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CORPORATE SUSTAINABILITY MEASUREMENT: A COMPANY-LEVEL APPROACH

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Abstract

In recent years, corporate sustainability has emerged as a critical paradigm for assessing the long-term success of companies. Traditionally divided into three pillars; environmental, social, and economic, sustainability efforts have often been evaluated in isolation, limiting their measurable impact. This study proposes a unified Corporate Sustainability Index, that integrates all three dimensions into a comprehensive framework. The research determines the engagement of companies with respect to sustainability practices by quantifying sustainability performance through primary data, gathered through a structured questionnaire, using a composite scoring approach. Exploratory factor analysis (EFA) is used to validate the questionnaire's dimensional structure before calculating the final sustainability score using a weighted average method. The framework aims to support countries that lack established ESG scoring systems or are in the early stages of adopting sustainability reporting practices. By offering a practical, data-driven tool, the study provides companies, policymakers, and researchers with a tool for evaluating and improving corporate sustainability performance. The integration of environmental, social, and economic indicators into a single, unified score contributes to the global agenda on sustainability while addressing the specific needs of developing economies.

Keywords: Sustainability Measurement, Corporate Sustainability, Environmental Sustainability, Social Sustainability, Economic Sustainability, Survey-Based Assessment, Sustainability Indicators, Index



INTRODUCTION

Sustainability is a buzzword in recent years. With the growing impact of climate change, it has become crucial for both individuals and organizations to adopt and prioritize sustainable practices. The concept is widely used among multiple disciplines. While the term derives from a macroeconomic perspective, it has been adjusted and applied over the time on a micro perspective, thus on single economic units (Figge & Hahn, 2004). The United Nations' 2030 Agenda highlights the critical role businesses play in achieving this global objective. However, despite its significance, companies have faced challenges in integrating sustainable development into their operations and practices (Silva, Nuzum, & Schalteger, 2019). The field of corporate sustainability (CS) has emerged as a research field that stands between sustainable development and business practices. although the concept still lacks universal definition and agreement (Ashrafi, Adams, Walker, & Magnan, 2018). Interpretations vary depending on the objectives, industry and stakeholders involved. The general idea in the context of a company is often interpreted through their efforts to balance environmental responsibility, social impact, and economic performance within their business strategies.

Over the recent decades, scholars have increasingly focused on the role of the private sector in addressing pressing social and environmental challenges. This shift has called for a redefinition of the role companies play and how they perceive their role towards global socioenvironmental issues. The traditional view that companies are primarily the cause of social and environmental problems through profit-driven activities is no longer valid. Instead, companies need to move from this view and become part of the solution. Companies play a crucial role as drivers of innovation, offering solutions that improve quality of life while reducing the environmental impact.

Understanding sustainability within the economic framework and exploring how it can be effectively operationalized within a company is important for companies that are committed to contribute to sustainable development. Given the multidimensional and context-dependent nature of sustainability, developing reliable measurement tools remains an unsolved but necessary task for both researchers and practitioners. This study focuses on how corporate sustainability can be quantitatively assessed in a way that captures its economic, environmental, and social dimensions.

Research Questions

1. How can the environmental, social, and economic dimensions of corporate sustainability be effectively integrated into a unified measurement framework?



- 2. How can a composite Corporate Sustainability Index be developed and validated to provide a reliable and practical tool for assessing sustainability performance?
- 3. How can the proposed Corporate Sustainability Index (CSI) be interpreted to provide meaningful insights for companies and stakeholders?

Research Objectives

- 1. To develop a comprehensive CSI that integrates environmental, social, and economic performance into a single, measurable framework.
- To validate the dimensional structure of sustainability indicators using Exploratory Factor Analysis (EFA).
- 3. To calculate a weighted composite sustainability score that measures the overall corporate sustainability performance.

LITERATURE REVIEW

Research highlights that having effective measurement and evaluation systems for corporate sustainability performance is essential for successfully implementing sustainability at company level (Büyüközkan & Karabulut, 2018). Given the lack of a unified definition of sustainability in the business context, measuring corporate sustainability is a complex task. Corporate sustainability relies on three essential and interdependent dimensions: economic, social, and environmental. These elements cannot replace one another. According to (Pazienza, de Jong, & Schoenmaker, 2023), in order to measure a concept effectively, it must be clearly defined in its fullest form. Therefore, measuring corporate sustainability requires a clear definition of its dimensions, recognition of their non-substitutability, alignment between measures and the concept, and a benchmark based on the ideal or maximum standard.

