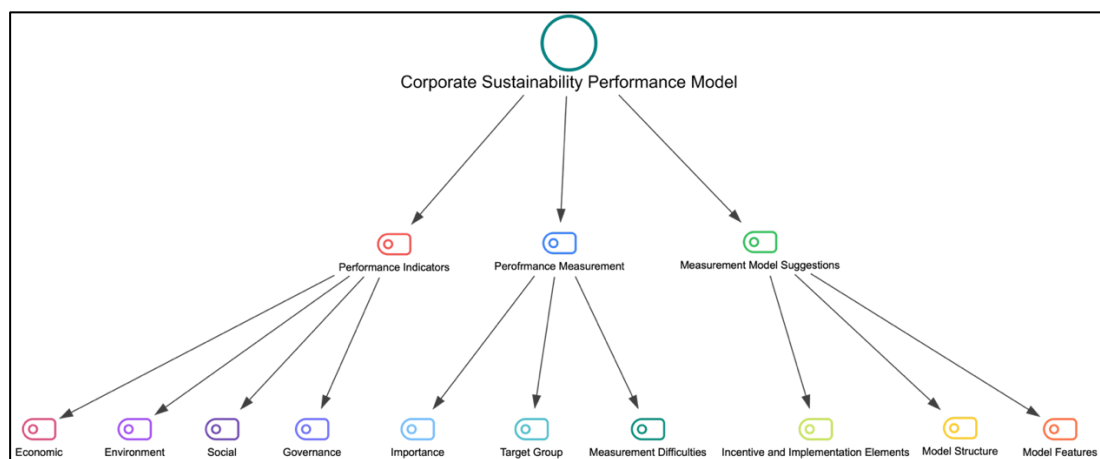


*Figure 2. Code – sub code hierarchy of the research*

The Figure 3 presents a Code Matrix Browser output from MAXQDA, demonstrating the distribution of coded segments across individual interview participants. This matrix provides insights into the prevalence and variability of key

themes in the proposed Corporate Sustainability Performance Model, highlighting both the consistency and diversity of perspectives among stakeholders.

The thematic cluster "Performance Indicators" is particularly prominent, with subdimensions such as Environmental (45 coded segments), Social (43), Governance (34), and Economic (5) receiving substantial attention. This reflects a balanced yet strong emphasis on the ESG framework across participants. Notably, social and environmental indicators appear slightly more frequently, suggesting a heightened awareness or perceived urgency around these domains.

Under "Performance Measurement," the subtheme Measurement Difficulties (44) stands out, indicating that challenges related to data collection, indicator clarity, and methodological issues are widely acknowledged. This points to a critical area that requires further methodological development in sustainability performance evaluations. Other aspects like Importance (28) and Target Group (30) also receive consistent mentions, signifying their perceived relevance in operationalizing sustainability models.

The third cluster, "Measurement Model Suggestions," also reveals key discussion areas. The Model Structure (30) garnered significant attention, suggesting that participants valued having a coherent and adaptable model framework. Incentive and Implementation Elements (16) and Model Features (14), though slightly less emphasized, still underscoring a strong interest in how sustainability models can be practically integrated into organizational contexts.

From a participant-based perspective, the distribution is relatively even, with all individuals contributing to multiple thematic categories. Some participants, such as B.B. and B.T., showed particularly high engagement with specific subthemes (e.g., "Measurement Difficulties" and "Social" indicators), which may reflect either their professional orientation or organizational exposure to sustainability challenges.

In sum, the matrix reveals that while there is broad agreement on the core dimensions of sustainability performance, there is also a strong call for clarity in implementation strategies, indicator feasibility, and model structure design.

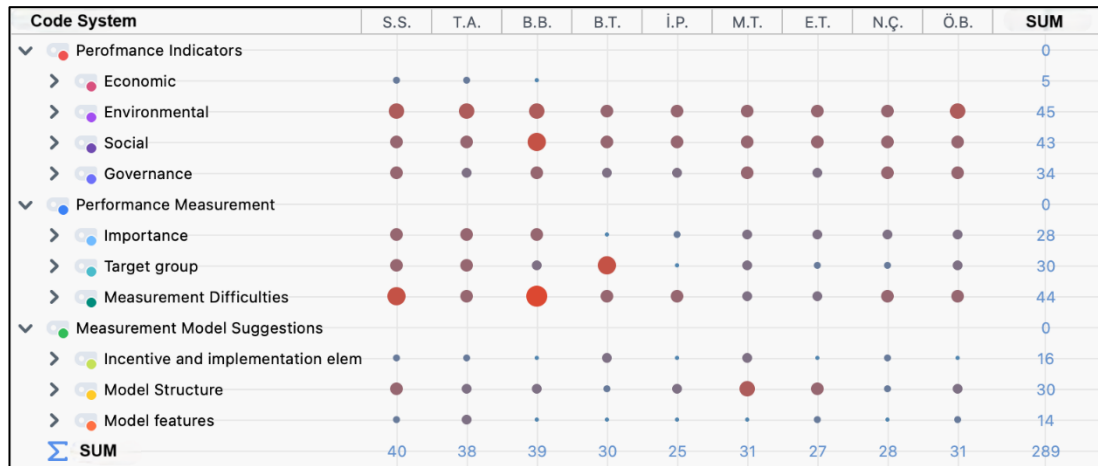


Figure 3. Code matrix

### 4.3 Performance Measurement

The visualized network diagram in Figure 2 illustrates a participant-informed thematic structure of the Corporate Sustainability Performance Model, based on coded qualitative interview data. Each branch and sub-branch in the diagram represents themes and subthemes that emerged directly from participants' responses, reflecting the collective understanding and prioritization of sustainability-related concepts.

At the center of the map lies the core model concept, from which multiple first-order thematic categories radiate. These categories correspond to three main thematic pillars previously identified in the coding framework: Performance Indicators, Performance Measurement, and Measurement Model Suggestions. The presence and density of branches connected to each thematic node indicate the frequency and variety of participant contributions related to those areas.

Key observations from the network include:

**Strong emphasis on ESG indicators:** A substantial number of participant-driven branches are clustered around the subthemes of Environmental, Social, and Governance indicators. This underscores that interviewees consistently emphasized the need to assess sustainability in a multi-dimensional manner. Particularly dense branching around environmental and social indicators suggests that these domains were especially salient for participants.

**Recognition of practical challenges:** Several participant-derived nodes stem from the Measurement Difficulties and Target Group themes, highlighting concerns around feasibility, applicability, and inclusiveness in sustainability assessment.

Participants frequently noted obstacles such as data availability, sectoral variation, and lack of institutional support.

**Forward-looking recommendations:** A separate cluster of themes relates to Measurement Model Suggestions, including Incentive and Implementation Elements and Model Features. These branches reveal that participants did not merely critique existing practices but also offered practical design suggestions. Themes such as simplicity, adaptability, and sector-specific tailoring appear repeatedly, suggesting a shared desire for actionable and accessible tools.

This participant-driven thematic mapping not only confirms the multi-faceted nature of sustainability performance but also demonstrates that stakeholders across diverse backgrounds share converging views on what an effective model should include. The network visualization thus serves both as an analytical summary and a co-constructed conceptual foundation for the proposed model.

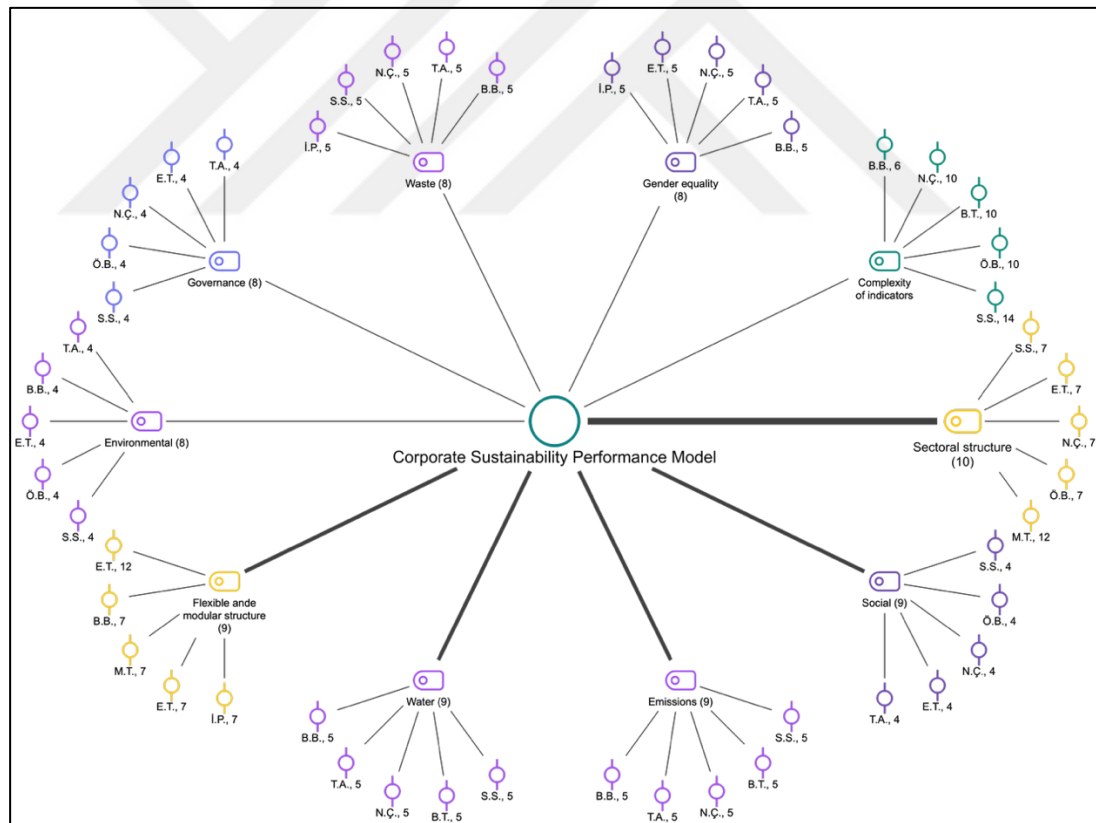


Figure 4. Code frequencies of the model

**4.3.1 Importance of the corporate sustainability measurement.** The bar chart in Figure 5 illustrates the perceived reasons for measuring corporate sustainability

performance, as derived from participants' responses. Each category represents a thematic rationale coded during qualitative data analysis, with corresponding frequency and percentage values.

The most frequently cited reasons were Strategic Decision Making and Risk Management (each cited by 21% of participants, n=6). This suggests that sustainability metrics are viewed not only as compliance or communication tools but as integral to long-term strategic planning and resilience-building within organizations.

Improvement Opportunities and Brand Value and Reputation followed closely (18%, n=5 each), reflecting an understanding of sustainability as a driver of internal development and external credibility. These themes highlight how measurement enables both self-assessment and stakeholder trust, enhancing a firm's competitive advantage.

Corporate Continuity (11%, n=3) also emerged as a significant motivation, indicating that sustainability performance is seen as closely linked with business longevity and operational stability. This aligns with broader views of sustainability as a foundation for future-proofing organizations.

Less frequently mentioned but still relevant were Attracting Investment (7%, n=2) and Sectoral Competition (4%, n=1), indicating a growing but less dominant recognition of sustainability's role in enhancing financial attractiveness and positioning within industry benchmarks.

Overall, the distribution suggests that participants regard sustainability measurement as multifunctional—serving strategic, reputational, operational, and financial objectives. The prominence of strategic and risk-related motives implies a shift from symbolic adoption toward instrumental integration of sustainability in core decision-making processes.

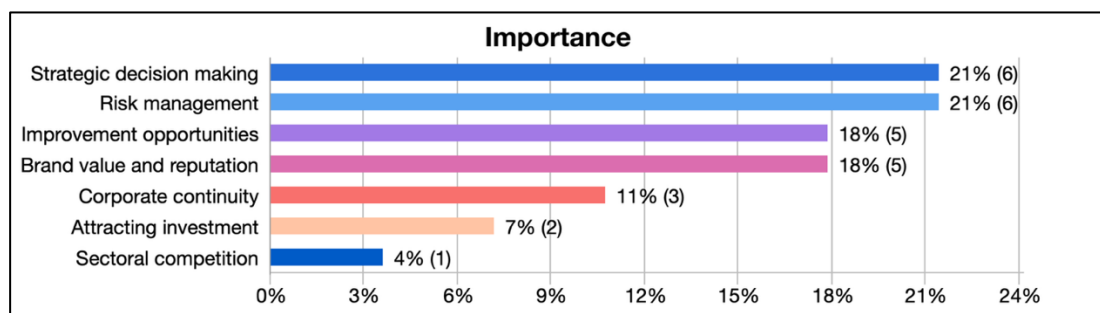


Figure 5. Sub-code statistics of importance

Some of the participants' responses to the question "Why is corporate sustainability performance evaluation important?" are presented below:

- S.S.: *"When we look at it this way, measuring sustainability, the transformation of sustainability—that is, evaluating how the institution's entire reporting and strategy contribute to planetary and societal welfare beyond just profit and loss—is extremely important."*
- T.A.: *"Therefore, it is actually important for all companies, from the largest to the smallest, in terms of strategic performance."*
- İ.P.: *"You can't manage what you can't measure. Where am I—in terms of carbon footprint, for example? How much am I polluting the environment, nature, the air? I need to see where I stand so that I can set targets. For example, I have teams under me in all the factories. I need to give each of them targets, but to set targets, I need to measure something. When you look at it, where am I in this ecosystem, and where do I want to go?"*
- B.B.: *"Investors want to understand whether the institution they'll invest in or finance will also be aligned with this ongoing transition to sustainability and a low-carbon economy in the coming years."*
- T.A.: *"Some developments in the industry also push companies in this direction. Because if one company introduces a different approach on an issue, other companies in the sector can't afford not to implement it. Or from a different angle, it's important in the context of the supply chain and sectoral dynamics as well."*

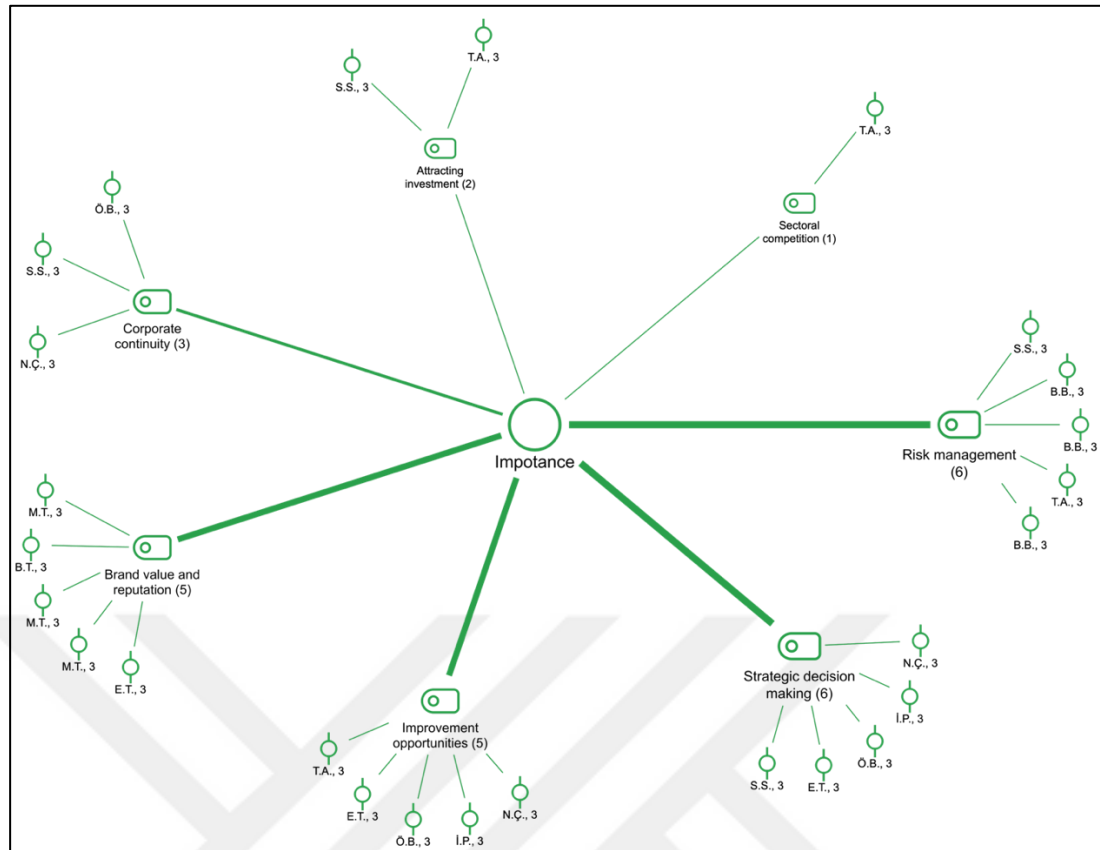


Figure 6. Sub-code frequencies of importance

**4.3.2 Target group of the corporate sustainability measurement.** The bar chart in Figure 7 presents the distribution of target groups identified by participants as key beneficiaries or users of corporate sustainability performance measurement. The frequencies reflect how often each group was mentioned during interviews, offering insights into perceived target relevance.

Employees and Investors were the most frequently cited groups (each mentioned by 20% of participants,  $n=6$ ), indicating that internal stakeholders and financial actors are seen as primary consumers of sustainability data. This highlights a dual internal–external function of sustainability metrics: internally, to guide workforce engagement and cultural alignment; externally, to inform investment decisions and signal long-term viability.

Regulators (17%,  $n=5$ ) also featured prominently, underlining the role of sustainability measurement in ensuring regulatory compliance and public accountability. This suggests that participants view formal reporting mechanisms as not only organizational tools but also instruments of transparency toward state and institutional actors.

Top Management and Customers (13%, n=4 each) were equally mentioned, reflecting the importance of performance data in strategic leadership and consumer-facing communication. Sustainability metrics are thus seen as tools that influence both internal strategy and external market perceptions.

Shareholders (10%, n=3) were noted slightly less frequently than investors, which may reflect a distinction in the perceived roles or expectations of different types of capital providers.

Finally, Society and NGOs (7%, n=2) were the least frequently mentioned group, pointing to a potential under-recognition of civil society in corporate sustainability strategies. This could signal a gap in stakeholder inclusion or a tendency to prioritize actors with direct organizational impact.

Overall, the findings suggest that sustainability performance measurement is viewed as essential for a diverse range of stakeholders, with particular emphasis on those who influence strategic decisions, capital flows, and regulatory oversight. This aligns with a growing trend toward stakeholder-oriented governance models, where non-financial metrics play a critical role in shaping perceptions and guiding actions.

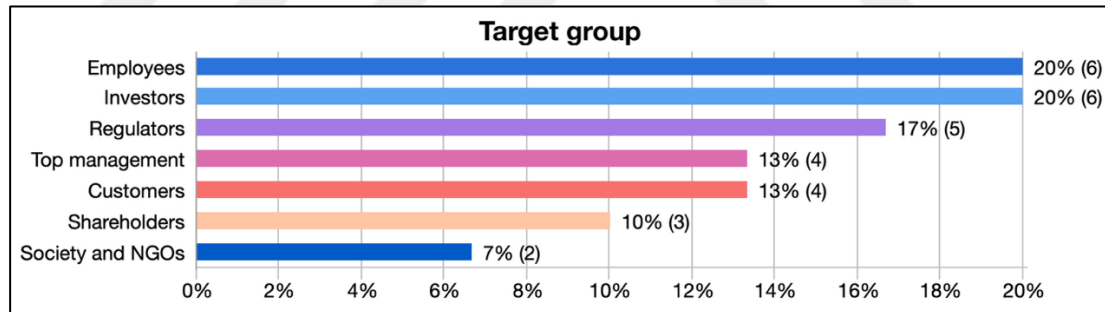


Figure 7. Sub-code statistics of target group

Some of the participants' responses to the question "For whom is corporate sustainability performance evaluation important?" are presented below:

- E.T.: *"This needs to be embraced from the top. It is important in terms of accountability and transparency, and once it is embraced at the top, it can be disseminated to the lower-level teams. This way, the entire organization is essentially driven toward that goal."*

- M.T.: *“Beyond that, in terms of stakeholders, what we value most here is raising awareness—not only among guests but also among our employees and business partners.”*
- S.S.: *“Already today, ESG reporting is extremely important in terms of access to financial resources. Because there are rapidly growing sustainability funds around the world.”*
- B.T.: *“Apart from investors, of course there are shareholders. For companies listed on the stock exchange, there are shareholders.”*
- B.T.: *“When it comes to product manufacturers, retailers, or service providers, we definitely need to say: customers. They are one of the most important stakeholders.”*
- B.B.: *“For publicly traded companies, there is a measurement method used on the stock exchange side in collaboration with Refinitiv. CDP invites publicly traded companies, and although volunteers are also included, the main focus is still on performance evaluation for listed companies.”*
- T.A.: *“Another group of stakeholders would be NGOs. NGOs have also started to become interested in sustainability performance.”*

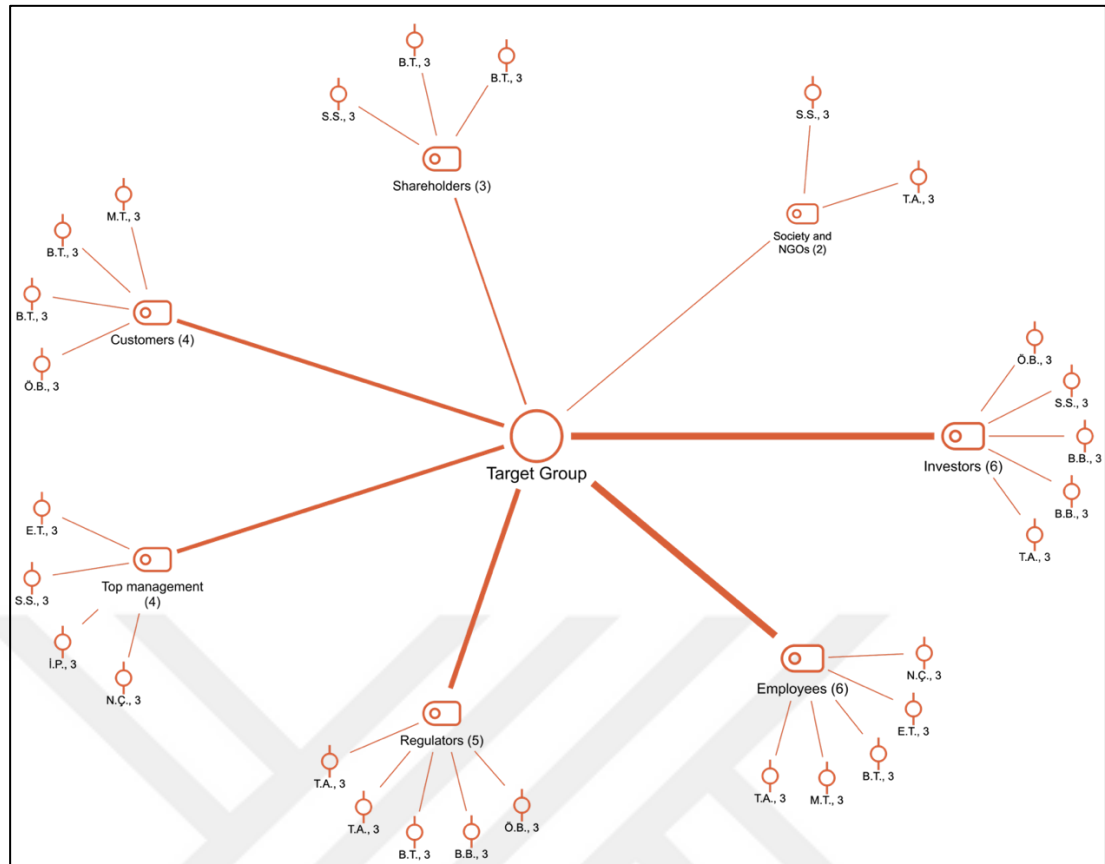


Figure 8. Sub-code frequencies of target group

**4.3.3 Difficulties of the corporate sustainability measurement.** The bar chart in Figure 9 highlights key difficulties identified by participants in measuring corporate sustainability performance. These challenges, derived from qualitative coding of interview data, reflect practical and organizational barriers that hinder the effective implementation of sustainability evaluation frameworks.

The most frequently mentioned issue was the Complexity of Indicators (18%, n=8), suggesting that stakeholders perceive the abundance and heterogeneity of sustainability metrics as a major obstacle. This complexity may arise from a lack of standardization across frameworks or sector-specific variations, making it difficult for organizations to identify and apply appropriate indicators.

Data Gathering (16%, n=7) emerged as another significant challenge. Participants noted the difficulties in accessing reliable, consistent, and timely data, especially in organizations with limited digital infrastructure or fragmented reporting systems.

The Lack of Digital Tools (14%, n=6) reinforces the above point, indicating that technological readiness plays a crucial role in the feasibility of sustainability

measurement. Without integrated data systems or analytics platforms, measurement efforts remain manual, time-consuming, and error-prone.

Three themes—Top Management Support, Application Differences, and Lack of Knowledge and Communication—were equally cited (11%, n=5 each). These reflect internal organizational barriers, including insufficient leadership commitment, inconsistent implementation practices across units, and limited staff awareness or engagement in sustainability practices.

Finally, Investment Need and Resistance to Change (9%, n=4 each) highlight structural and cultural impediments. Participants indicated that financial constraints and organizational inertia can significantly slow down the adoption of robust measurement models.

Taken together, these findings reveal that sustainability performance measurement is not solely a technical challenge but also an institutional and behavioral one. Effective implementation requires simplifying indicator frameworks, enhancing data infrastructure, securing leadership buy-in, and addressing cultural resistance through awareness and capacity-building initiatives.

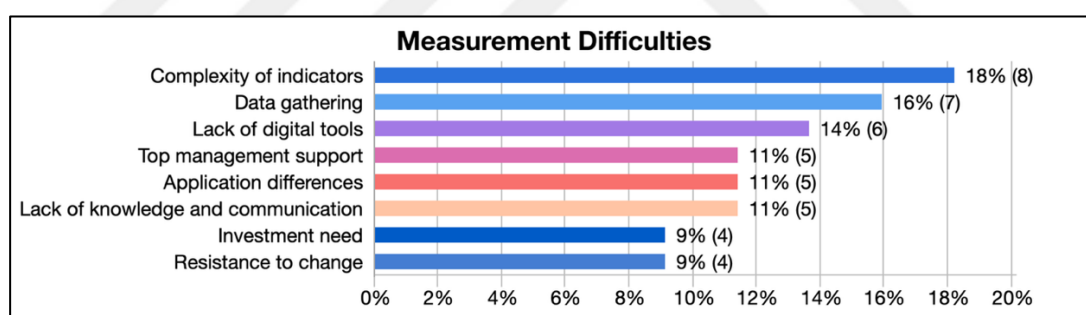


Figure 9. Sub-code statistics of measurement difficulties

Some of the participants' responses to the question "What are the challenges encountered when evaluating corporate sustainability performance?" are presented below:

- T.A.: *"When we look at it, in order to produce a report, data must first be generated, then analyzed, and finally transformed into a report. But the data is limited. We see that companies have difficulties because the data I mentioned earlier is not well-established in companies, and they don't have easily accessible databases."*

- E.T.: *“This is one of the most challenging areas because it is extremely manual. Waste data comes separately, electricity consumption, natural gas, water, and HR data all come separately, and this reporting takes up a huge amount of our time. Last year, we started a project. We are dreaming of integrating this data into a platform as much as possible, where top management can also view it in real time.”*
- S.S.: *“Topics like digitalization, which require investment.”*
- S.S.: *“Also, how and what to categorize. In other words, what the main focus of the sustainability transformation should be. This is also about correctly analyzing future challenges and risks.”*
- B.B.: *“Honestly, collecting KPIs is very difficult. But that also depends on management saying ‘go collect it.’ That might require investment.”*
- İ.P.: *“Changing regulations need to be constantly adapted into procedures and specifications. There is always resistance to change. Overcoming resistance to change is crucial. People don’t want to leave their comfort zone—it’s in human nature.”*
- Ö.B.: *“Generally, they integrate global reporting frameworks into these indexes or performance systems. It depends a lot on what we’re talking about. If we’re talking about Dow Jones, it’s one thing; if we’re talking about Borsa Istanbul, it’s another. Or if we’re talking about the IT tool of company X or Y, it’s something entirely different.”*
- M.T.: *“I wish there had been a general briefing beforehand. I wish all departments, all white-collar employees had been trained first. Then we could have gone into reporting, and everyone would’ve known what to expect. Now people panic and worry. For example, 250 questions go to that person, and they have no idea about many of them. No one was fully able to adapt, in my opinion.”*

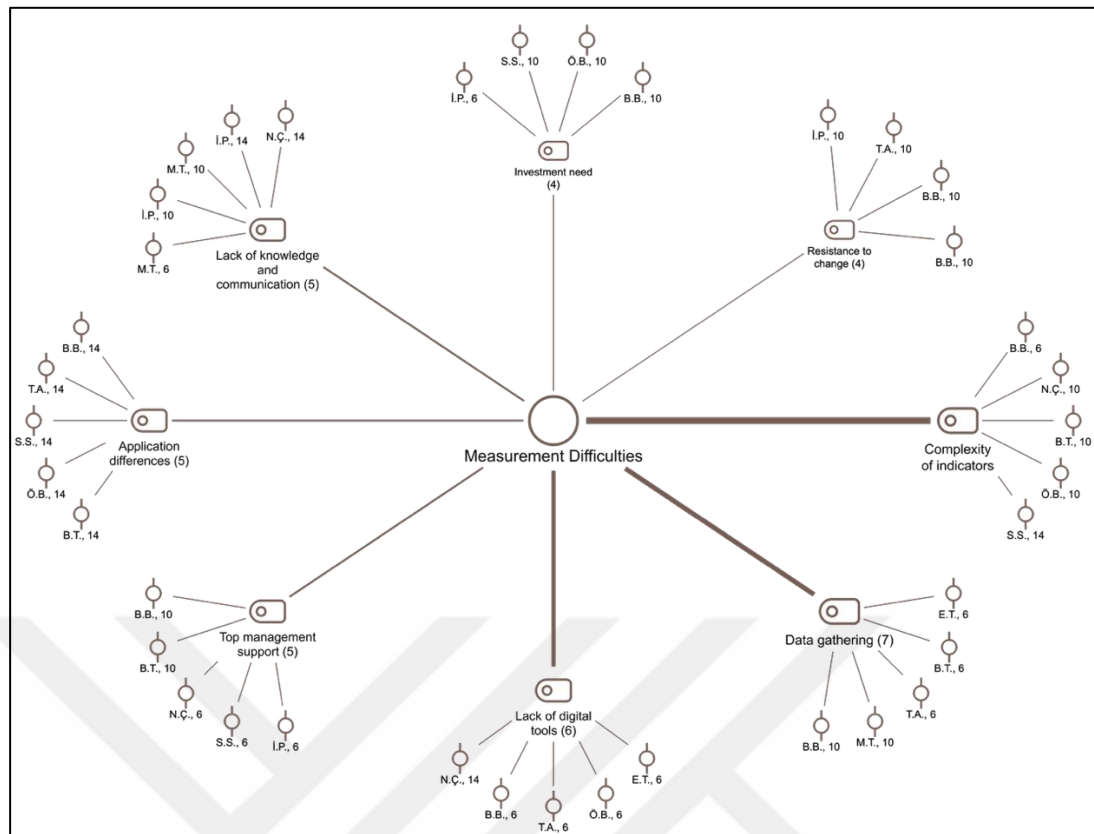


Figure 10. Sub-code frequencies of measurement difficulties

#### 4.4 Performance Indicators

The bar chart in Figure 11 visualizes the participants' perspectives on the most essential dimensions to be included in the evaluation of corporate sustainability performance. The results strongly reflect the widespread adoption of the ESG framework, with varying degrees of emphasis across its three pillars—Environmental, Social, and Governance—and an additional economic consideration.

The Environmental dimension was the most frequently emphasized (35%, n=45), indicating that participants see ecological issues—such as emissions, resource use, and climate impact—as central to sustainability assessments. This result is in line with the global discourse that places environmental responsibility at the forefront of corporate sustainability agendas.

Closely following was the Social dimension (34%, n=43), suggesting a near-equal prioritization of issues such as labor conditions, diversity, equity, community engagement, and employee well-being. The strong presence of this category signals a shift toward recognizing the social license to operate as a vital aspect of sustainable business conduct.

Governance-related indicators were also considered important (27%, n=34), particularly in relation to transparency, accountability, ethical conduct, and board-level oversight. These responses suggest that sound governance is perceived as a backbone that enables effective implementation of environmental and social policies.

Interestingly, Economic indicators were cited far less frequently (4%, n=5), reflecting a tendency among participants to decouple traditional financial metrics from sustainability-specific performance measurement. This may indicate that while financial viability remains essential, it is seen more as a baseline or enabler rather than a core sustainability dimension in itself.

These findings underscore a strong alignment with ESG standards while also revealing participant preferences and perceived priorities. The prominence of environmental and social aspects suggests that future model designs may benefit from placing increased analytical and operational emphasis on these domains, while ensuring governance remains an integrative force that facilitates implementation.

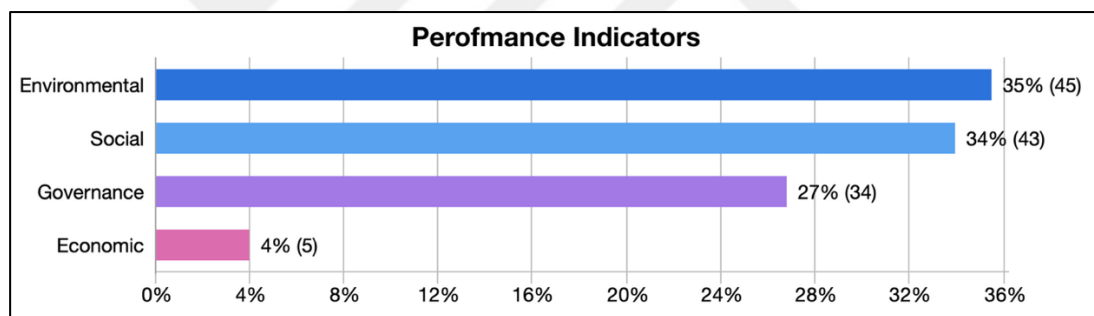


*Figure 11.* Sub-code statistics of performance indicators

The visual network diagram in Figure 12 illustrates the distribution of participant references to the four core categories within the Performance Indicators theme: Environmental, Social, Governance, and Economic. Each line from the central node (“Performance Indicators”) extends to subthemes, which are in turn connected to individual participants who made relevant contributions.

The Social dimension appears as the most widely cited, with nine individual links to participants, indicating that this theme was nearly unanimously acknowledged across the sample. Similarly, both the Environmental and Governance categories each have eight references, showing that these themes were also broadly recognized and discussed by participants. The presence of these three themes in almost every

participant's input suggests a shared understanding of the ESG framework as the backbone of sustainability performance evaluation.

In contrast, the Economic dimension was referenced by only two participants. This limited engagement reinforces earlier quantitative findings, where economic indicators received the lowest frequency of mentions. The result may reflect participants' tendency to separate financial performance from sustainability-specific considerations, or a perception that economic metrics are already adequately covered through conventional financial reporting.

The even distribution of participant codes across Social, Environmental, and Governance indicators suggests a balanced and multi-dimensional view of sustainability among stakeholders. Moreover, the involvement of diverse participant profiles (as denoted by their initials) across all three major categories indicates a broad consensus on the relevance of these dimensions, regardless of organizational role or sectoral background.

This visualization confirms that while sustainability is widely conceived through the ESG lens, the relative neglect of economic indicators points to an opportunity for model development efforts to either better integrate economic concerns or justify their de-emphasis in favor of more mission-aligned metrics.

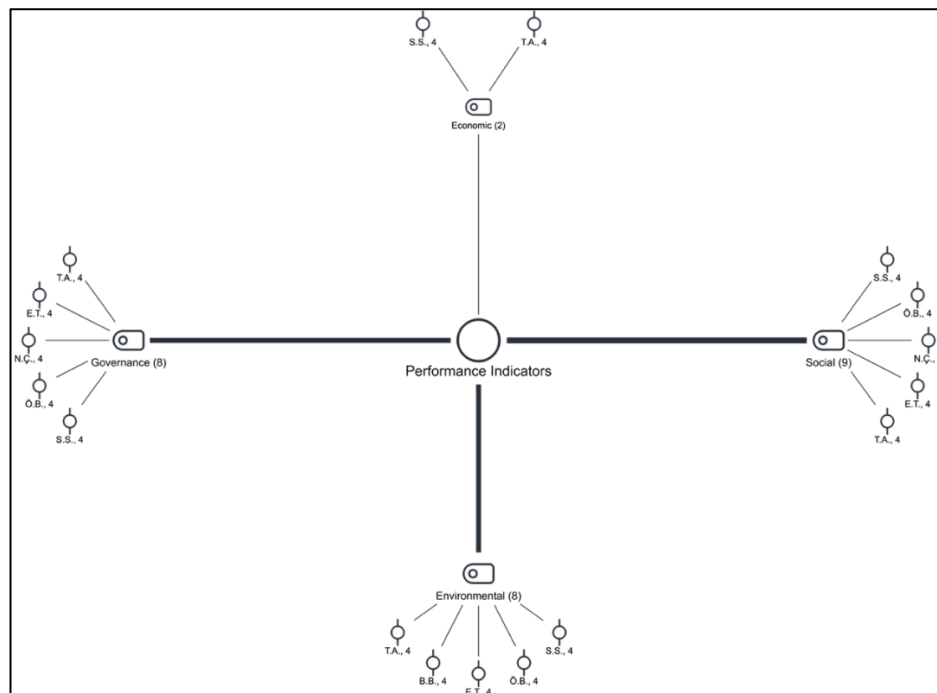


Figure 12. Sub-code frequencies of performance indicators

**4.4.1 Environmental indicators.** The bar chart in Figure 13 displays the frequency distribution of specific environmental indicators proposed by participants for inclusion in a corporate sustainability performance model. The data reflects a clear prioritization of environmental issues that are both measurable and strategically significant.