While current methodologies capture key elements of corporate sustainability assessment, they fail to offer a consistent measure applicable across different companies and sectors. The complexity of the concept makes the measurement challenging, as it involves combining both qualitative and quantitative indicators whose interconnections remain insufficiently examined (Mura, Longo, Micheli, & Bolzani, 2018). The main gap lies in the difficulty of defining what should be measured and determining how to measure it effectively. Moreover, sustainability is defined by multiple, often diverse objectives and is determined by the specific context in which it is implemented (Meuer, Koelbel, & Hoffmann, 2020).

(Searcy, 2012) emphasizes the need of companies to rely on sustainability performance indicators, in order to measure and guide company sustainability efforts. Sustainability performance indicators can be based on both quantitative and qualitative data, capturing



various dimensions such as social, environmental, economic, and institutional aspects. Although qualitative indicators are used, research shows that quantitative ones are more commonly applied, as they offer the advantage of being standardized and easier to compare across companies (Schneider & Meins, 2012).

Attempts to quantify corporate sustainability have led to the development of various methodological frameworks. The academic literature has addressed this issue through a variety of methods and approaches, including the use of measurement scales, the identification of diverse indicators, the development of composite corporate sustainability indices, and the application of internationally recognized standards such as ISO 26000 and the Global Reporting Initiative (GRI). (Montiel & Delgado-Ceballos, 2014) have conducted a literature review of sustainability-related studies from 1995 to 2013. According to their study, there is no standardized method for measuring corporate sustainability. Their review identified two predominant approaches used to assess sustainability at the firm level:

- The use of secondary data published by organizations that have developed quantitative measurement tools and ranking systems to evaluate the extent of sustainability adoption within businesses.
- The development of metrics by researchers themselves, where primary data is collected and sustainability indices or indicators are constructed specifically for the study. Examples of this approach include the works of (Bansal, 2005), (Chow & Chen, 2012), (Krajnc & Glavic, 2015), (Beekaroo, Callychurn, & Hurreeram, 2019), (Medel-González, García-Avila, Acosta-Beltrán, & Hernández, 2013), etc. However, critics of this method point to significant challenges in appropriately weighting the economic, environmental, and social dimensions within an overall sustainability score.

According to (Nikolaou, Tsalis, & Evangelinos, 2018), there are two main types of methodological frameworks for measuring corporate sustainability: frameworks that rely on isolated indicators and multidimensional corporate sustainability frameworks which integrate environmental, economic, and social indicators.

(Pranugrahaning, Donovan, Topple, & Masli, 2021) identify the main methodologies encountered in the literature regarding the assessment of corporate sustainability. the literature on corporate sustainability assessment includes a range of commonly used research methods. Quantitative studies often rely on panel data, sometimes combined with information from corporate sustainability reports, or use surveys and mixed approaches that blend primary and secondary data sources. In contrast, qualitative research typically involves case studies or content analysis to explore sustainability practices in depth.



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The decision to construct the CSI using primary data collected directly from companies was driven by the specific context of Albania. In the country, there is a notable lack of publicly available official data for each dimension of sustainability-environmental, social, economic and governance. Furthermore, most companies do not publish standardized sustainability reports that align with internationally recognized frameworks such as the Global Reporting Initiative (GRI). This limitation makes it difficult to rely on secondary data sources. Therefore, a questionnaire-based approach was chosen as the most appropriate method to gather consistent and comparable information across companies, enabling the development of a tailored index that reflects the actual state of corporate sustainability in Albania.

METHODOLOGY

The main objective of this study is to suggest a reliable and valid scale that captures corporate sustainability, based on empirical data gathered from companies. In order to achieve this objective, the study adopts a quantitative research design to measure corporate sustainability through the development of a composite index that integrates environmental, social, and economic dimensions. Data were collected using a structured questionnaire sent to large companies, operating in the production sector in Albania.