Emissions and Water usage emerged as the most frequently mentioned indicators (24% each, n=9), highlighting participants' strong concern with climate-related impacts and resource efficiency. Emissions are closely linked to carbon footprint and climate action goals, while water is increasingly seen as a critical operational and reputational issue, especially in water-stressed regions and industries.

Waste management was cited by 22% of participants (n=8), pointing to its relevance in both environmental compliance and circular economy practices. The frequent mention of this indicator suggests that stakeholders view waste reduction not only as a sustainability target but also as a potential area for cost savings and innovation.

Energy consumption (14%, n=5) and Natural resource usage (11%, n=4) were also regarded as important metrics, indicating a broader understanding of resource dependency and environmental impact across the corporate value chain. These indicators reflect operational efficiency concerns and long-term ecological sustainability.

Biodiversity was mentioned less frequently (5%, n=2), potentially due to its perceived complexity or lack of direct measurability in corporate contexts. However, its inclusion, even at a lower frequency, suggests that a subset of participants is aware of the broader ecosystem implications of corporate activity.

Taken together, the data demonstrates that participants favor environmental indicators that are both quantifiable and actionable, with a focus on emissions, water, and waste. These findings can inform the development of a performance model that prioritizes environmental metrics with high relevance, availability, and impact potential, while also considering emerging indicators like biodiversity in more advanced or sector-specific applications.

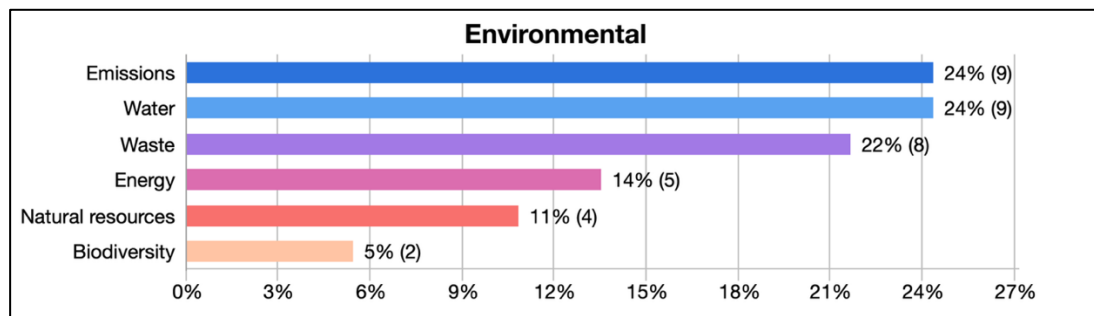


Figure 13. Sub-code statistics of environmental indicators

Some of the participants' responses to the question "What performance indicators can be used when evaluating corporate environmental sustainability performance?" are presented below:

- S.S.: *"When we say environmental, we're talking about the damage a business or institution causes to the environment during the operation of producing its product—whether it's in the real sector or the service sector, regardless of the product. This damage appears as the carbon footprint. So, the entire environmental impact of the operation must be measured."*
- T.A.: *"When we look at environmental aspects, I think we can first list natural resources. By natural resources, I mean the water, energy, or raw materials a company uses. Therefore, their performance must be evaluated. We need to measure how much is used and also look at where these resources are sourced from. Another issue is the ecological footprint caused by companies. Regarding air as a receptor environment, due to increasing importance of climate change, greenhouse gas emissions should also be monitored. In addition, if an operation involves water use, then industrial wastewater should be considered. Another receptor is soil, which brings waste to mind. Therefore, it is beneficial to look at the waste inventory. Waste and waste characterization should be considered. It would be better if we analyzed both domestic waste and recyclable waste separately. Along with performance, after identifying these indicators, we should also look into the related processes—such as what happens after the waste is generated, how it is managed, where it is sent."*
- B.B.: *"Carbon emissions need to be measured, as well as the amount and types of waste generated. Consumption levels—how much of which resources are being used, whether energy or natural resources—should also be monitored."*

- B.T.: *“We already have certain metrics for the environment—air, water, soil, etc.—and their impact or effectiveness varies depending on the type of production. We also value impact investment—not just measuring our impact but also the benefit we generate. This includes biodiversity, water, air, marine ecosystems, and definitely efficiency—energy and water efficiency.”*
- İ.P.: *“On the environmental side, what’s important to us are air, noise, and dust measurements. These values are very significant to me. Regarding water, we’re in an organized industrial zone that performs regular measurements. Fire risk analysis is also very topical. Air monitoring. Vibration. Sound measurement. How much did I reduce my greenhouse gas emissions? How much did I reduce my waste? How much did I send for recycling?”*
- M.T.: *“On the environmental side, of course, we have the water footprint. The carbon footprint, i.e., greenhouse gas emissions. We also have life cycle assessments.”*
- E.T.: *“Under climate, we monitor emissions—Scope 1, Scope 2, and total emissions. Under circular economy, we look at our waste. Water consumption, water withdrawal. Especially now, with water risk being a major concern, water is a key parameter for us. We specifically track water consumption per vehicle. These are what I can mention under the environmental dimension.”*
- N.Ç.: *“On the environmental side, above all, everyone has a goal of becoming carbon neutral. Therefore, greenhouse gas emissions are critical. Proper waste measurement and waste management. Water footprint. In fact, if we manage the climate properly, we end up measuring everything—from biodiversity to supply chain, water management to waste management.”*
- Ö.B.: *“When we talk about the environment—our responsibility to the planet—we’re talking about climate change, risk management, transparency in the value chain, circular economy, energy management, materials management, water management, chemical management.”*

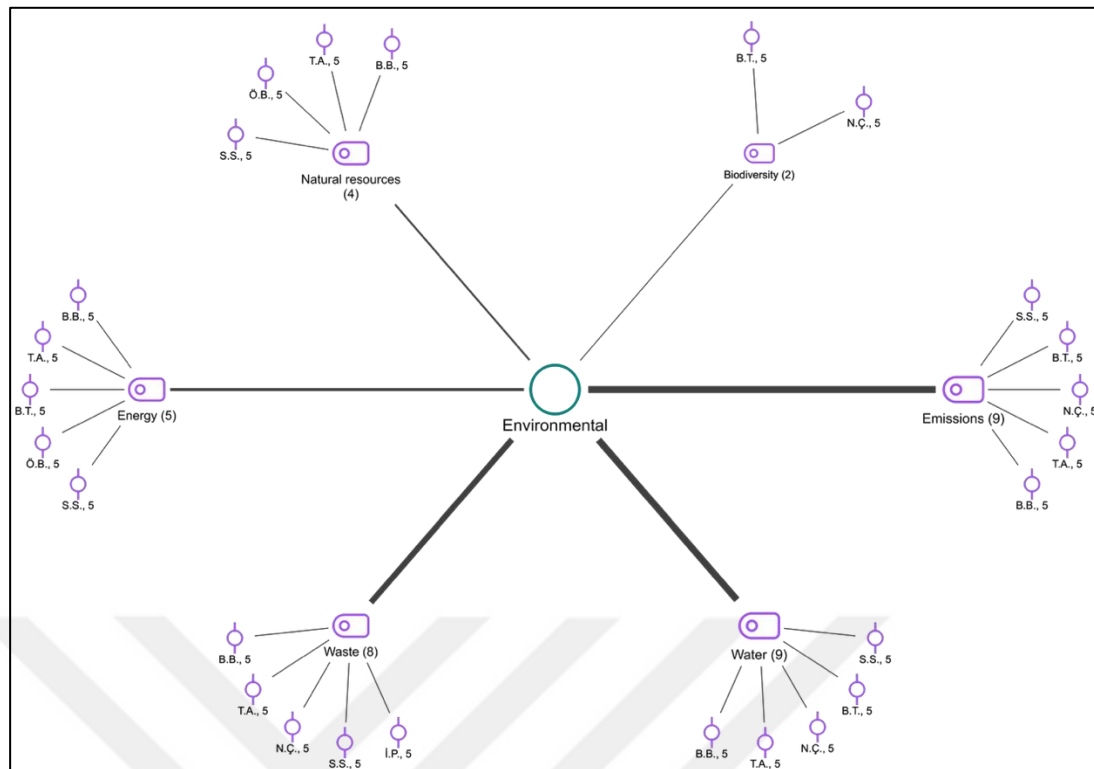


Figure 14. Sub-code frequencies of environmental indicators

**4.4.2 Social indicators.** The bar chart in Figure 15 presents the frequency of specific social indicators identified by participants as essential components of corporate sustainability performance measurement. These indicators reflect concerns related to internal workforce dynamics as well as external social responsibility.

The most frequently mentioned indicator was Gender Equality (24%, n=8), suggesting that participants view diversity and inclusion—particularly in terms of gender representation—as a key marker of social sustainability. This emphasis aligns with global trends and ESG reporting standards that prioritize equitable workplace practices.

Employee Welfare and Contribution to Society were each cited by 21% of participants (n=7), highlighting the dual focus on internal well-being and external social impact. While employee welfare covers issues such as benefits, work–life balance, and job satisfaction, contribution to society refers to broader corporate citizenship, including community involvement and social development initiatives.

Training and Education (15%, n=5) was also noted as a significant indicator, indicating that participants consider capacity-building and employee development

critical for long-term social sustainability. This reflects a recognition of human capital as a strategic asset.

Health and Safety (12%, n=4) emerged as another relevant area, particularly in industries with operational risk exposure. The presence of this indicator suggests a baseline expectation for compliance and care in workplace environments.

Lastly, Turnover (9%, n=3) was mentioned less frequently but still acknowledged as a potential signal of organizational health and employee satisfaction. High turnover can indicate instability and poor internal climate, thus offering indirect insight into social performance.

These findings indicate that participants value a broad and people-centered approach to social sustainability, emphasizing inclusion, well-being, development, and community engagement. The identified indicators are both measurable and actionable, providing a strong basis for integrating the social dimension into performance evaluation models.

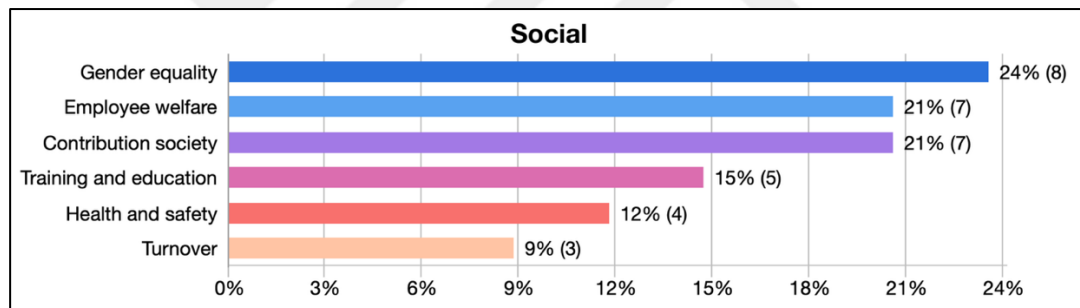


Figure 15. Sub-code statistics of social indicators

Some of the participants' responses to the question "What performance indicators can be used when evaluating corporate social sustainability performance?" are presented below:

- S.S.: *"I believe the social dimension should be considered in two parts. The first is the work done for the well-being of employees—the organization's own staff. This includes internal efforts related to gender equality, ethical values, and a fair system. All of these, along with a management model that contributes to employee well-being. The second dimension of social welfare is the organization's contribution to the lives of people in the surrounding social*

*environment. This can be measured through contributions to education, ethics, justice, social life, and cultural transformation.”*

- T.A.: *“When we move to the social side, we should first look at the gender distribution in the company in terms of gender equality. Along with that, we need to consider representation—what positions they hold. Avoiding child labor and respecting union rights are also on the social side. We should also look at non-wage benefits provided to employees—such as shuttle services, daycare, and maternity leave. In addition, it’s useful to look at contributions to society. Especially CSR projects—though not charity work per se, but how involved they are in projects that truly impact the community.”*
- B.B.: *“On the social side, we can mention the ratio of female to male employees, training hours per person, occupational health and safety indicators such as accident rates and lost-time injuries. Employee engagement levels, satisfaction surveys, turnover rates. As for contributions to society, although everyone describes their projects in sustainability reports, there are no real tracking parameters. I’ve never seen a social KPI related to the community in a sustainability report. Let me say that. Only in Gold Standard projects are such tracking metrics included. For example, the percentage of employees from the local community is expected to increase each year, or local procurement figures. Gold Standard includes monitoring for social sustainability.”*
- B.T.: *“On the social side, there’s the individual, communities, residents around your production sites, customers, and also your supply chain. All of these have social dimensions. For example, whether child labor is used. How much value is given to people, and HR’s approach to governance.”*
- İ.P.: *“On the social side, we have employee satisfaction surveys, equal pay for equal work, working conditions, occupational health and safety (OHS) risk analyses, gender equality, diversity and inclusion, and employee training. In the future, we plan to provide training for employees’ spouses and children as well. But what I care about most socially is whether we can educate our suppliers about sustainability and motivate them to invest, take action, and be encouraged in this field. If we can turn that wheel and make it autonomous, I*

*see that as social impact as well. We also view that as a form of social responsibility.”*

- M.T.: *“As I said, on the social side there are HR-related issues: employee well-being, gender equality, increasing employment of women and persons with disabilities. In terms of community benefit, supporting local and small-scale producers and suppliers is also relevant.”*
- E.T.: *“On the social side, we have programs especially aimed at youth employment. We have metrics related to talent retention and employee turnover. We have targets to increase the employment of women—across office, field, and leadership roles with distinct metrics. And we also track OHS metrics like accident frequency rate under the social dimension. We actually track anything that creates value for society, but not always in metric form. For example, communication activities—like how many customers we’ve reached—are tracked, but not yet included in our formal KPIs.”*
- N.Ç.: *“When we look at the human aspect, the HR side includes employee turnover, inclusion—not just gender equality, though we have targets for the proportion of women employees, increasing the number of women in leadership is more important to us. Because when you look at it, even before equal pay distribution, we can’t even achieve equal task distribution. That’s why we’re currently working on what we need in terms of talent management and how we can move forward. Also, we provide training throughout the year. Another aspect is measuring how our actions impact our stakeholders. For these measurements, we move forward with external support. The most difficult measurements are on the societal side. We can’t measure the financial impact of our actions on revenue. I don’t think many companies can—and this is the most critical part.”*
- Ö.B.: *“On the social side, our responsibilities to people and society include empowering women, which we care about deeply. Corporate culture. Employee experience. Diversity and inclusion. Occupational health and safety.”*

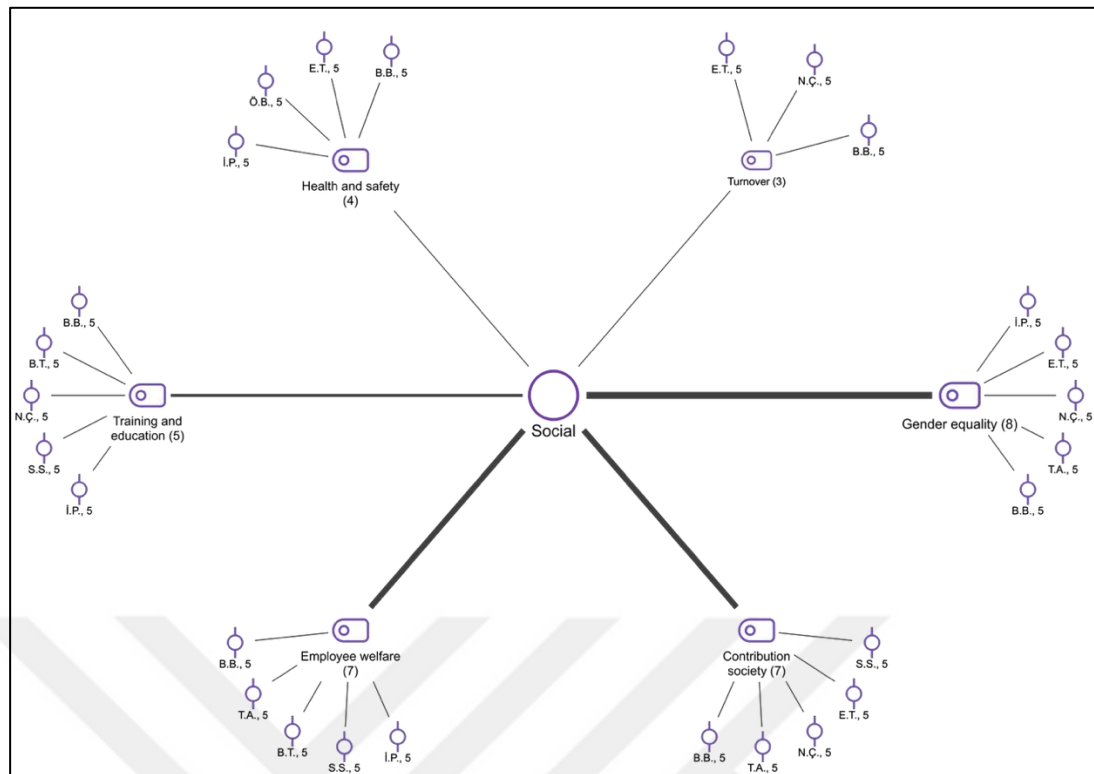


Figure 16. Sub-code frequencies of social indicators

**4.4.3 Governance indicators.** The bar chart in Figure 17 illustrates the governance-related indicators proposed by participants for inclusion in sustainability performance assessments. These indicators reflect organizational practices and systems that ensure ethical conduct, strategic alignment, and transparent accountability.

The most frequently cited governance indicator was the use of Key Performance Indicators (KPIs) (23%, n=6), signifying the importance of setting and tracking measurable governance targets. This finding suggests that participants view structured, performance-based governance as essential for institutionalizing sustainability within corporate operations.

Stakeholder Management followed with 19% (n=5), indicating that effective engagement with internal and external stakeholders is perceived as a key element of responsible governance. This includes managing expectations, fostering dialogue, and ensuring representation in decision-making processes.

Three indicators—Ethics, Compliance, and Transparency and Accountability—were each cited by 15% of participants (n=4). These elements emphasize the foundational role of values and integrity in corporate governance systems. Participants

appear to agree that sustainability performance cannot be achieved without adherence to legal obligations, ethical norms, and openness to scrutiny.

Other indicators such as Board Structure, Communication, and Innovation were each mentioned by 4% of participants (n=1). Although less frequently cited, these indicators still represent emerging or supporting governance mechanisms that can contribute to sustainable decision-making and adaptive capacity.

Collectively, these responses suggest that governance is understood not merely as a formal structure, but as a set of operational and cultural mechanisms that ensure responsible leadership and organizational coherence. The prominence of KPIs and stakeholder management reflects a shift toward proactive and participatory governance, aligning corporate oversight with sustainability goals.