The selection of large companies operating in the production sector as the focus of this study was intentional and was based in both theoretical and practical considerations. These companies typically possess more structured internal systems, greater resource availability, and formalized management processes, all of which increase the likelihood of adopting and reporting on sustainability-related practices (Aguilar-Fernández & Otegi-Olaso, 2018), (Hassan, Romilly, & Khadaroo, 2023). Their scale of operations also means they have a significant impact on environmental resources, employment, and local economies, making them essential actors in the pursuit of sustainable development Furthermore, large production firms are often subject to increased attention from a broad range of stakeholders, including regulators, investors, customers, and international supply chain partners, who increasingly demand transparent and accountable sustainability performance (Agyabeng-Mensah, Afum, & Baah, 2024). These combined factors position large production companies relevant for studying the practical application of sustainability principles, particularly within the context of a developing economy like Albania.

The questionnaire was designed by adopting validated items from existing academic literature on sustainability measurement (Jain, Vyas, & Chalasani, 2016), (Ayuso & Navarrete-Báez, 2017), (Cassells & Lewis, 2019), (Mitra, 2022). Items were carefully reviewed and some of them were adapted to suit the specific context of Albania's private sector. The questionnaire



includes three sections, corresponding to the environmental, social, and economic dimensions of corporate sustainability. Each section consists of multiple Likert-scale items, with responses ranging from 1 (strongly disagree) to 5 (strongly agree), allowing for the quantification of firms' engagement in various sustainability practices.

Environmental dimension includes items such as pollution reduction, the use of renewable energy, waste management and recycling, the implementation of circular economy principles, and the preservation of natural resources. Social dimension includes questions related to ensuring favorable working conditions, fair compensation and professional development for employees, considering the impact on the community during decision-making, gender equality issues and applying ethical standards in business operations. Economic dimension focuses on financial stability, innovation, and the long-term viability of the company. The combination of these three dimensions provides a holistic view of corporate sustainability, enabling the development of a unified Corporate Sustainability Index (CSI).

A purposive sampling approach was employed to target companies that met the criteria of size and sector. According to data from the Directorate of Large Taxpayers, companies with an annual turnover exceeding 350 million ALL and more than 50 emoyees are considered large companies. There is a total number of 963 large companies operating in Albania (January 2025) and 155 of them operate in the manufacturing sector. The target population for this study consisted of all 155 large companies operating in the manufacturing sector in Albania, as identified by the Directorate of Large Taxpayers in January 2025. An effort was made to reach the entire population of these firms through direct distribution of the questionnaire. Despite follow-up attempts, a total of 100 companies responded and completed the questionnaire, resulting in a response rate of approximately 65%. This sample size is considered adequate for the purpose of the analysis and ensures a representative overview of the population. Part of the questionnaires were distributed face to face and part of them were distributed electronically via email. The questionnaire was directed to individuals in leadership or management positions within the selected companies. This approach ensured that the responses were provided by individuals with adequate knowledge of the company's strategies, operations, and sustainability initiatives.

As part of this study, Exploratory Factor Analysis (EFA) was used as an initial step to examine the structure of the data and identify possible underlying constructs behind the questionnaire items. EFA is a multivariate statistical technique that helps determine whether a smaller number of hidden factors can explain the relationships among a larger set of observed variables (Schreiber, 2020). According to (Awang, 2015), conducting an EFA is essential when a measurement instrument has been modified or adapted, as it helps ensure its validity and



structural accuracy within the new research context. In this case, EFA helped identify which items group together, reflecting distinct components of each sustainability dimension. Based on the factor structure derived from the EFA, a composite sustainability index will then be constructed for each company. This index will integrate scores from the validated dimensions, providing a unified measure of corporate sustainability performance and enabling comparisons across firms within the sample.

RESULTS

The first step of the data analysis involved conducting an Exploratory Factor Analysis (EFA) to identify the underlying structure of corporate sustainability concept. This analysis was performed using SPSS software. The results from the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity indicate that the data are suitable for EFA. The KMO value of 0.914 indicates an excellent level of sampling adequacy, meaning that the variables are well-suited for factor analysis and are likely to group together into clear and reliable factors (Hair, Anderson, Babin, & Black, 2013). Additionally, Bartlett's Test of Sphericity is statistically significant (Chi-square = 4652.107, df = 528, p < 0.001), indicating that the correlation matrix is not an identity matrix and that the variables are significantly correlated with one another. These results confirm that factor analysis is appropriate for this dataset.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.914
Bartlett's Test of Sphericity	Approx. Chi-Square	4652.107
-	df	528
	Sig.	.000

Table 1: Results of the Kaiser-Meyer- Olkin (KMO) and Bartlett's Test for Sampling Adequacy

Source: IBM SPSS Statistics 27

Following the confirmation of data suitability through the KMO and Bartlett's tests, EFA was conducted using the Maximum Likelihood extraction method, combined with Promax rotation, which allows for correlation among factors. The number of factors to retain was determined based on Kaiser's criterion, where only components with eigenvalues greater than 1.0 were considered significant. Additionally, the scree plot was reviewed to help decide how many factors to keep, showing a clear point where the eigenvalues began to level off, further supporting the choice to retain three main factors. During the factor extraction process, several items that exhibited low communalities or high cross-loadings were eliminated to improve the clarity and reliability of the factor structure. The analysis resulted in the extraction of three main factors, which together explain 50.072% of the total variance. This level of explained variance is



considered acceptable in social sciences, particularly in studies involving multidimensional constructs such as corporate sustainability (Fabrigar & Wegener, 2012). The retained factors corresponded to the theoretical dimensions of sustainability as expected: environmental, social, and economic-providing empirical support for the construct validity of the questionnaire. These factors will serve as the basis for constructing a composite sustainability index for each company included in the study.

	ltem	ltem			
	Mean	Standard	Factor 1:	Factor 2:	Factor 3:
		Deviation	Environmental	Social	Economic
			Sustainability	Sustainability	Sustainability
M3: Our company implements	3.05	.958	.782		
separation of recyclable and					
nonrecyclable materials from					
waste.					
M10: Our company purchases	3.07	.961	.764		
and uses raw materials that can					
be easily reused or recycled.					
M6: Our company meets its	3.23	.653	.754		
energy needs through the use					
of renewable energy sources.					
M1: Our company prioritizes the	2.98	.745	.748		
use of transportation methods					
and vehicles that produce less					
pollution.	0.00	005	740		
M11: Our company separates	3.22	.865	.746		
hazardous and non-hazardous					
materials.	0.00	640	700		
M12: Our company takes into	3.30	.642	.733		
account the environmental					
development of products and					
convices at all stages of their life					
M2: Our company consults with	4 35	687	725		
stakeholders when making	4.00	.007	.720		
decisions related to the					
environment					
EK7: Our company ensures	3.84	.992		.777	
transparent and responsible					
financial management.					
EK4: Our company evaluates the	3.74	.910		.742	
economic impact of our					
operations on local employment					
and supply chains.					

Table 2: Items statistics, factor loadings and Cronbach's Alpha



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EK5: Our company implements	3 72	960		724		
procurement policies that favor	0.72	.000				Table 2
						1 abie 2
	2.24	056		665		
and disalages the direct	3.24	.950		.005		
economic value we generate and						
distribute to stakeholders.	0.04			500		
EK1: Our company evaluates the	3.61	.836		.599		
economic impact of our						
operations on local employment						
and supply chains						
S1: Our company aims to	4.01	.887			.684	
achieve a high level of diversity						
among its employees.						
S4: Our company organizes	3.69	.901			.677	
training on health and safety.						
S2: Our company informs	3.83	.794			.647	
employees about the strategic						
orientation of the firm.						
S10: Our company consults with	3.68	.899			.645	
stakeholders (employees,						
suppliers, customers, creditors,						
associations, NGOs, etc.) on						
decisions related to local						
development.						
S6: Our company favors local	3.64	.846			.605	
suppliers in its purchasing						
processes.						
Cronbach's Alpha based on			.932	.829	.888	
Standardized Items						
Extraction Method: Maximum Likelik	nood.					

Rotation Method: Promax with Kaiser Normalization. a. Rotation converged in 5 iterations. Source: IBM SPSS Statistics 27

Following the extraction of three main factors through Exploratory Factor Analysis, the reliability analysis was also conducted to assess the internal consistency of the items within each factor. Given that each factor represents a distinct dimension of corporate sustainability; environmental, social, and economic, Cronbach's Alpha was calculated separately for each factor. This approach ensures that the grouped items reliably measure their respective constructs, rather than assessing internal consistency across the entire item set. Overall, these values suggest that the items in the scale have strong internal consistency, with values all exceeding the acceptable threshold of 0.7, indicating that the scale is reliable for measuring the intended construct (Taber, 2018).