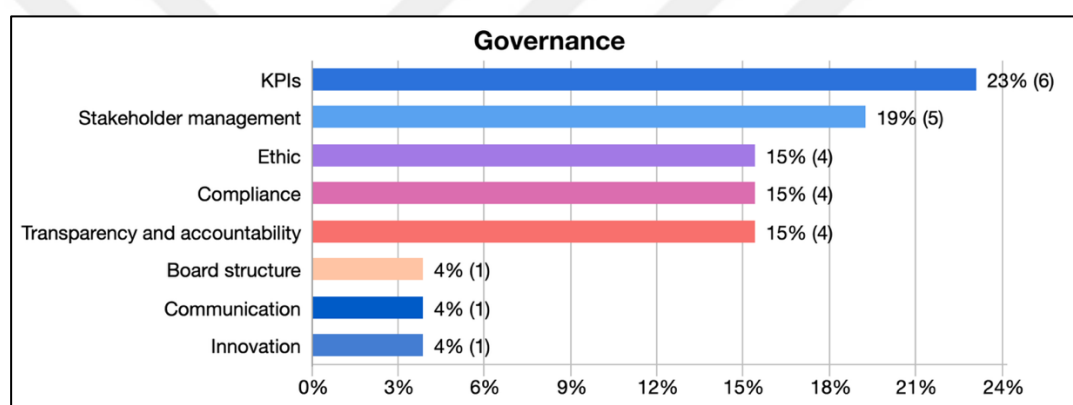


Figure 17. Sub-code statistics of governance indicators

Some of the participants' responses to the question "What performance indicators can be used when evaluating corporate governance sustainability performance?" are presented below:

- S.S.: *"We define the governance dimension as managing risks correctly. And here's the thing—if institutions don't make money, don't generate profit, they cannot sustain their existence in today's world. From this perspective, the institution's approach to ethical values in profitability, accurately measuring profitability, and how it adapts to risks—how it evaluates the risks it faces and translates them into market targets, share value, sales goals, and profitability—are all relevant. Because today we're talking about assessing risks collectively—economic, technological, social, and environmental risks—*

*and ensuring economic continuity by evaluating them correctly could be key indicators.”*

- T.A.: *“In governance, how the company is managed becomes significant. Therefore, does the company have transparency and accountability? How does it handle these? How does it report, and is there an accredited institution involved? These can be reviewed. The structure of the board of directors is also important—are there independent board members? What is the composition? Gender may also be considered here. The frequency of board meetings and reporting mechanisms could also be governance indicators. Of course, financial aspects like financial reporting and responsibilities may also be part of governance.”*
- B.B.: *“Indicators on the governance side are somewhat weak—it might be one of the weakest dimensions. What we often see in governance is revenue, profit margins—mostly financial data. Basically, what’s already available in standard financial reports. As for governance-specific KPIs, like what decisions were made, or how those decisions align with climate change—these types of questions exist in GRI, but I can’t say they are monitored as KPIs in practice. Reports mention transparency, but without criteria. Perhaps indicators could include ethics hotlines or the number of reports received. Governance might refer to that section of the report. Like, how many ethics reports were submitted, what actions were taken. But even that is rarely shared—just ‘5 reports were submitted’ and nothing further. To truly define something as a KPI, you’d need to say, ‘Today we received 5 reports, and here’s what we’re doing to reduce that to 3.’ Otherwise, it’s just reporting a number, not managing performance.”*
- B.T.: *“In governance, it’s about how all of these elements are managed—relationships with investors, shareholders, internal board members, and how sustainability is perceived at the board level.”*
- I.P.: *“In terms of governance performance, we have a suggestion system, and it works quite well. Both office and field employees participate. The idea is to generate projects and propose improvements, like ‘if we do this, we gain that much efficiency’ or ‘this would be the result if we do that.’ I believe the suggestion system is the most important aspect here.”*

- M.T.: *“In governance, we align with the GRI framework. We aim to create value in local community organizations. There’s anti-corruption, which is very important. Also, mandatory ethics and compliance training—I take it three times a year, and everyone is required to do so. There are efforts tied to environmental topics too—like increasing the procurement of recycled products. Measures for guest health and safety, regulatory enhancements. Label regulations. Data protection (KVKK in Türkiye) is very important, as it relates to guest communication. There’s also risk mapping.”*
- E.T.: *“In governance, there’s the supplier side and the dealership side. For supplier transformation, we have a sustainable procurement policy. Compliance with that policy is audited. There’s a target to increase the proportion of approved sustainable suppliers. During our annual audits, suppliers must meet a certain score in that segment. For dealer transformation, there are audits and training—such as how many people received how many hours of training to support that transformation.”*
- N.Ç.: *“At the core of governance are company targets. Accountability is critical for us, so we track everything numerically. Goals are cascaded horizontally and vertically to all employees from the outset. Every three months, management reviews the goals. This way, we assess whether the right investments were made, whether the right steps were taken, and whether communication was effective and directed to the right people. Our strongest capability is having measurable governance processes.”*
- Ö.B.: *“Governance—our responsibility to our work—includes unconditional customer satisfaction, product innovation, business model innovation, and ethical management. These are the foundations of our strategy, and we’ve established performance indicators around them.”*

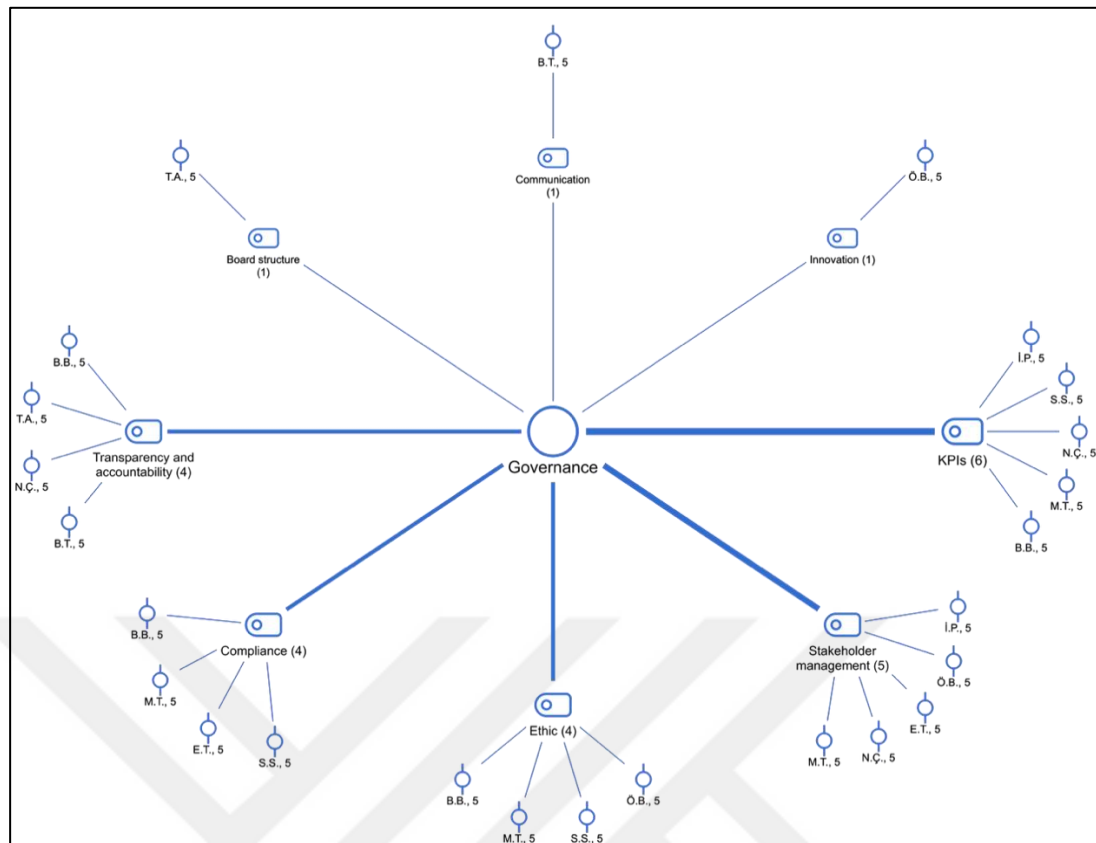


Figure 18. Sub-code frequencies of governance indicators

#### 4.5 Measurement Model Suggestions

As participants reflected on the development of a functional and effective sustainability performance evaluation model, several strategic recommendations emerged. These suggestions coalesced around three interrelated themes: incentive and implementation elements, model structure, and core features that enhance usability. The insights point to the need for models that are not only conceptually robust, but also operationally feasible and motivating for organizations. Participants emphasized that the integration of enabling mechanisms—such as KPI systems, regulatory alignment, and financial incentives—would foster broader adoption and consistent application. Additionally, there was a strong preference for structural flexibility, including sector-specific and modular approaches, which could accommodate the diverse capacities and sustainability priorities of different organizational contexts. Finally, the inclusion of user-friendly features such as digital integration, scoring systems, and benchmarking tools was seen as essential to ensure accessibility, engagement, and long-term effectiveness. Collectively, these recommendations

outline a pathway toward a sustainability performance model that is both adaptable and actionable.

**4.5.1 Incentives and enablers for model implementation.** The bar chart in Figure 19 illustrates the key elements that could improve the incentive and implementation capacity of corporate sustainability performance evaluation models based on participants' views. These results provide important information on how performance models can be designed to not just evaluate performance, but also to encourage changes in behavior and within organizations.

The integration of KPI Systems (31%, n=5) was the most frequently mentioned enabler. Participants believe that implementing key performance indicators is crucial for embedding sustainability goals within an organization. KPIs serve as both targets and tracking mechanisms, promoting internal alignment and accountability within organizations.

Each Financial Incentives and Regulations were cited by 25% of participants (n=4). That indicates a dual reliance on market-based and policy-based motivators. The regulatory measures introduce standards and obligations that ensure baseline compliance while the financial incentives appeal to the economic interests of companies. This balance reflects a recognition that both voluntary engagement and formal requirements are needed to drive systemic change.

Another two things that were brought up by the participants were Voluntariness and Obligation (13%, n=2). This emphasizes the conflict between self-regulation and mandatory standards. Some participants suggested a mix of both, with voluntary compliance being promoted but supported by regulatory guidance.

The least frequently mentioned element was Investor Demand (6%, n=1). Still, its presence suggests that external stakeholder expectations, particularly from capital markets, are becoming more important although still developing in terms of influence in some organizational settings.

Overall, these results point to the need for sustainability models that are not only methodologically sound, but also embedded with operational enablers—such as KPIs, incentives, and compliance mechanisms—that encourage widespread adoption and long-term commitment. This strategic integration of incentives is key to transforming sustainability from a reporting function into a core element of business practice.

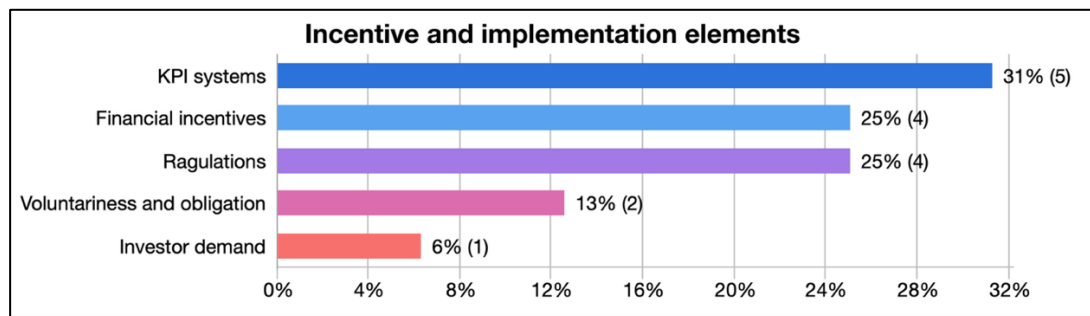


Figure 19. Sub-code statistics of incentive and implementation elements

Some of the participants' responses to the question "What incentives and implementation mechanisms can drive the evaluation of corporate sustainability performance?" are presented below:

- S.S.: *"The most important incentive is KPIs—when you integrate sustainability indicators into individual performance metrics. This is already part of procedure, assuming those procedures are written correctly. In a way, this means mainstreaming the sustainability strategy within the organization. First, identifying risks and then creating strategies tailored to those risks. We're talking about transforming the entire business model, writing procedures in line with that, and establishing an operational model accordingly."*
- T.A.: *"Sustainability reporting has become more important in the eyes of investors, and this will undoubtedly create positive performance pressure on companies. For publicly listed companies that are included in sustainability indices, reporting can also act as a form of pressure."*
- B.B.: *"Unless there's a financial carrot at the end, companies often don't engage much in this."*
- B.T.: *"In fact, it's the laws that make this mandatory. Otherwise, the only incentives might be investment and green loans. If a company doesn't need either, the only force that drives them is legal obligation. And if that's absent, even global companies—unless required to report by headquarters—don't want to do anything. They may see it as a burden, an unnecessary task, or an added consultant expense."*
- M.T.: *"Usually the most important factors pushing people toward sustainable practices are laws, regulations, and obligations."*

- M.T.: “Thirdly, there are financial advantages—like benefiting from green loans or grants from banks.”
- E.T.: “Incorporating sustainability into the company’s performance management system—from top management down—is, in my opinion, a powerful incentive. It brings accountability along with it.”
- N.Ç.: “Incentives always contribute to advancing the process. But when we look at our cities—our region, our location, or our country, however we define it—there’s currently no real incentive model. In the past, there were electricity subsidies and similar ones. Today, there are very few active incentive schemes.”
- Ö.B.: “An incentive essentially means setting a target. So, from the start, you need to define goals, KPIs, and how they’ll be managed. At the end of the day, the target itself is the trigger. That’s the objective—to reach the goal. That’s why you track it.”

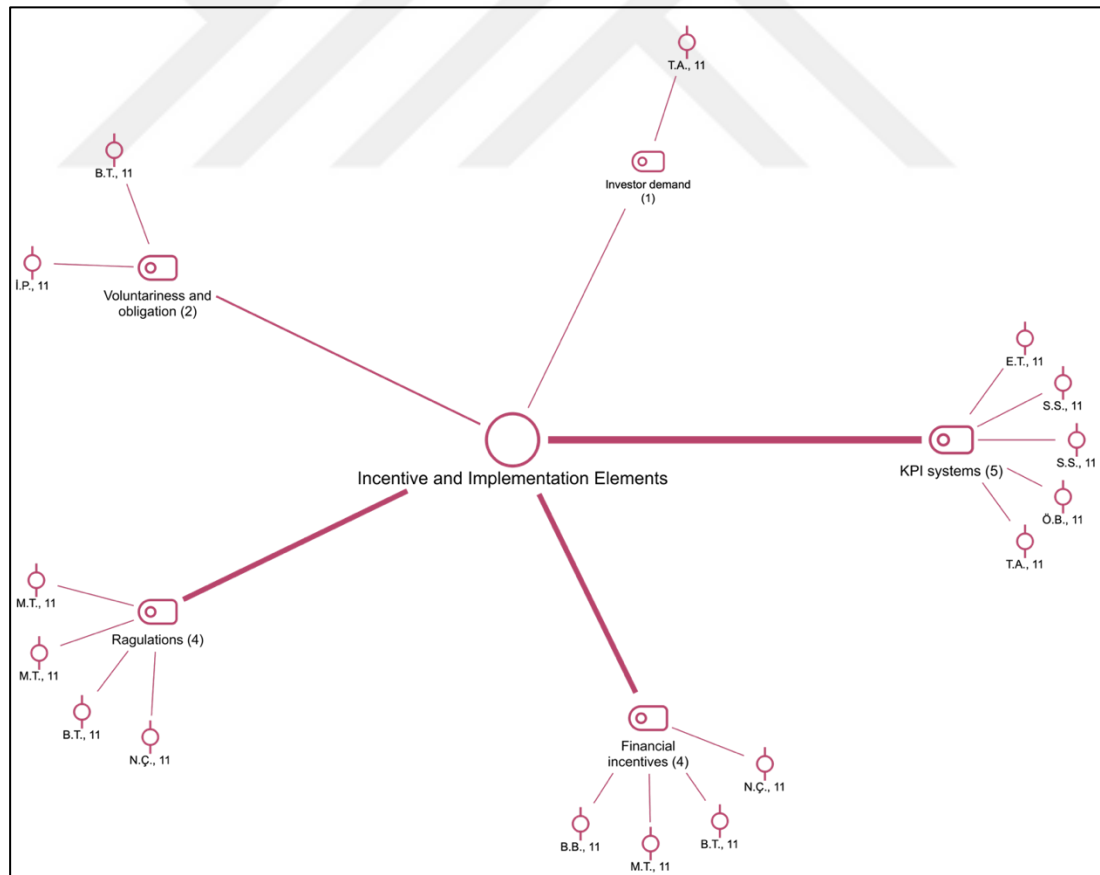


Figure 20. Sub-code frequencies of incentive and implementation elements

**4.5.2 Model structure preferences.** The bar chart in Figure 21 summarizes participant responses regarding the ideal structural features of a sustainability performance evaluation model. The data highlights a preference for flexibility and adaptability, suggesting that a "one-size-fits-all" approach may not effectively serve the diversity of organizational contexts.

The most frequently mentioned option was a Sectoral Structure (33%, n=10), indicating that participants favor industry-specific adaptations to address the unique sustainability priorities, risks, and reporting capacities of different sectors. This preference reflects a recognition that sectoral differences—such as environmental impact, regulatory environment, and stakeholder expectations—necessitate tailored approaches.

Closely following was the Flexible and Modular Structure (30%, n=9), suggesting that adaptability across organizational sizes, functions, and maturity levels is also essential. Participants appear to value modular frameworks that allow organizations to adopt the model incrementally or customize it according to their specific operational realities.

A Single Common Structure (23%, n=7) was also mentioned, reflecting a desire for standardization and comparability. While less dominant, this view supports the need for baseline alignment, especially for benchmarking, reporting, and inter-organizational learning.

Finally, the Layered Structure approach (13%, n=4) was proposed by some participants, possibly referring to a model that distinguishes between core and advanced indicators or offers phased implementation tiers (e.g., basic–intermediate–advanced levels). This approach allows for progression over time and greater inclusivity for organizations at different sustainability maturity stages.

Overall, the findings suggest that an effective model should balance standardization with adaptability. It must offer sector-specific guidance while retaining a core structural coherence, enabling comparability, scalability, and operational relevance across diverse organizational contexts.

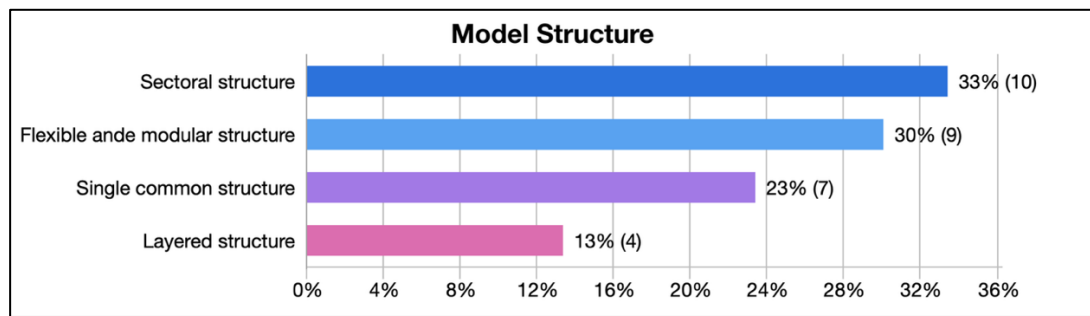


Figure 21. Sub-code statistics of model structure

Some of the participants' responses to the question "What should be the structure of a model that can be used to evaluate corporate sustainability performance?" are presented below:

- T.A.: *"Among stakeholders, there are investors. A significant portion of investors no longer base their decisions solely on traditional financial indicators when choosing a company to invest in—whether directly or through instruments like the stock exchange. Investors now want to understand the risks a company faces. In the past, they focused mainly on sectoral financial risks, but it has become clear that identifying those risks alone is not enough. Therefore, investors need access to companies' sustainability performance. This has become increasingly important for companies to attract investment."*
- T.A.: *"Another stakeholder group is employees. We see that the role and expectations of employees have evolved over time. Today's workforce is younger, and the new generation is more sensitive to communication and sustainability issues. They change their minds quickly. Companies aiming to attract and retain skilled talent must monitor and improve their sustainability performance accordingly."*
- T.A.: *"Another group of stakeholders is NGOs. NGOs have also started showing interest in corporate sustainability performance."*
- B.B.: *"For publicly listed companies, there is an assessment method implemented in collaboration with Refinitiv on the stock exchange. CDP also invites publicly listed companies to participate. While volunteers can also be included, the main emphasis remains on evaluating the sustainability performance of listed companies."*

- B.B.: “Investors want to understand whether the institution they plan to invest in or finance will be compatible with the ongoing sustainability transformation and the low-carbon economy in the coming years.”
- B.T.: “Besides investors, there are also shareholders—particularly for companies listed on the stock exchange.”
- B.T.: “When it comes to companies that produce goods, engage in retail, or provide services, customers are definitely a major stakeholder—one of the most significant.”
- M.T.: “From a stakeholder perspective, raising awareness is one of the most valuable aspects for us. Not only in terms of customers, but also among our employees and business partners.”
- Ö.B.: “Globally, the expectations of reporting frameworks, legal regulations, the steps taken by the EU, the steps taken by Türkiye, and consumer demands—all of these factors have made tracking corporate sustainability performance a necessity.”

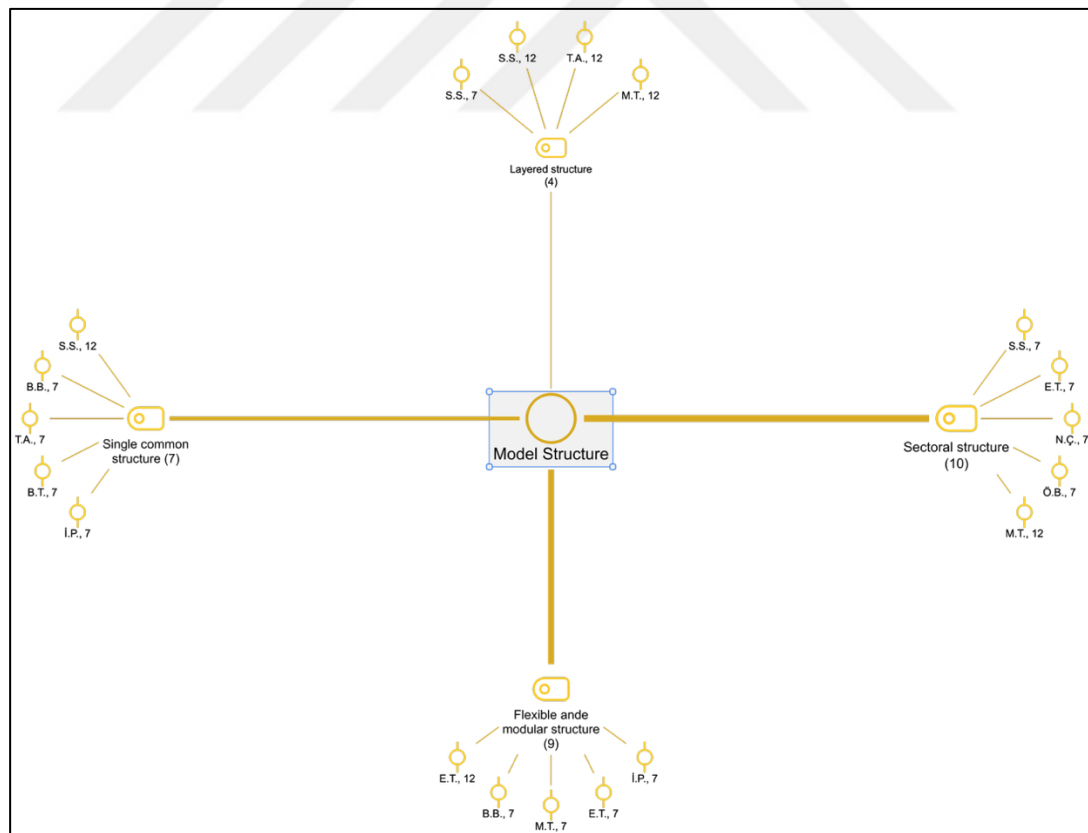


Figure 22. Sub-code statistics of model structure

**4.5.3 Features that enhance model usability.** The bar chart in Figure 23 illustrates participants' suggestions on practical features that could increase the usability and accessibility of a sustainability performance evaluation model. The findings point to a strong emphasis on functionality and digital readiness as critical enablers of adoption and integration.

Two features were tied as the most frequently mentioned: Scoring System and Digital Integration (43% each, n=6). The scoring system was valued for its ability to simplify complex sustainability metrics into an interpretable and actionable format. Participants noted that scoring mechanisms enable organizations to track progress over time, facilitate internal communication, and compare performance across units or sectors.

Digital Integration was also viewed as essential, emphasizing the need for models to be embedded within existing technological infrastructures. Participants highlighted that digitized tools, such as dashboards, automated data collection, and real-time feedback systems, can significantly reduce the burden of manual reporting and enhance model usability.

Benchmarking Elements (14%, n=2) were mentioned to a lesser extent but still considered relevant. These allow organizations to compare their sustainability performance against peers, identify best practices, and set aspirational targets. While less frequently cited, benchmarking was seen as particularly useful for large organizations and those seeking external validation or competitive positioning.

In summary, the responses suggest that for a sustainability model to be widely adopted and effectively utilized, it must incorporate user-friendly, transparent, and tech-enabled mechanisms. Such features not only reduce implementation barriers but also align with modern management expectations around data-driven decision-making and continuous improvement.

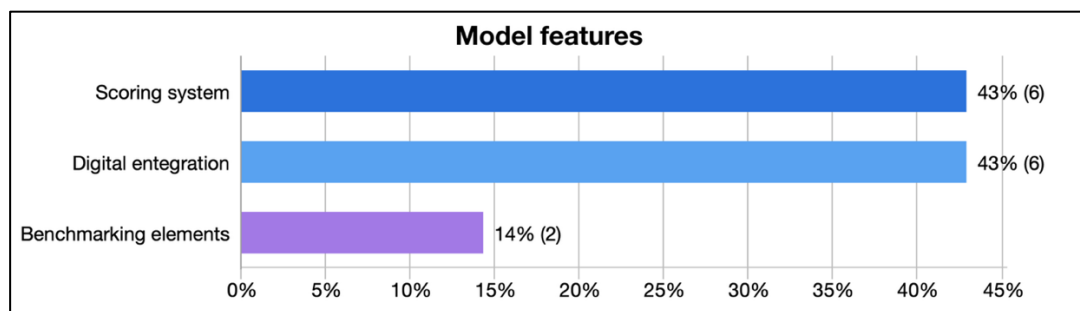


*Figure 23. Sub-code statistics of model features*

Some of the participants' responses to the question "What should be the key features of a model used to evaluate corporate sustainability performance?" are presented below:

- S.S.: *"When we talk about indicators, we mean being able to report periodically what we did in this quarter for planetary welfare, societal welfare, and employee well-being. From this perspective, just like with profitability, it's important that these are expressed numerically. For example: 'In the past three months, we reduced our carbon footprint from X to Y.' There is a digital dimension here—this must be trackable digitally. Someone will input the data, and I'll see the results. This can be done through internal performance models, like 5-year or 10-year success ratings. When these models are embedded into performance segments, including relevant KPIs, adoption accelerates. If environmental and social impact isn't discussed during any periodic review, it means it hasn't been internalized. So just as profit/loss, market share, and share value are critical indicators, so too must these others be included."*
- T.A.: *"It would be valuable to have a scoring structure for performance analysis. It should be simple yet understandable—maybe a color scale could be used. Data can be expressed as percentages with labels like 'good', 'very good', etc. I believe scoring is essential so companies can monitor themselves and benchmark against others. The more benchmarking, the better the feedback. Long-term usability is also important. The people who will use these systems already have other tasks and priorities, so solutions must be user-friendly. Perhaps AI support or cloud-based tools could help—for instance, if someone doesn't know how to answer a question, they could ask through an AI assistant. These kinds of tools should absolutely be part of today's digital transformation."*
- B.B.: *"If I'm going to evaluate others or use an evaluation tool in my company, I need to connect it to something that motivates people. We previously did this by linking it to incentive systems—bonuses paid to distributors or dealers. A similar system could be built around sustainability criteria: 'How well do you meet the standards we've defined?' Such incentive mechanisms, including better credit terms (like lower interest rates for higher sustainability scores), could be motivating."*

- B.T.: *“Ease of use—especially for employees—is essential. For example, we couldn’t even gather for three weeks to collect data. That’s why we want to integrate a digital platform—so everyone can access the same data in real time. Especially for sustainability managers who have to prepare reports, access must be easy. If we don’t measure what we’re doing, we can’t monitor it; if we can’t monitor it, we can’t improve. At the very least, this is necessary for a company’s business continuity. But beyond that, we also talk about reputation management and transparency.”*
- İ.P.: *“Scoring is very important—maybe it’s my engineering mindset. Numbers are everything for me; they float around in my head. For example, anything over 80 is green. I really strive to get to 81. In order to set goals, everything needs to be scored. I need to be able to say to my team: ‘This is where we need to be in 2025.’ So having quantitative data is essential.”*
- M.T.: *“Maybe some sort of multiplayer scoring system can be used to calculate an average that reflects the overall sustainability standing—especially meaningful from a consumer’s perspective. Not like ‘environmental good, social bad’—just an overall average. Then we can at least know whether it’s good, bad, average, or an area for improvement. I think a scoring system could be very useful. At least it gives us something to interpret.”*
- E.T.: *“It must be digital—that’s a given. Performance should be trackable through digital platforms. Benchmarking is also important. I want to see: ‘Okay, I used this much water—but what’s the global benchmark? What’s the benchmark in Türkiye?’ That’s valuable. And to make it a part of everyday life, gamification might help. Like, ‘Today I walked this many steps and emitted this much carbon. I did an online meeting, which changed my carbon footprint by this much.’ These things could make it more engaging.”*
- N.Ç.: *“First of all, it’s important that everyone speaks the same language. One of the key issues in running our sustainability model is ensuring trackability and accessibility. We follow everything through digital platforms and ensure visibility with clear and open communication. Internal communication is also critical. If we can use digital transformation correctly, the model works. Proper digital governance is a must-have. Nowadays, we’re talking about*

*ChatGPT and AI. If a model is still running manually, it will eventually stall—and it won't be accountable.”*

- Ö.B.: *“There absolutely must be digital tools and a proper program infrastructure. Many indices already use such structures. One of the most prestigious examples is the Dow Jones Index. It includes many KPIs, and performance is scored accordingly. You can see comparisons across the sector and identify the best performers. I think the model should be sector-specific—different sectors should have tailored structures. It's similar to how the Borsa Istanbul works. Such a system should help companies understand where they need to improve. The evaluation report should say: ‘This area has room for improvement,’ not just ‘you failed here.’ That kind of report or system would be very beneficial, in my opinion.”*

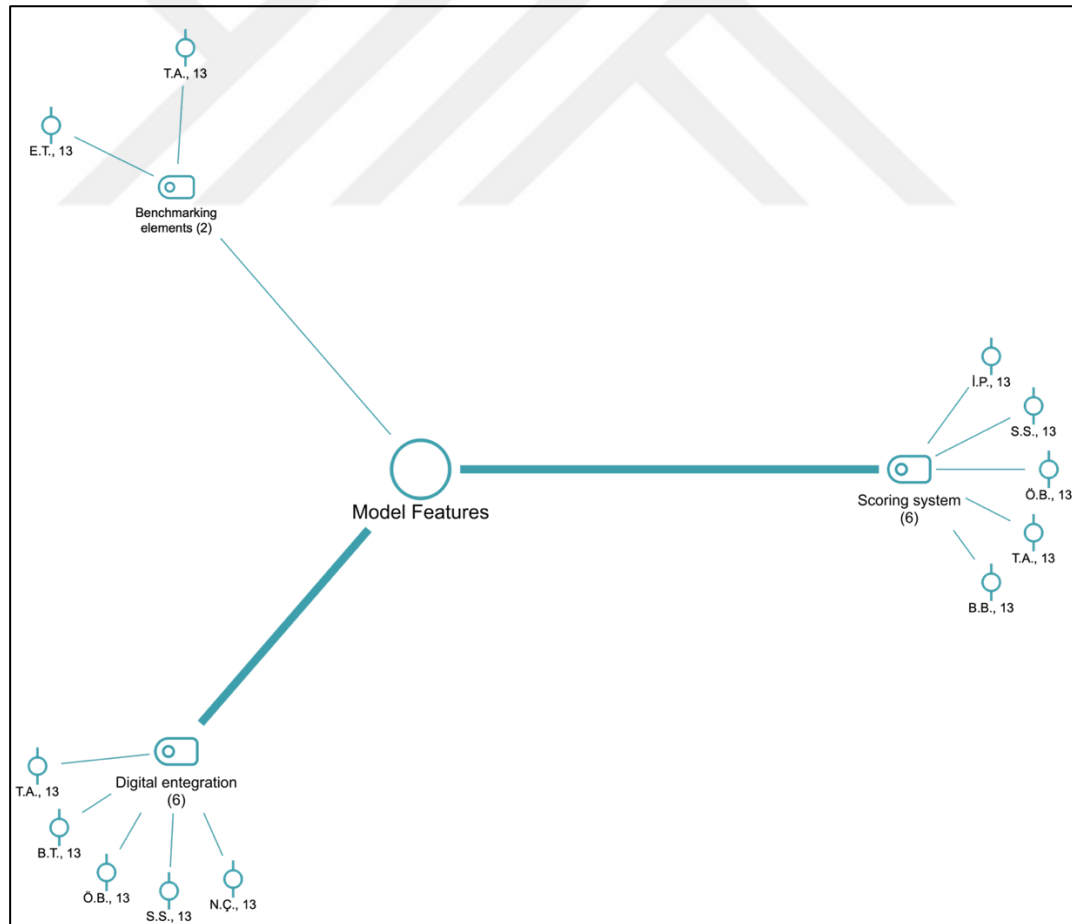


*Figure 24. Sub-code frequencies of model features*

#### **4.6 Proposed Model for Evaluating Corporate Sustainability Performance (CSP)**

The proposed CSP evaluation model is grounded in both the empirical findings of this research and the broader literature on sustainability performance measurement. The findings highlighted that measuring sustainability remains a complex challenge due to its multi-dimensional nature and lack of a universally accepted framework. Many participants in the study emphasized the absence of a standard, actionable model that translates sustainability ideals into practical assessment tools. In line with this, the model integrates the Environmental, Social, and Governance (ESG) dimensions, which were consistently emphasized across interviews as the foundational structure for sustainability evaluation. This structure also reflects global sustainability paradigms such as GRI and the Integrated Reporting framework, which participants often referred to when discussing existing reporting expectations.

Most importantly, the strategic nature of sustainability performance and its importance in corporate decision-making were highlighted by the participants. They mentioned that now the sustainability metrics are increasingly used not just for external reporting, but also for internal decision-making, resource allocation, and strategic alignment. This perspective aligns with the stakeholder theory that emphasizes the significance of meeting the varying expectations of investors, regulators, employees, and communities. The model was specifically designed to be stakeholder-focused, considering the needs and perspectives of both internal and external stakeholders.

It was clear that ESG is widely accepted among participants as a framework. But its practical application remains inconsistent among different organizations. One important observation was that current reporting frameworks often lack sectoral relevance or practical usefulness for organizations. The proposed model addresses this by offering a flexible, modular structure that has an universal core structure and also can be customized to industry-specific requirements. The participants repeatedly emphasized this balance between generalizability and specificity as a desirable feature.

Also, the proposed model reflects a broader need for strategic alignment. Several participants noted that CSP measurement should be closely tied to performance management systems, suggesting that this enables companies to treat sustainability indicators with the same level of importance as financial KPIs. Some participants already use such integrated dashboards, and their experiences confirmed the benefits of embedding ESG metrics into strategic planning processes. The model's design,

therefore, emphasizes compatibility with internal management tools such as the Balanced Scorecard and corporate dashboards.

**4.6.1 ESG dimensions and key performance indicators.** The model organizes indicators under the ESG framework, mirroring both the literature and participant preferences. In interviews, participants referred to environmental issues such as emissions, water and energy use, and waste as the most quantifiable and widely tracked indicators. Social aspects such as employee well-being, diversity, and community engagement were frequently cited as essential yet often underreported areas. Governance, while less tangible, was acknowledged as the foundation for achieving sustainable outcomes across the other two dimensions.

Environmental indicators identified by participants included greenhouse gas emissions, energy efficiency, water usage, and waste management. These were consistently viewed as baseline metrics for any sustainability performance model. In particular, participants from industrial sectors emphasized emissions and resource efficiency as strategic concerns, both from a regulatory and reputational standpoint. Some also mentioned emerging concerns such as biodiversity and land use, particularly in sectors with direct environmental impacts.

Social indicators included employee health and safety, labor practices, diversity and inclusion, training, and community involvement. Participants from mostly manufacturing sector stressed occupational safety, while others in service sectors highlighted diversity and well-being. The inclusion of supply chain practices and community investment emerged as key expectations from external stakeholders, reinforcing the need to broaden the scope of social indicators.

Governance indicators were highlighted as critical by participants in leadership roles. They emphasized board composition, ethical conduct, compliance, and sustainability oversight structures as key performance areas. Many acknowledged that without strong governance, progress on environmental and social fronts would remain fragmented. Several mentioned that board-level sustainability committees or executive responsibility for ESG are essential indicators of serious commitment.

**4.6.2 Adaptive and modular structure of the model.** The participants have repeatedly stated their preference for a model that provides both consistency and personalization. The most frequently mentioned recommendation was the involvement

of sector-specific modules that build on a core set of indicators. This suggests that the proposed model should maintain a level of comparability but remain relevant across industries as well.

Accordingly, the proposed model provides a structure that consists of both a universal core set of ESG indicators applicable to all sectors and additional modules that can be tailored to specific industries. For example, a manufacturing company may include metrics on resource sourcing or lifecycle emissions, while a technology firm may include data privacy or digital ethics. This approach is in line with the recommendations of the participants who stated that sectoral indicators should not be ignored in standardization efforts.

Also, a phased implementation structure aligned with organizational maturity is introduced in the model. Most of the participants indicated that sustainability models often assume a level of capacity and data availability that is unrealistic for smaller firms. In order to address this problem, the model consists of three levels - Basic, Intermediate, and Advanced. Each level has a wider and more complex set of indicators as it progresses. This layered approach allows organizations to scale their sustainability practices incrementally without being overwhelmed at the outset.