Figure 1: Scree Plot for Factor Retention Based on Maximum Likelihood Estimation Source: IBM SPSS Statistics 27

Sustainability Dimension	Cronbach's Alpha	Reliability Level
Environmental dimension	0.932	Excellent internal consistency
Social dimension	0.829	Good internal consistency
Economic dimension	0.888	Good internal consistency

Table 3: The Alpha Cronbach values for each construct

Source: IBM SPSS Statistics 27, (Cortina, 1993)

After defining the indicators corresponding to each of the three sustainability dimensions (environmental, social, and economic), the next step involves calculating the Corporate Sustainability Index (CSI). In this study, the CSI was developed through an empirical and datadriven approach. The EFA results revealed a three-factor structure that reflects the main dimensions of sustainability as expressed by the dataset. These factors served as the basis for grouping the relevant indicators and validating their dimensional association. Following this validation, the index was constructed by aggregating the normalized scores of the selected indicators. The index is calculated using the following formula (Medel-González, García-Ávila, Acosta-Beltrán , & Hernández, 2013):

$$CSI = \sum_{j=1}^{3} \sum_{i=1}^{n} W_{j} \cdot W_{\{i|j\}} \cdot R_{\{i|j\}}$$

- CSI is the Corporate Sustainability Index
- W_j is the weight of factor *j* (dimension of sustainability),



- $W_{i|j}$ is the weight of indicator *i* within factor *j*,
- R_{ili} is the normalized value of indicator *i* within factor *j*.

Equal weights were assumed for both the dimensions and the indicators within each dimension, to maintain neutrality and simplicity in index calculation. The normalization of indicator values ensures that differences in scale do not distort the aggregated results. Once the CSI is calculated, it is important to understand what each index value means and how it can be interpreted to draw useful conclusions for companies and stakeholders. The suggested ranges and the respective interpretation suggested by (Medel-González, García-Ávila, Acosta-Beltrán, & Hernández, 2013) have been adopted.

CSI range	Sustainability performance interpretation
0.95 < CSI < 1	Very Good
0.85 < CSI < 0.95	Good
0.75 < CSI < 0.85	Neutral
0.65 B CSI < 0.75	Deficient
CSI < 0.65	Bad

Table 4: CSI thresholds for evaluating sustainability performance

Source: (Medel-González, García-Ávila, Acosta-Beltrán, & Hernández, 2013)

The index ranges from bad to very good, capturing a spectrum of sustainability performance within the company. At the highest end of the index, businesses demonstrate a high degree of alignment between their sustainability performance and the sustainability goals defined in their strategies. Companies in this category consistently integrate sustainable practices into their core operations, achieving significant results across all defined sustainability dimensions (environmental, social, and economic). Their performance demonstrates proactive efforts in innovation, resource efficiency, stakeholder engagement, and long-term value creation. Companies with a good sustainability performance are actively working towards achieving their sustainability goals and show positive progress. While their sustainability practices align well with their strategic objectives, there may still be certain areas for improvement. Businesses in the neutral range have moderate alignment between their sustainability performance and strategic goals. These companies have taken some steps towards integrating sustainability into their operations, but their efforts may lack consistency or fail to fully address all sustainability dimensions. These companies are often still in the early stages of sustainability implementation.

At the low end of the index, there are businesses which have a significant gap between their sustainability goals and their actual performance. Sustainability practices are either poorly



integrated, and the business is not meeting its defined sustainability targets. Companies in this category may lack comprehensive strategies or a long-term vision for sustainability, and their operations often have a negative environmental or social impact. At the very low end, companies are failing to align their sustainability practices with their strategic goals entirely. These businesses exhibit poor performance in nearly all areas of sustainability. Sustainability efforts are either completely absent or minimal, with no clear direction toward achieving their sustainability targets.