**4.6.3 Strategic integration into management systems.** Many participants talked about the importance of linking sustainability to business strategy. Both executives and sustainability managers said that sustainability indicators shouldn't stand alone, but should be connected to overall company goals. Some participants mentioned that they had already started using ESG metrics in tools like the Balanced Scorecard, aligning them with financial and operational targets. These examples helped shape the model, making sure it supports the integration of ESG performance into business planning and decision-making.

Participants also pointed out that stakeholders—especially investors and regulators—now expect companies to show how ESG factors influence their strategic decisions. Because of this, the model is designed not only to support internal alignment but also to help with clear communication and accountability to external audiences. This reflects the view that sustainability shouldn't be treated as a separate area, but rather as a perspective that applies to all aspects of business operations.

**4.6.4 Usability and digital integration for enhanced accessibility.** Many participants stressed that any sustainability model must be easy to use. They often mentioned limited resources, challenges in collecting data, and the complexity of existing frameworks as key obstacles to putting such models into practice. To respond to these concerns, the model includes practical features like simple scoring systems, benchmarking tools, and a digital dashboard to make it more accessible and manageable.

Participants found the idea of a simplified scoring system particularly appealing. They said it could make it easier to explain sustainability performance to both internal teams and external stakeholders. Some even suggested using visual tools such as colored dashboards or performance badges to enhance engagement.

Digital integration was another key point raised by participants. Many participants emphasized the need for systems that automate data collection, minimize manual work, and connect with existing enterprise software. The model's digital dashboard was designed with these needs in mind, offering real-time tracking, automated reports, and the ability to analyze trends over time. Participants also highlighted the value of comparing results with industry standards, which the model supports through external data sources and sector-based benchmarks.

In summary, the model brings together the shared insights of stakeholders who both use and benefit from sustainability evaluation systems. It aims to balance academic depth with practical ease of use, offering a realistic and effective framework for assessing corporate sustainability performance in a variety of organizational contexts.

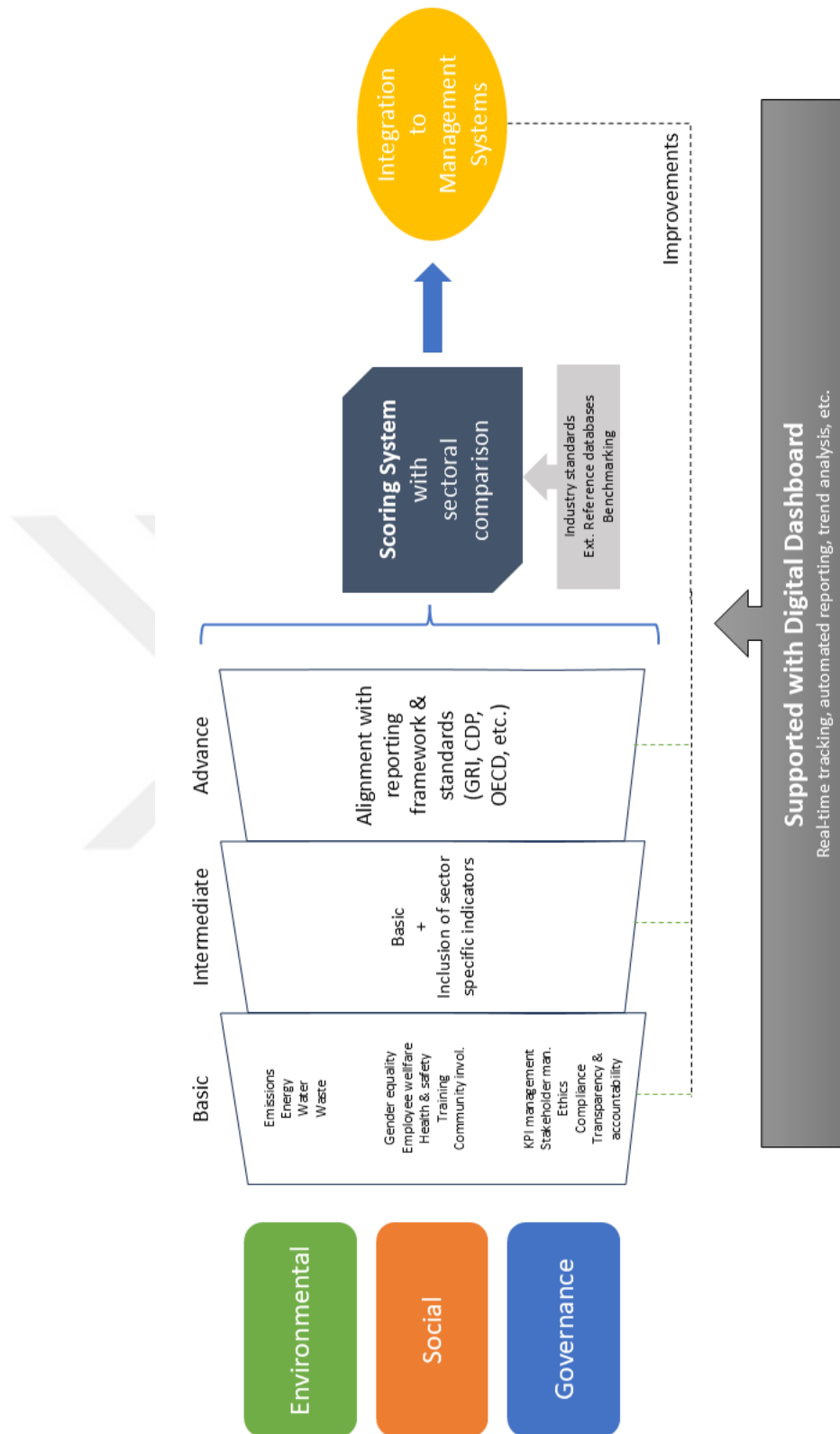


Figure 25. Proposed model for CSP evaluation

## Chapter 5

### Discussion

In recent decades, the growing prominence of sustainability as a strategic priority has transformed the way corporations are evaluated by their stakeholders. In this context, the ability to systematically measure and manage corporate sustainability performance (CSP) has become a fundamental expectation—not only for accountability, but also for driving value creation, mitigating risks, and enhancing long-term resilience (Epstein & Roy, 2001; Searcy, 2012). However, as numerous studies have highlighted, assessing sustainability performance is a methodologically and conceptually complex task (Aras et al., 2017; Silva et al., 2019). The findings of this study reinforce that complexity, demonstrating that while the Environmental, Social, and Governance (ESG) pillars are widely acknowledged as the foundation for CSP, their practical evaluation faces several persistent challenges. These include indicator ambiguity, data scarcity, internal resistance, and the need for strategic alignment—all themes that echo and expand upon the existing body of literature.

One of the clearest takeaways from this research is the strong consensus among participants regarding the relevance and necessity of adopting a holistic, ESG-based framework for sustainability performance evaluation. The empirical data—particularly the coding frequencies for the Performance Indicators theme—revealed that environmental (35%), social (34%), and governance (27%) dimensions are prioritized nearly equally among stakeholders. This is in direct alignment with the theoretical foundation established by frameworks such as the Triple Bottom Line (Elkington, 1997) and contemporary ESG models that emphasize a balanced evaluation of non-financial factors (Kühnen & Hahn, 2015). Notably, this parity across dimensions was not simply theoretical but emerged organically from participants' responses, suggesting that the ESG structure resonates deeply with practitioners across sectors. This is also in line with studies that argue sustainability should not be limited to ecological outcomes but should account for broader societal and institutional responsibilities (Freeman, 2010; Moldan et al., 2012).

Moreover, participants' discussions about the need for clear and applicable indicators closely reflect scholarly critiques of existing measurement tools. Many participants pointed to the proliferation and complexity of sustainability standards—such as those provided by GRI, CDP and the SDGs—as a key challenge in

operationalizing sustainability assessments. This finding is consistent with Siew (2015), who points out that although sustainability reports are now more common, they have also become more complex and varied—sometimes making it harder to understand their main purpose. Participants in this study made similar comments, saying that existing frameworks often lack clear, sector-specific guidance and don't explain how to turn broad goals into measurable results. This supports the argument made by Singh et al. (2012) and Schneider and Meins (2012), who call for frameworks that are not only comprehensive but also practical—providing clear direction without becoming too difficult to use.

One of the key contributions of this study is its view of measurement not just as a technical task, but as part of a broader organizational process that connects with strategy, culture, and internal capabilities. Many participants stressed how sustainability metrics influence strategic decisions, especially in areas like risk management, brand image, and investor expectations. This supports earlier work by Epstein and Widener (2010) and Hayward et al. (2013), who argue that sustainability metrics are becoming a core part of strategic management. In fact, several participants said that sustainability reporting is used not only for sharing information externally but also for driving internal alignment and change. As one participant put it, “you can't manage what you can't measure,” reflecting the view that sustainability data is essential to strategic leadership. This also aligns with Searcy's (2012) idea of corporate sustainability performance (CSP) as a type of management information system that helps create value for stakeholders.

Even though most participants agreed that measuring sustainability performance is important, they also talked about serious challenges—especially for small and medium-sized businesses (SMEs). They mentioned problems like limited digital tools, disconnected data systems, and unclear responsibilities when it comes to reporting. These issues are similar to what Rita et al. (2018) and Hillary (2004) found in their studies, showing that SMEs often don't have enough resources to fully include sustainability in their operations. Some participants also pointed to new regulations—like those from the European Green Deal—as a major reason why companies now have to pay more attention to sustainability (Özkadi & Tavukçu, 2021). This growing pressure supports what Maas et al. (2016) describe as the institutionalization of CSP, where companies are expected to connect sustainability with financial reporting and

public communication. Therefore, the findings suggest that CSP is no longer voluntary or aspirational; it has become a formalized expectation across markets and industries.

One of the more interesting findings from the study is that participants saw CSP measurement as serving two main purposes at once: helping companies improve from within and showing accountability to the outside world. For instance, some interviewees said that using sustainability metrics helped them spot internal problems and find new ways to improve, while others said these metrics helped show transparency and ethical behavior to investors, regulators, and customers. This idea reflects the view of Lackmann et al. (2012), who found that CSP reporting can affect both investor decisions and how companies are governed. It also fits with Freeman's (2010) stakeholder-focused approach to sustainability, which sees performance evaluation not just as a reporting tool, but as a way to build value together with different stakeholders. In this context, the study supports the idea that CSP models should serve more than one purpose, balancing strategic goals, ethical responsibilities, and the need for clear communication.

Alongside supporting several ideas from the literature, this study also offers practical insight into what helps CSP measurement work in real settings. Many participants—especially those from smaller organizations—talked about the need for models that are simple, clear, and easy to use. They often mentioned the importance of flexible tools that can grow with the organization and be tailored to different industries. This view echoes the work of Schöggel et al. (2017) and Ferreira & Silva (2016), who suggest using layered models that include both basic and more advanced indicators. Such flexibility not only makes models more relevant but also helps companies build their approach over time. Participants also pointed out that measurement systems should be digital—able to connect data from across the organization and provide real-time feedback. This reflects a broader shift toward digital tools and analytics in CSP, as discussed by Onat et al. (2016) and Bottani et al. (2017), particularly in relation to MCDM and composite indicator models.

Finally, the findings show that there is a growing expectation for CSP measurement to do more than just provide static scores. Participants were not only interested in meeting requirements or comparing performance—they wanted useful insights that could help shape company policies, motivate employees, and support broader cultural shifts. From this perspective, the model introduced in this study is more than just a measurement tool; it can serve as a strategic resource. This idea aligns

with Morioka and de Carvalho (2016), who emphasize the importance of embedding sustainability into everyday business activities. Overall, the results suggest that for CSP evaluation to be truly effective, it needs to be ongoing, inclusive, and fully integrated into the company's management processes.

In summary, the discussion shows clear links between the study's findings and existing academic work, while also pointing to new directions for both theory and practice. By focusing on ESG dimensions, acknowledging real-world implementation challenges, and highlighting the strategic value of measurement, this study offers a more detailed view of how corporate sustainability performance can be assessed in today's complex business landscape. The following sections explore the study's contributions to theory, its practical implications for managers, and areas for future research.

### **5.1 Theoretical Contribution**

This study suggests a new model for evaluating corporate sustainability performance (CSP), aiming to fill certain gaps that still exist in the literature. The model brings together core sustainability ideas, considers what matters to stakeholders, and is designed to work in different kinds of organizations. It connects theory with real-life experiences, showing that academic thinking can be improved through what's happening in practice.

One of the model's main strengths is how it reinterprets the Triple Bottom Line (TBL) framework (Elkington, 1997). While the original TBL highlights economic, environmental, and social dimensions, this model emphasizes governance instead of economics as a central pillar—placing it alongside environmental and social performance. This approach reflects recent arguments that effective sustainability is not only about outcomes, but also about how decisions are made and implemented within organizations (Schneider & Meins, 2012; Kühnen & Hahn, 2015). By including governance, the model brings attention to accountability, transparency, and ethical leadership as essential parts of sustainable business, not just supportive elements.

The model also builds on stakeholder theory by giving different groups a role in shaping what is measured. Instead of treating stakeholder views as background information, it includes them in deciding which indicators matter (Freeman, 2010; Amui et al., 2017). This reflects a growing view that sustainability should be shaped by those affected by it (Morioka & de Carvalho, 2016).

Another contribution is the model's ability to connect big-picture thinking with real-world tools. Many existing frameworks are either too general or too technical. This model tries to balance both, combining conceptual clarity with practical use (Singh et al., 2012; Maas et al., 2016). It uses both numbers and narrative, so it can be applied in different settings.

The model is also adaptable. It has a basic set of indicators but allows organizations to add more, depending on their size or sector. This helps avoid overwhelming users, especially in smaller companies (Siew, 2015; Rodrigues et al., 2016; Ferreira & Silva, 2016).

Importantly, the model can change over time. It's not fixed. As new issues emerge—like circular economy or digital ethics—they can be added. This supports the idea that CSP tools should grow with the world around them (Searcy, 2014; Ingwersen et al., 2014).

Finally, the model includes ways to increase trust. By linking indicators to real data and encouraging outside input, it aims to reduce the gap between what companies say and what they do (Boiral & Henri, 2017; Lackmann et al., 2012).

In short, the model adds to theory by making sustainability performance more inclusive, flexible, and grounded in how organizations actually work.

## **5.2 Managerial Implications**

The CSP model developed in this study helps managers deal with common problems they face when trying to include sustainability in daily business. With increasing pressure from regulations, investors, and customers, companies need tools that are simple, reliable, and easy to apply—especially small and medium-sized firms (Epstein & Widener, 2010; Searcy, 2012).

One major issue is turning broad sustainability goals into real actions. Many participants said there's often a gap between strategy and what happens on the ground (Silva et al., 2019; Baumgartner & Rauter, 2017). This model helps by showing a clear path from setting goals to measuring progress. For SMEs, which often lack formal systems, this kind of guidance is especially useful (Hillary, 2004; Revell et al., 2010).

The model's structure also makes it easier for managers to start simple and grow over time. It includes basic ESG indicators but lets companies add more depending on their needs. This flexibility helps balance the need for standard reporting with internal relevance (Schöggl et al., 2017).

Another point is that sustainability is often disconnected from other parts of the business. People in different departments may not talk to each other about it. The model encourages shared tools like dashboards or scorecards, which help bring everyone onto the same page (Bocken et al., 2014; Lozano, 2015).

Several participants also raised issues with scattered data and manual reporting. The model is designed to work with existing IT systems, so data can be collected automatically and used in real time. This makes reporting easier and helps managers act more quickly when needed (Onat et al., 2016).

Externally, companies often struggle to meet different reporting demands. The model uses indicators that are aligned with major frameworks like GRI and CSRD, making it easier to respond to requests from investors or regulators (Rita et al., 2018).

The model also encourages companies to review their progress regularly. It supports setting goals, tracking how things are going, and adjusting when needed. This idea follows the plan-do-check-act (PDCA) cycle used in many management systems (Lozano, 2015; Willard, 2012). It helps companies stay flexible and improve over time.

Some participants said it's important to link sustainability efforts to employee rewards. The model makes this easier by providing clear indicators that can be tied to bonuses, team goals, or recognition programs. Although not yet widespread, this practice is growing, and research shows it can boost motivation and innovation (Boiral & Henri, 2017).

In short, the model gives managers a practical way to make sustainability part of everyday business—not just a report, but a tool to guide real action.

### **5.3 Limitations and Future Research**

Although the proposed Corporate Sustainability Performance (CSP) model presents a useful and well-rounded framework, it's important to recognize the study's limitations and consider areas for future research. Reflecting on the study's scope, methods, and context not only adds to its academic strength but also helps identify ways to improve the model and test how well it works in different sectors and types of organizations. This section outlines several key limitations identified during the research process and proposes targeted research avenues that could enhance the theoretical robustness, empirical validity, and practical relevance of the model in the future.

One of the most notable limitations concerns the qualitative nature of the research methodology. The model was primarily developed and validated through in-depth interviews with a relatively small number of participants drawn from select industries and organizational types. While this method allowed for rich, context-sensitive insights into sustainability evaluation practices, it also limits the generalizability of the findings. The purposive sampling approach, while suitable for exploratory research, may introduce bias by over-representing certain perspectives and under-representing others. For instance, despite efforts to ensure diversity, participants were predominantly from medium to large enterprises operating in relatively developed markets. This skew may not adequately reflect the realities of micro-enterprises, organizations in emerging economies, or those in high-risk or informal sectors. Therefore, future research should aim to test and refine the model across a broader and more representative sample, potentially using large-scale quantitative surveys or mixed-method designs to validate its applicability and utility in diverse contexts (Creswell & Plano Clark, 2011).

Another limitation relates to the absence of longitudinal data. Sustainability is an inherently dynamic phenomenon, shaped by changes in regulatory environments, stakeholder expectations, market conditions, and technological innovations. The current model, while designed to be adaptable, was evaluated in a cross-sectional context. As such, it does not capture the evolution of sustainability performance over time, nor does it account for feedback loops, organizational learning, or the impact of specific interventions. Longitudinal studies are needed to assess the model's stability, responsiveness, and predictive power. For instance, researchers could track a cohort of organizations over multiple reporting cycles to examine how the implementation of the model influences actual performance outcomes and decision-making practices. Such studies would contribute to the growing literature on sustainability trajectories and maturity models (Baumgartner & Rauter, 2017; Lozano, 2015), and provide empirical grounding for the model's long-term effectiveness.

One more limitation highlighted in this study has to do with the availability and quality of data, something that came up often during the interviews. Especially for small and medium-sized businesses, collecting reliable and consistent data on sustainability is still a big hurdle. Some lack the right digital tools, others don't have trained staff, and in many cases, systems inside the company just don't talk to each other. Although the model tries to focus on indicators that are easier to access and use,

it still assumes that companies have at least some level of digital readiness and data skills. Where this isn't the case, putting the model into practice might be harder than expected. Future studies could explore how to connect the model with digital tools that help with collecting and checking data—things like IoT sensors, cloud dashboards, or machine learning could make a big difference. There's already some work pointing in this direction, like Bottani et al. (2017) and Onat et al. (2016), who show how tech can help monitor sustainability in real time and support faster decision-making.

Moreover, there is a need to investigate how the model interacts with organizational culture and change processes. Sustainability performance is not merely a matter of tracking indicators—it involves shifts in mindset, values, and institutional arrangements. The findings of this study indicate that organizations with a strong culture of learning, collaboration, and ethical leadership are more likely to adopt and benefit from sustainability evaluation tools. However, the model itself does not directly address the enablers and barriers of organizational change. Future studies could explore how implementation of the model influences, and is influenced by, organizational culture, leadership practices, and employee engagement. Integrating insights from organizational behavior and change management literature (e.g., Kotter, 2012; Schein, 2010) would enrich the model's conceptual depth and practical applicability.

Finally, the normative underpinnings of the model—while largely aligned with global sustainability standards—require further scrutiny in light of emerging critiques. Scholars have argued that many sustainability frameworks are shaped by Western-centric values and assumptions, potentially overlooking alternative conceptions of development, well-being, and social justice (Escobar, 1995; Banerjee, 2003). While this study attempted to adopt a pluralistic and inclusive perspective, future research should critically examine how the model resonates with diverse cultural, political, and epistemological contexts. Participatory action research in underrepresented regions or with marginalized stakeholder groups could help surface alternative indicators and value systems, contributing to a more decolonized and democratized understanding of CSP.

In conclusion, acknowledging the limitations of the current model does not diminish its value; rather, it sets the stage for its evolution and refinement. The challenges outlined above—ranging from methodological constraints and implementation barriers to contextual specificity and cultural assumptions—highlight

the complexity of sustainability evaluation and the need for ongoing inquiry. By addressing these limitations through targeted, interdisciplinary, and collaborative research, scholars and practitioners can ensure that the CSP model remains responsive to the changing demands of corporate governance, stakeholder accountability, and environmental stewardship. Future iterations of the model have the potential to be not only more accurate and inclusive but also more transformative—supporting organizations in navigating the complex journey toward genuine sustainability.



## REFERENCES

- Acquaye, A., Feng, K., Oppon, E., Salhi, S., Ibn-Mohammed, T., Genovese, A., & Hubacek, K. (2017). Measuring the environmental sustainability performance of global supply chains: A multi-regional input-output analysis for carbon, sulphur oxide and water footprints. *Journal of Environmental Management*, 187, 571–585.
- Ağan, Y., Kuzey, C., Acar, M.F., & Açıkgoz, A. (2016). The relationships between corporate social responsibility, environmental supplier development, and firm performance. *Journal of Cleaner Production*, 112(3), 1872-1881.
- Altuntaş, C., & Türker, D. (2012). Sürdürülebilir Tedarik Zincirleri: Sürdürülebilirlik Raporlarının İçerik Analizi. *Dokuz Eylül Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 14(3), 39-64.
- Ahi, P., & Searcy, C. (2015). An analysis of metrics used to measure performance in green and sustainable supply chains. *Journal of Cleaner Production*, 86, 360-377.
- Akadiri, P.O., Olomolaiye, P.O., & Chinyio, E.A. (2013). Multi-criteria evaluation model for the selection of sustainable materials for building projects. *Automation in Construction*, 30, 113–125.
- Amui, L.B.L., Jabbour, C.J.C., de Sousa Jabbour, A.B.L., & Kannan, D. (2017). Sustainability as a dynamic organizational capability: a systematic review and a future agenda toward a sustainable transition. *Journal of Cleaner Production*, 142, 308–322.
- Ansari, Z. N., & Kant, R. (2017). A state-of-art literature review reflecting 15 years of focus on sustainable supply chain management. *Journal of Cleaner Production*, 142, 2524-2543.
- Aras, G., Tezcan, N., Kutlu Furtuna, O., & Hacıoglu Kazak, E. (2017). Corporate sustainability measurement based on entropy weight and TOPSIS: A Turkish banking case study. *Meditari Accountancy Research*, 25 (3), 391-413.
- Aras, G., Tezcan, N., & Kutlu Furtuna, O. (2018). Multidimensional comprehensive corporate sustainability performance evaluation model: Evidence from an emerging market banking sector. *Journal of Cleaner Production*, 185, 600-609.
- Atkinson, A. A., Waterhouse, J. H., & Wells, R. B. (1997). A Stakeholder Approach to Strategic Performance Measurement. *Sloan Management Review*, 38, 26-27.

- Babcock, P. (2013). Rethinking the Foundations of Sustainability Measurement: The Limitations of the Environmental Sustainability Index (ESI). *Social Indicators Research*, 113, 133–157.
- Baltacı, A. (2018). Nitel araştırmalarda örnekleme yöntemleri ve örnek hacmi sorunsalı üzerine kavramsal bir inceleme. *BEÜ SBE Dergisi*, 7(1), 231-274.
- Banerjee, S. B. (2003). Who sustains whose development? Sustainable development and the reinvention of nature. *Organization Studies*, 24(1), 143–180.
- Bansal, P. (2005). Evolving sustainably: a longitudinal study of corporate sustainable development. *Strategic Management Journal*, 26: 197-218.
- Barata, J., Quelhas, O., Costa, H., Gutierrez, R., de Jesus Lameira, V., & Meiriño, M. (2014). Multi-Criteria Indicator for Sustainability Rating in Suppliers of the Oil and Gas Industries in Brazil. *Sustainability*, 6, 1107–1128.
- Barbosa, A. de S., Crispim da Silva, M. C. B., Bueno da Silva, L., Morioka, S. N., & de Souza, V. F. (2023). Integration of environmental, social, and governance (ESG) criteria: Their impacts on corporate sustainability performance. *Humanities and Social Sciences Communications*, 10, 410.
- Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17(1), 99–120.
- Başkale, H. (2016). Nitel araştırmalarda geçerlik, güvenirlik ve örneklem büyüklüğünün belirlenmesi. *Dokuz Eylül Üniversitesi Hemşirelik Fakültesi Elektronik Dergisi*, 9(1), 23-28.
- Baumgartner, R. J., & Rauter, R. (2017). Strategic perspectives of corporate sustainability management to develop a sustainable organization. *Journal of Cleaner Production*, 140, 81–92.
- B Corp (2019). B Lab B Impact Assessment Standards for B Corp Certification. Pennsylvania, available at: <https://www.bcorporation.net/en-us/standards/> (accessed November 5, 2023).
- Berardi, U. (2012). Sustainability Assessment in the Construction Sector: Rating Systems and Rated Buildings. *Sustainable Development*, 20, 411–424.
- Berger, R. (2015). Now I see it, now I don't: Researcher's position and reflexivity in qualitative research. *Qualitative Research*, 15(2), 219–234.
- Bilbao-Terol, A., Arenas-Parra, M., & Cañal-Fernández, V. (2012). A fuzzy multi-objective approach for sustainable investments. *Expert Systems with Applications*, 39, 10904–10915.

- Bocken, N. M. P., Short, S. W., Rana, P., & Evans, S. (2014). A literature and practice review to develop sustainable business model archetypes. *Journal of Cleaner Production*, 65, 42–56.
- Boiral, O., & Henri, J.-F. (2017). Is Sustainability Performance Comparable? A Study of GRI Reports of Mining Organizations. *Business & Society*, 56(2), 283–317.
- Bottani, E., Gentilotti, M.C., & Rinaldi, M. (2017). A Fuzzy Logic-Based Tool for the Assessment of Corporate Sustainability: A Case Study in the Food Machinery Industry. *Sustainability*, 9, 583.
- Bourne, M., Franco, M., & Wilkes, J. (2003). Corporate performance management. *Measuring Business Excellence*, 7, 15-21.
- Braun, V. & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101.
- Brundlant, G. H. (1987). *Our Common Future – Report of the World Commission on Environment and Develeopment*. United Nations.
- Bui, H.T., & Filimonau, V. (2021). A recipe for sustainable development: assessing transition of commercial foodservices towards the goal of the triple bottom line sustainability. *International Journal of Contemporary Hospitality Management*, 33(10), 3535-3563.
- Büyüközkan, G., & Çifçi, G. (2013). An integrated QFD framework with multiple formatted and incomplete preferences: A sustainable supply chain application. *Applied Soft Computing*, 13, 3931–3941.
- Büyüközkan, G., & Karabulut, Y. (2018) Sustainability performance evaluation: Literature review and future directions. *Journal of Environmental Management*, 217, 253-267.
- Caelli, K., Ray, L., & Mill, J. (2003). “Clear as mud”: Toward greater clarity in generic qualitative research. *International Journal of Qualitative Methods*, 2(2), 1–13.
- Chardine-Baumann, E., & Botta-Genoulaz, V. (2014). A framework for sustainable performance assessment of supply chain management practices. *Computers and Industrial Engineering*, 76, 138–147.
- Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. Thousand Oaks, CA: Sage.
- Clandinin, D. J., & Connelly, F. M. (2000). *Narrative inquiry: Experience and story in qualitative research*. San Francisco, CA: Jossey-Bass.
- Cone Communications & Ebiquity (2015). *Global CSR Study*.

- Costa, R., & Menichini, T. (2013). A multidimensional approach for CSR assessment: The importance of the stakeholder perception. *Expert Systems with Applications*, 40, 150–161.
- Creswell, J. W. (2007). *Qualitative inquiry & research design: Choosing among five approaches* (2nd ed.). Thousand Oaks, CA: Sage.
- Creswell, J. W. (2013). *Qualitative inquiry and research design: Choosing among five approaches* (3rd ed.). Sage.
- Creswell, J. W., & Plano Clark, V. L. (2011). *Designing and conducting mixed methods research* (2nd ed.). Sage.
- Cui, L., Zhai, M., Dai, J., Liu, Y., & Zhang, P. (2019). Assessing sustainability performance of high-tech firms through a hybrid approach. *Industrial Management & Data Systems*, 119(8), 1581-1607.
- Čuček, L., Klemes, J.J., & Kravanja, Z. (2012). A Review of Footprint analysis tools for monitoring impacts on sustainability. *Journal of Cleaner Production*, 34, 9–20.
- Dai, J., & Blackhurst, J. (2012). A four-phase AHP–QFD approach for supplier assessment: a sustainability perspective. *International Journal of Production Research*, 50, 5474–5490.
- de Almeida Guimarães, V., & Leal Junior, I.C. (2017). Performance assessment and evaluation method for passenger transportation: a step toward sustainability. *Journal of Cleaner Production*, 142, 297–307.
- Delai, I., & Takahashi, S. (2009). Corporate sustainability in emerging markets: insights from the practices reported by the Brazilian retailers. *Journal of Cleaner Production*, 47, 211-221.
- Denzin, N. K., & Lincoln, Y. S. (Eds.) (2018). *The SAGE handbook of qualitative research* (5th ed.). SAGE Publications.
- Dyllick, T., & Hockerts, K. (2002). Beyond the business case for corporate sustainability. *Business Strategy and Environment*, 11, 130-141.
- EFRA (2022). EFRA'S Due Process Procedures EU Sustainability Reporting Standard-Setting. Available at: [https://www.efrag.org/Assets/Download?assetUrl=/sites/webpublishing/SiteAssets/EFRA%2520Due%2520Process%2520Procedures\\_V04.pdf](https://www.efrag.org/Assets/Download?assetUrl=/sites/webpublishing/SiteAssets/EFRA%2520Due%2520Process%2520Procedures_V04.pdf) (accessed March 15, 2023)

- Elkington, J., (1997). *Cannibals with Forks: Triple Bottom Line of 21st Century Business*. Capstone Publishing Limited, Chichester UK.
- Epstein, M. J., & Roy, M. J. (2001). Sustainability in action. Identifying and measuring the key performance drivers. *Long. Range Plan.*, 34, 585-604.
- Epstein, M. J., & Widener, S. K. (2010). Identification and use of sustainability performance measures in decision-making. *Journal of Corporate Citizenship*, 40, 43-73.
- Erol, I., Sencer, S., & Sarı, R. (2011). A new fuzzy multi-criteria framework for measuring sustainability performance of a supply chain. *Ecol. Econ.*, 70, 1088-1100.
- Escobar, A. (1995). *Encountering development: The making and unmaking of the Third World*. Princeton University Press.
- Escrig-Olmedo, E., Fernández-Izquierdo, M.-Á., Muñoz-Torres, M.-J., & Rivera-Lirio, J.M. (2015). Fuzzy TOPSIS for an Integrative Sustainability Performance Assessment: A Proposal for Wearing Apparel Industry, in *Scientific Methods for the Treatment of Uncertainty in Social Sciences*, 31–39. Springer International Publishing.
- European Commission (2011). *A Renewed EU Strategy 2011-14 for Corporate Social Responsibility*. Brussels.
- Ferns, G., & Amaeshi, K. (2019). Struggles at the summits: Discourse coalitions, field boundaries, and the shifting role of business in sustainable development. *Business & Society*, 58(8), 1533-1571.
- Ferreira, L.M.D.F., & Silva, C. (2016). Integrating Sustainability Metrics in the Supply Chain Performance Measurement System, in *Multiple Helix Ecosystems for Sustainable Competitiveness* (Peris-Ortiz, M., Ferreira, J.J., Farinha, L., & Fernandes, N.O. eds). Springer International Publishing.
- Finlay, L. (2002). "Outing" the researcher: The provenance, process, and practice of reflexivity. *Qualitative Health Research*, 12(4), 531–545.
- Freeman, R. E. (2010). Managing for stakeholders: trade-offs or value creation. *Journal of Business Ethics*, 96, 7–9.
- Fuente, A. de la, Armengou, J., Pons, O., & Aguado, A. (2017). Multi-criteria decisionmaking model for assessing the sustainability index of wind-turbine support systems: application to a new precast concrete alternative. *Journal of Civil Engineering and Management*, 23, 194–203.

- Gadenne, D., Mia, L., Sands, J., Winata, L., & Hooi, G. (2012). The influence of sustainability performance management practices on organisational sustainability performance. *Journal of Accounting & Organizational Change*, 8, 210-235.
- García-Melón, M., Gómez-Navarro, T., & Acuña Dutra, S.Y. (2012). A combined ANP-delphi approach to evaluate sustainable tourism. *Environmental Impact Assessment Review*, 34, 41-50.
- Garcia, S., Cintra, Y., Torres, Rita de C.S.R., & Lima, F.G. (2016). Corporate sustainability management: a proposed multi-criteria model to support balanced decision-making. *Journal of Cleaner Production*, 136, 181–196.
- Ghadimi, P., Azadnia, A.H., Mohd Yusof, N., & Mat Saman, M.Z. (2012). A weighted fuzzy approach for product sustainability assessment: a case study in automotive industry. *Journal of Cleaner Production*, 33, 10–21.
- Ghadimi, P., Dargi, A., & Heavey, C. (2017). Sustainable supplier performance scoring using audition check-list based fuzzy inference system: A case application in automotive spare part industry. *Computers and Industrial Engineering*, 105, 12–27.
- Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. New York, NY: Aldine de Gruyter.
- Gopalakrishnan, K., Yusuf, Y.Y., Musa, A., Abubakar, T., & Ambursa, H.M. (2012). Sustainable supply chain management: a case study of British Aerospace (BAE) Systems. *International Journal of Production Economics*, 140 (1), 193-203.
- Govindan, K., Khodaverdi, R., & Jafarian, A. (2013). A fuzzy multi criteria approach for measuring sustainability performance of a supplier based on triple bottom line approach. *Journal of Cleaner Production*, 47, 345-354.
- Goyal, P., Rahman, Z., & Kazmi, A.A. (2013). Corporate sustainability performance and firm performance research: Literature review and future research agenda. *Management Decision*, 51, 361–379.
- GRI (2021). *Global Reporting Initiative Universal Standards*. Amsterdam, available at: <https://www.globalreporting.org/how-to-use-the-gri-standards/gri-standards-english-language/> (accessed November 5, 2022).
- Grandar, A., & Purcell, J. (2012). *A Guide for Assurance on SME Sustainability Reports*. CPA.

- Guba, E. G., & Lincoln, Y. S. (1982). Epistemological and methodological bases of naturalistic inquiry. *Educational Communication and Technology Journal*, 30 (4), 233-252.
- Gunasekaran, A., Irani, Z., & Papadopoulos, T. (2014). Modelling and analysis of sustainable operations management: certain investigations for research and applications. *Journal of the Operational Research Society*, 65, 806–823.
- Güner, S., & Çoşkun, E. (2013). Environmental Perceptions of Small and Medium Sized Enterprises and the Effect of Buyer-Supplier Relationships on Environmental Initiatives. *Ege Academic Review*, 13(2), 151-168.
- Hammersley, M., & Atkinson, P. (1995). *Ethnography: Principles in practice* (2nd ed.). London, UK: Routledge.
- Hansen, E.G., & Schaltegger, S. (2016). The Sustainability Balanced Scorecard: A Systematic Review of Architectures. *Journal of Business Ethics*, 133, 193–221.
- Hayward, R., Lee, J., Keeble, J., McNamara, R., Hall, C., Cruse, S. (2013). The UN Global Compact-Accenture CEO Study on Sustainability 2013: Architects of a Better World.
- Herva, M., & Roca, E. (2013). Review of combined approaches and multi-criteria analysis for corporate environmental evaluation. *Journal of Cleaner Production*, 39, 355–371.
- Hillary, R. (2004). Environmental management systems and the smaller enterprise. *Journal of Cleaner Production*, 12(6) 561–569.
- Hsu, C.-W., Lee, W.-H., & Chao, W.-C. (2013). Materiality analysis model in sustainability reporting: a case study at Lite-On Technology Corporation. *Journal of Cleaner Production*, 57, 142–151.
- Hsu, L. C., Ou, S. L., & Ou, Y. C. (2015). A Comprehensive performance evaluation and ranking methodology under a sustainable development perspective. *Journal of Business Economics and Management*, 16(1), 74-92.
- Idayu, N. Z. N., & Lazim, A. (2012). Evaluation of sustainable development indicators fuzzy topsis based on subjective and objective weights. *IIUM Eng. J.*, 13(1), 13-25.
- Ingwersen, W., Cabezas, H., Weisbrod, A.V., Eason, T., Demeke, B., Ma, X., Hawkins, T.R., Lee, S.J., Bare, J.C., & Ceja, M. (2014). Integrated Metrics for Improving the Life Cycle Approach to Assessing Product System. *Sustainability*, 6, 1386–1413.