The companies included in the study primarily felt within the "Deficient" (0.65 < CSI < 0.75) and "Neutral" (0.75 < CSI < 0.85) levels of the CSI. This outcome reflects the broader context in Albania, where sustainability is still in the early stages of implementation. There were a few number of companies which felt under the "Good" range. These were mainly exportoriented companies which are obliged to comply with certain sustainability standards due to external market demands. Overall, while many companies have begun to implement specific sustainability measures, these efforts remain largely fragmented and have not yet been included as a core element of their overall strategy.

CONCLUSIONS

This study proposed a simplified procedure to measure and quantify sustainability efforts among Albanian large companies, utilizing a questionnaire-based approach. Through EFA, the three key dimensions of sustainability (environmental, social, and economic) were validated. These dimensions were later used to form the sustainability index. The EFA results confirmed the conceptual framework for sustainability, ensuring that the constructs measured by the questionnaire were both valid and reliable. The factor extraction process helped identify the most significant elements contributing to each sustainability dimension, allowing for a better understanding of how companies prioritize and implement sustainability practices. Based on the retained factors from the EFA, an index of sustainability was constructed to offer a quantifiable measure of a company's sustainability efforts. This index is a valuable tool for companies, as it allows them to assess their performance across the three key dimensions, providing insights into areas of strength and opportunities for improvement. The use of an index enables a comparison across different companies, facilitating better decision-making and enhancing accountability in the pursuit of sustainability goals.

The CSI values serve as a useful tool to assess the current state of corporate sustainability practices in Albania. By highlighting that most companies in Albania fall within the "Deficient" and "Neutral" ranges, the index reveals that sustainability efforts in the country are still in a developmental phase. CSI helps identify gaps between basic compliance and strategic



integration of sustainability, providing a clear picture of where companies stand and what progress is needed. Moreover, the few companies that reached the "Good" level underscore the influence of external pressures in driving sustainable practices. In this context, the CSI can guide policymakers, businesses, and stakeholders in designing targeted interventions and support mechanisms to strengthen sustainability performance at the national level.

The study lays the foundation for a new approach to measure corporate sustainability in the context of Albania, but it also suggests directions for future exploration. Further research could focus on testing the index across different sectors, helping uncover sector-specific challenges and best practices. Additionally, including perspectives from stakeholders would enrich the assessment and offer a more holistic view of corporate sustainability. Integrating qualitative insights, such as managerial perceptions or stakeholder feedback would deepen the understanding of the drivers and barriers behind sustainability adoption. In the Albanian context, such studies are especially important as the country continues its efforts toward EU integration and sustainable development alignment.

REFERENCES

Aguilar-Fernández, M., & Otegi-Olaso, J. (2018). Firm Size and the Business Model for Sustainable Innovation. Sustainability, 10(12), 1-27.

Agyabeng-Mensah, Y., Afum, E., & Baah, C. (2024). Stakeholder pressure and circular supply chain practices: Moderating roles of environmental information exchange capability and circular innovation orientation. Business Strategy and the Environment, 33(6), 5703-5720.

Ashrafi, M., Adams, M., Walker, T., & Magnan, G. (2018). 'How corporate social responsibility can be integrated into corporate sustainability: a theoretical review of their relationships'. International Journal of Sustainable Development & World Ecology, 671-681.

Awang, Z. (2015). SEM Made Simple: A Gentle Approach to Learning Sructural Equation Modelling. MPWS Rich Publication.

Ayuso, S., & Navarrete-Báez, F. (2017). How Does Entrepreneurial and International Orientation Influence SMEs' Commitment to Sustainable Development? Empirical Evidence from Spain and Mexico. Corporate Social Responsibility and Environmental Management.

Bansal, P. (2005). Strategie Management Journal. Evolving Sustainably: A longitudinal study of corporate sustainable development, 197-218. Retrieved from https://onlinelibrary.wiley.com/doi/10.1002/smj.441

Beekaroo, D., Callychurn, D., & Hurreeram, D. K. (2019). Developing a sustainability index for Mauritian manufacturing companies. Sustainable Production and Consumption, 1-18.

Büyüközkan, G., & Karabulut, Y. (2018). Sustainability performance evaluation: Literature review and future directions. Journal of Environmental Management, 253-267.

Cassells, S., & Lewis, K. (2019). Managing to be environmentally responsible: incentives and disincentives reported by small businesses. Small Enterprise Research, 26(1), 1-17. doi:https://doi.org/10.1080/13215906.2019.1569553

Chow, W. S., & Chen, Y. (2012). Corporate Sustainable Development: Testing a New Scale Based on the Mainland Chinese Context. Journal of Business Ethics, 519-533. Retrieved from https://www.researchgate.net/publication/227451409_Corporate_Sustainable_Development_Testing_a_New_Scale_ Based_on_the_Mainland_Chinese_

Cortina, J. (1993). What Is Coefficient Alpha? An Examination of Theory and Applications. Journal of Applied Psychology, 78(1), 98-104.

Fabrigar, L., & Wegener, D. (2012). Exploratory Factor Analysis. Oxford University Press.



Figge, F., & Hahn, T. (2004). Sustainable Value Added-measuring corporate contributions to sustainability beyond eco-efficiency. Ecological Economics, 48(2), 173-187. doi:https://doi.org/10.1016/j.ecolecon.2003.08.005

Hair, J., Anderson, R., Babin, B., & Black, W. (2013). Multivariate Data Analysis. Pearson New International.

Hassan, O., Romilly, P., & Khadaroo, I. (2023). The impact of corporate environmental management practices on environmental performance. Business Ethics, the Environment and Responsibility, 449-467.

Jain, P., Vyas, V., & Chalasani, D. (2016). Corporate Social Responsibility and Financial Performance in SMEs: A Modelling Structural Equation Approach. Global Business Review. 17(3), 630-653. doi:https://doi.org/10.1177/0972150916630827

Krajnc, D., & Glavic, P. (2015). How to compare companies on relevant dimensions of sustainability. Ecological Economics, 551-563.

Medel-González, F., García-Ávila, L., Acosta-Beltrán, A., & Hernández, C. (2013). Measuring and Evaluating Business Sustainability: Development and Application of Corporate Index of Sustainability Performance. In M. Erechtchoukova, P. Golinska-Dawson, & P. Khaiter, Sustainability Appraisal: Quantitative Methods and Mathematical Techniques for Environmental Performance Evaluation (pp. 33-61). Berlin Heidelberg: Springer .

Meuer, J., Koelbel, J., & Hoffmann, V. (2020). On the Nature of Corporate Sustainability. Organization & Environment, 33(3), 319-341.

Mitra, S. (2022). An exploratory study of sustainability and firm performance for Indian manufacturing small and medium enterprises. Journal of Cleaner Production, 371.

Montiel, I., & Delgado-Ceballos, J. (2014). Defining and Measuring Corporate Sustainability: Are We There Yet? Organization Environment, 113-139. Retrieved from R https://www.scirp.org/reference/referencespapers?referenceid=3102120

Mura, M., Longo, M., Micheli, P., & Bolzani, D. (2018). The Evolution of Sustainability Measurement Research. International Journal of Management Reviews, 20(3), 661-695.

Nikolaou, I., Tsalis, T., & Evangelinos, K. (2018). A framework to measure corporate sustainability performance: A sustainability-based view firm. Sustainable Consumption Production, strong of and 1-18. doi:https://doi.org/10.1016/j.spc.2018.10.004

Pazienza, M., de Jong, M., & Schoenmaker, D. (2023). Why Corporate Sustainability Is Not Yet Measured. Sustainability, 15(7), 1-23.

Pranugrahaning, A., Donovan, J., Topple, C., & Masli, E. (2021). Corporate sustainability assessments: A systematic literature review and conceptual framework. Journal of Cleaner Production.

Schneider, A., & Meins, E. (2012). Two Dimensions of Corporate Sustainability Assessment: Towards a Comprehensive Framework. Business Strategy & Environment, 211-222.

Schreiber, J. (2020). Issues and recommendations for exploratory factor analysis and principal component analysis. Research in Social & Administrative Pharmacy.

Searcy, C. (2012). Corporate Sustainability Performance Measurement Systems: A Review and Research Agenda. Journal of Business Ethics. 239-253.

Silva, S., Nuzum, A.-K., & Schalteger, S. (2019). Stakeholder expectations on sustainability performance measurement and assessment. A systematic literature review. Journal of Cleaner Production, 204-215.

Taber, K. (2018). The Use of Cronbach's Alpha When Developing and Reporting Research Instruments in Science Education. Research in science Education, 48, 1273-1296.