- Ingwersen, W. W., & Stevenson, M. J. (2012). Can we improve the identification of sustainability performance indicators in life cycle assessment? *Journal of Industrial Ecology*, 16(4), 638–652.
- International Institute for Sustainable Development (IISD), 1992. Business Strategy for Sustainable Development: Leadership and Accountability for the '90s. IISD, Winnipeg, Canada.
- IFC (2012). International Finance Corporation Performance Standards for Environmental and Social Sustainability. Washington D.C, available at: <https://www.ifc.org/en/insights-reports/2012/ifc-performance-standards> (accessed October 15, 2023).
- International Labour Standards (2023). International Labour Organization. Geneva, available at: <https://www.ilo.org/global/lang--en/index.htm> (accessed September 10, 2023).
- Kamali M., & Hewage, K. (2017). Development of performance criteria for sustainability evaluation of modular versus conventional construction methods. *Journal of Cleaner Production*, 142, 3592-3606.
- Kamble, S.S., Gunasekaran, A., & Gawankar, S.A. (2019). Achieving sustainable performance in a data-driven agriculture supply chain: A review for research and applications. *International Journal of Production Economics*, 219, 179-194.
- Kim, D.B., Shin, S.-J., Shao, G., & Brodsky, A. (2015). A decision-guidance framework for sustainability performance analysis of manufacturing processes. *International Journal of Advanced Manufacturing Technology*, 78, 1455–1471.
- Kolk, A., & Pinkse, J. (2006). Stakeholder mismanagement and corporate social responsibility crises. *European Management Journal*, 24(1), 59–72.
- Kolak, O.I., & Feyzioglu, O. (2016). Sustainability Performance Evaluation of Transportation Networks Using MCDM Analysis. *World Congress on Engineering*, 42-47. Londrina, Brazil.
- KOSGEB (2023). Türkiye'deki KOBİ'lere İlişkin Bazı İstatistikî Göstergeler. Türkiye, available at: [https://webdosya.kosgeb.gov.tr/Content/Upload/Dosya/Kurumsal/Raporlar/T%C3%BCrkiye'de\\_KOB%C4%B0'lere\\_%C4%B0li%C5%9Fkin\\_Baz%C4%B1\\_%C4%B0statistikî\\_G%C3%B6stergeler\\_May%C4%B1s\\_2023.pdf](https://webdosya.kosgeb.gov.tr/Content/Upload/Dosya/Kurumsal/Raporlar/T%C3%BCrkiye'de_KOB%C4%B0'lere_%C4%B0li%C5%9Fkin_Baz%C4%B1_%C4%B0statistikî_G%C3%B6stergeler_May%C4%B1s_2023.pdf) (accessed June 10, 2023).
- Kotter, J. P. (2012). *Leading change*. Harvard Business Press.

- Kumar, A., Sah, B., Singh, A.R., Deng, Y., He, X., Kumar, P., & Bansal, R.C. (2017). A review of multi criteria decision making (MCDM) towards sustainable renewable energy development. *Renewable and Sustainable Energy Reviews*, 69, 596–609.
- Kühnen, M., & Hahn, R. (2015). A meta-review of corporate sustainability reporting: Literature review and implications for future research. *Journal of Cleaner Production*, 108, 41–56.
- Kvale, S. & Brinkmann, S. (2009). *InterViews: Learning the craft of qualitative research interviewing* (2nd ed.). Sage Publications.
- Kylili, A., Fokaides, P.A., & Lopez Jimenez, P.A. (2016). Key Performance Indicators (KPIs) approach in buildings renovation for the sustainability of the built environment: A review. *Renewable and Sustainable Energy Reviews*, 56, 906–915.
- Lee, K.-H., & Farzipoor Saen, R. (2012). Measuring corporate sustainability management: A data envelopment analysis approach. *International Journal of Production Economics*, 140, 219–226.
- Li, T., Zhang, H., Yuan, C., Liu, Z., & Fan, C. (2012). A PCA-based method for construction of composite sustainability indicators. *International Journal of Life Cycle Assessment*, 17, 593–603.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Newbury Park, CA: Sage.
- Liu, G. (2014). Development of a general sustainability indicator for renewable energy systems: A review. *Renewable and Sustainable Energy Rev.*, 31, 611–621.
- Lozano, R. (2015). A holistic perspective on corporate sustainability drivers. *Corporate Social Responsibility and Environmental Management*, 22(1), 32–44.
- Maas, K., Schaltegger, S., & Crutzen, N. (2016). Integrating corporate sustainability assessment, management accounting, control, and reporting. *Journal of Cleaner Production*, 136, 237–248.
- Malesios, C., De, D., Moursellas, A., Dey, P.K., and Evangelinos, K. (2021). Sustainability performance analysis of small and medium sized enterprises: Criteria, methods and framework. *Socio-Economic Planning Sciences*, 75, 100993.
- Maltz, E., Bi, H.H., & Bateman, M. (2016). Benchmarking sustainability performance: the next step in building sustainable business models. *Journal of Public Affairs*, 18 (3), 1606-1623.

- Medel-González, F., García-Ávila, L.F., Salomon, V.A.P., Marx-Gómez, J., & Hernández, C.T. (2016). Sustainability performance measurement with Analytic Network Process and balanced scorecard: Cuban practical case. *Production* 26, 527-539.
- Merriam, S. B. (1998). *Qualitative research and case study applications in education*. San Francisco, CA: Jossey-Bass.
- Merriam, S. B. (2009). *Qualitative research: A guide to design and implementation*. San Francisco, CA: Jossey-Bass.
- Miles, M. B., & Huberman, M. A. (1994). *Qualitative Data Analysis: A Sourcebook of New Methods*. Beverly Hills, CA: SAGE Publication.
- Miller, P., de Barros, A.G., Kattan, L., & Wirasinghe, S.C. (2016). Analyzing the sustainability performance of public transit. *Transportation Research*, 44, 177–198.
- Moldan, B., Janoušková, S., & Hák, T. (2012). How to understand and measure environmental sustainability: Indicators and targets. *Ecological Indicators*, 17, 4–13.
- Morioka, S. N., & Carvalho, M. M. De (2016). A systematic literature review towards a conceptual framework for integrating sustainability performance into business. *Journal of Cleaner Production*, 136, 134-146.
- Mousa, S.K., and Othman, M. (2019). The impact of green human resource management practices on sustainable performance in healthcare organisations: A conceptual framework. *Journal of Cleaner Production*, 243, 118595.
- Moustakas, C. E. (1994). *Phenomenological research methods*. Thousand Oaks, CA: Sage.
- Naghi Beiranvand, D., Jamali Firouzabadi, K., & Dorniani, S. (2021). A model of service supply chain sustainability assessment using fuzzy methods and factor analysis in oil and gas industry. *Journal of Modelling in Management*, 18(1), 117-146.
- Nikolaou, I.E., Evangelinos, K.I., & Allan, S. (2013). A reverse logistics social responsibility evaluation framework based on the triple bottom line approach. *Journal of Cleaner Production*, 56, 173–184.
- OECD (2023). *Assessing greenhouse gas emissions and energy consumption in SMEs: Towards a pilot dashboard of SME greening and green entrepreneurship indicators*. OECD SME and Entrepreneurship Papers, 42, OECD Publishing.

- OECD (2011). OECD Guidelines for Multinational Enterprises. OECD Publishing.  
<http://dx.doi.org/10.1787/9789264115415-en>
- Onat, N.C., Gumus, S., Kucukvar, M., & Tatari, O. (2016). Application of the TOPSIS and intuitionistic fuzzy set approaches for ranking the life cycle sustainability performance of alternative vehicle technologies. *Sustainable Production and Consumption*, 6, 12–25.
- Onat, N. C., Kucukvar, M., & Tatari, O. (2016). Towards a triple bottom-line sustainability assessment of the U.S. transportation sector: A multi-scale input–output analysis. *Journal of Cleaner Production*, 140, 701–712.
- Orb, A., Eisenhauer, L., & Wynaden, D. (2001). Ethics in qualitative research. *Journal of Nursing Scholarship*, 33(1), 93-96.
- Özdemir, E. D., Härdtlein, M., Jenssen, T., Zech, D., & Eltrop, L. (2011). A confusion of tongues or the art of aggregating indicators - Reflections on four projective methodologies on sustainability measurement. *Renewable and Sustainable Energy Reviews*, 15(5), 2385-2396.
- Özkadi, F., & Tavukçu, C.E. (2021). EU Green Deal, a presentaion at KAGIDER's meeting on 31 March 2021.
- Pask, F., Lake, P., Yang, A., Tokos, H., & Sadhukhan, J. (2017). Sustainability indicators for industrial ovens and assessment using Fuzzy set theory and Monte Carlo simulation. *Journal of Cleaner Production*, 140, 1217–1225.
- Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). Sage Publications.
- Pons, O., & de la Fuente, A. (2013). Integrated sustainability assessment method applied to structural concrete columns. *Construction and Building Materials*, 49, 882–893.
- Poveda, C.A., & Elbarkouky, M.M.G. (2016). Hybrid process-criterion benchmarking methodology framework to support sustainability performance assessment and reporting. *International Journal of Sustainable Development & World Ecology*, 23, 278–291.
- Qorri, A., Mujkic, Z., & Kraslawski, A. (2018). A conceptual framework for measuring sustainability performance of supply chains. *Journal of Cleaner Production*, 189, 570-584.
- Rahdari, A.H., & Rostamy, A.A.A. (2015). Designing a General Set of Sustainability Indicators at the Corporate Level. *Journal of Cleaner Production*, 108, 757-771.

- Raj, A., & Srivastava, S.K. (2018). Sustainability performance assessment of an aircraft manufacturing firm. *Benchmarking: An International Journal*, 25(5), 1500-1527.
- Rajak, S., & Vinodh, S. (2015). Application of fuzzy logic for social sustainability performance evaluation: a case study of an Indian automotive component manufacturing organization. *Journal of Cleaner Production*, 108, 1184–1192.
- Raut, R., Cheikhrouhou, N., & Kharat, M. (2017). Sustainability in The Banking Industry: A Strategic Multi-Criterion Analysis. *Business Strategy and the Environment*, 26, 550–568.
- Reefke, H., & Sundaram, D. (2017). Key themes and research opportunities in sustainable supply chain management-identification and evaluation. *Omega*, 66 (B), 195-211.
- Ren, J., Manzardo, A., Toniolo, S., & Scipioni, A. (2013). Sustainability of hydrogen supply chain. Part I: Identification of critical criteria and cause–effect analysis for enhancing the sustainability using DEMATEL. *The International Journal of Hydrogen Energy*, 38, 14159-14171.
- Revell, A., Stokes, D., & Chen, H. (2010). Small businesses and the environment: Turning over a new leaf? *Business Strategy and the Environment*, 19(5), 273–288.
- Rita, D., Ferreira, F., Meidutė-Kavaliauskienė, I., Govindan, K., Ferreira, J. (2018). Proposal of a green index for small and medium-sized enterprises: a multiple criteria group decision-making approach. *Journal of Cleaner Production*, 196, 985–996.
- Rivera, J.M., Muñoz, M.J., & Moneva, J.M. (2017). Revisiting the Relationship Between Corporate Stakeholder Commitment and Social and Financial Performance. *Sustainable Development*, 25, 482–494.
- Rodger, J.A., & George, J.A. (2017). Triple bottom line accounting for optimizing natural gas sustainability: A statistical linear programming fuzzy ILOWA optimized sustainment model approach to reducing supply chain global cybersecurity vulnerability through information and communications technology. *Journal of Cleaner Production*, 142, 1931–1949.
- Rodrigues, V.P., Pigosso, D.C.A., & McAloone, T.C. (2016). Process-related key performance indicators for measuring sustainability performance of ecodesign

- implementation into product development. *Journal of Cleaner Production*, 139, 416-428.
- Sachs, J.D., Lafortune, G., & Fuller, G. (2024). The SDGs and the UN Summit of the Future. *Sustainable Development Report 2024*. Dublin University Press.
- Schein, E. H. (2010). *Organizational culture and leadership* (4th ed.). Jossey-Bass.
- Schneider, A., & Meins, E. (2012). Two Dimensions of Corporate Sustainability Assessment: Towards a Comprehensive Framework. *Business Strategy and the Environment*, 21, 211–222.
- Schöggl, J.-P., Fritz, M.M.C., & Baumgartner, R.J. (2016). Toward supply chain-wide sustainability assessment: a conceptual framework and an aggregation method to assess supply chain performance. *Journal of Cleaner Production*, 131, 822–835.
- Schöggl, J.-P., Baumgartner, R.J., & Hofer, D. (2017). Improving sustainability performance in early phases of product design: A checklist for sustainable product development tested in the automotive industry. *Journal of Cleaner Production*, 140, 1602–1617.
- Searcy, C. (2012). Corporate sustainability performance measurement systems. A review and research agenda. *Journal of Business Ethics*, 107, 239-253.
- Searcy, C. (2014). Measuring Enterprise Sustainability. *Business Strategy and the Environment*, 25, 120–133.
- Siew, R. Y. (2015). A review of corporate sustainability reporting tools (SRTs). *Journal of Environmental Management*, 164, 180–195.
- Sikdar, S.K., Sengupta, D., & Mukherjee, R. (2017a). Sustainability Measurement for Technology and Business Systems: Use of Currently Available Tools for Quantification, in *Measuring Progress Towards Sustainability*, 93–127. Springer International Publishing.
- Sikdar, S.K., Sengupta, D., & Mukherjee, R. (2017b). Statistical Algorithms for Sustainability Measurement and Decision Making, in *Measuring Progress Towards Sustainability*, 153–184. Springer International Publishing.
- Silva, S. L., Nuzum, A., & Schaltegger, S. (2019). Stakeholder expectations on sustainability performance measurement and assessment. A systematic literature review. *Journal of Cleaner Production*, 217, 204-215.
- Silver, C. (2024). Thematic Analysis with MAXQDA. MAXDAYS 2024 Conference, Berlin.

- Singh, A.K., & Vinodh, S. (2017). Modeling and performance evaluation of agility coupled with sustainability for business planning. *Journal of Management Development*, 36, 109–128.
- Singh, R. K., Murty, H. R., Gupta, S. K., & Dikshit, A. K. (2012). An overview of sustainability assessment methodologies. *Ecological Indicators*, 15 (1), 281-299.
- Székely, F., & Knirsch, M., (2005). Responsible Leadership and Corporate Social Responsibility: Metrics for Sustainable Performance, *European Management Journal*, 23(6), 628-647.
- Şahin, E. & Kaya, F. (2019). Pazarlamada Yeni Dönem, Endüstri 4.0 Yapay Zekâ ve Akıllı Asistanlar. Çizgi Kitabevi, Konya.
- Tan, Y., Ochoa, J.J., Langston, C., & Shen, L. (2015). An empirical study on the relationship between sustainability performance and business competitiveness of international construction contractors. *Journal of Cleaner Production*, 93, 273–278.
- Tokos, H., Pintarič, Z.N., & Krajnc, D. (2012). An integrated sustainability performance assessment and benchmarking of breweries. *Clean Technologies and Environmental Policy*, 14, 173–193.
- Traverso, M., Asdrubali, F., Francia, A., & Finkbeiner, M. (2012). Towards life cycle sustainability assessment: an implementation to photovoltaic modules. *The International Journal of Life Cycle Assessment*, 17, 1068–1079.
- TURKONFED (2022). Risks, Opportunities and Expectations in Green Transition. Available at: <https://turkonfed.org/en/detail/3816/risks-opportunities-and-expectations-in-green-transition> (accessed March 15, 2023)
- Türkiye's Green Deal Action Plan (2021). Türkiye Yeşil Mutabakat Eylem Planı. Available at: <https://dongusel.csb.gov.tr/turkiye-yesil-mutabakat-eylem-plan-i-106855> (accessed February 20, 2023).
- United Nations General Assembly (2015). Transforming Our World: the 2030 Agenda for Sustainable Development. A/RES/70/1.
- United Nations (2020). The Sustainable Development Goals Report 2020.
- van der Voet, H., van der Heijden, G.W.A.M., Kruisselbrink, J.W., Tromp, S.-O., Rijgersberg, H., van Bussel, L.G.J., van Asselt, E.D., & van der Fels-Klerx, H.J. (2014). A decision support tool for assessing scenario acceptability using a hierarchy of indicators with compensabilities and importance weights. *Ecological Indicators*, 43, 306–314.

- van Marrewijk, M. (2003). Concepts and Definitions of CSR and Corporate Sustainability: Between Agency and Communion. *Journal of Business Ethics* 44, 95–105.
- Vinodh, S., & Girubha, R.J. (2012a). Sustainable concept selection using ELECTRE. *Clean Technologies and Environmental Policy*, 14, 651–656.
- Vinodh, S., & Girubha, R.J. (2012b). PROMETHEE based sustainable concept selection. *Applied Mathematical Modelling*, 36, 5301–5308.
- Vinodh, S., Kamala, V., & Shama, M.S. (2013). Compromise ranking approach for sustainable concept selection in an Indian modular switches manufacturing organization. *The International Journal of Advanced Manufacturing Technology*, 64, 1709–1714.
- Waddock, S. (2003). Stakeholder performance implications of corporate responsibility. *International Journal of Business Performance Management*, 5(2/3), 114-124.
- Wang, J. J., Jing, Y. Y., Zhang, C. F., & Zhao, J. H. (2009). Review on multi-criteria decision analysis aid in sustainable energy decision-making. *Renew. Sustain. Energy Rev.*, 13, 2263–2278.
- Wibowo, S., & Grandhi, S. (2016). Evaluating the sustainability performance of thermal power enterprises, in 2016 IEEE 11th Conference on Industrial Electronics and Applications (ICIEA), 1754–1759.
- Willard, B. (2012). *The new sustainability advantage: Seven business case benefits of a triple bottom line*. New Society Publishers.
- Wolfslehner, B., Brüchert, F., Fischbach, J., Rammer, W., Becker, G., Lindner, M., & Lexer, M.J. (2012). Exploratory multi-criteria analysis in sustainability impact assessment of forest-wood chains: the example of a regional case study in Baden–Württemberg. *European Journal of Forest Research*, 131, 47–56.
- Yin, R. K. (2018). *Case study research and applications: Design and methods* (6th ed.). Thousand Oaks, CA: Sage
- Yusuf, Y.Y., Gunasekaran, A., Musa, A., El-Berishy, N.M., Abubakar, T., & Ambursa, H.M. (2013). The UK oil and gas supply chains: an empirical analysis of adoption of sustainable measures and performance outcomes. *International Journal of Production Economics*, 146 (2), 501-514.

- Zhang, Q., Shah, N., Wassick, J., Helling, R., & van Egerschot, P. (2014). Sustainable supply chain optimisation: an industrial case study. *Computers and Industrial Engineering*, 74, 68-83.
- Zhao, H., & Li, N. (2016). Performance Evaluation for Sustainability of Strong Smart Grid by Using Stochastic AHP and Fuzzy TOPSIS Methods. *Sustainability*, 8, 129.
- Zhou, L., Tokos, H., Krajnc, D., and Yang, Y. (2012). Sustainability performance evaluation in industry by composite sustainability index. *Clean Technologies and Environmental Policy*, 14, 789–803.
- Ziolkowska, J.R. (2014). Optimizing biofuels production in an uncertain decision environment: Conventional vs. advanced technologies. *Applied Energy*, 114, 366–376.
- Zolfani, S.H., & Saparauskas, J. (2014). New Application of SWARA Method in Prioritizing Sustainability Assessment Indicators of Energy System. *Engineering Economics*, 24, 408-414.
- <https://www.unglobalcompact.org/what-is-gc>
- <https://www.cdp.net/en>
- [https://www.ifc.org/wps/wcm/connect/topics\\_ext\\_content/ifc\\_external\\_corporate\\_site/sustainability-at-ifc/policies-standards/sustainability+framework](https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/policies-standards/sustainability+framework)
- <https://www.accountability.org/standards/#:~:text=AccountAbility,accountability%2C%20responsibility%2C%20and%20sustainability>
- <https://www.integratedreporting.org/>
- <https://www.iso.org/home.html>
- <https://www.spglobal.com/spdji/en/indices/esg/dow-jones-sustainability-world-index/#overview>
- <https://www.borsaistanbul.com/en/sayfa/2227/sustainability-indices>
- <https://www.globalreporting.org/>
- <https://www.ilo.org/global/lang--en/index.htm>