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The sustainable development path for the survival of the planet and the contribution to the 2030 Agenda

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Abstract. The unsustainable use of natural resources, including fossil fuels, metals, and minerals, can lead to the scarcity of these resources and the depletion of entire ecosystems. The impact on the ecosystem and human life is the main topic of meetings at the United Nations (UN). To help mitigate these impacts on the planet the UN has formulated 17 Sustainable Development Goals (SDG) to help governments and organizations develop sustainability. This research aims to identify and analyse research trends on sustainable development and propose best practices that assist industrial organizations in achieving the UN SDG. The method adopted was a literature review, which served as the

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basis for identifying gaps in the most relevant publications indexed in the Scopus database. From the identified gaps, it was possible to compose trend clusters. The main contribution of this study is the mapping of the sustainable development field of study and paving the way for industrial organizations to aim towards the SDG of the 2030 Agenda. As a suggestion for future research, it is recommended that case studies be carried out, to ascertain the good practices that organizations can use to improve sustainable development.

Keywords: Sustainability; Triple bottom line; Agenda 2030; Preservation of the Planet.

1. Introduction

The unsustainable use of natural resources, including fossil fuels, metals, and minerals, can lead to the scarcity of these resources and the depletion of entire ecosystems. The impact on the ecosystem and human life is the main topic of meetings at the United Nations (UN). Population growth and economic development are putting pressure on the planet's natural resources. Increased demand for food, energy, and building materials can lead to overexploitation of natural resources and worsening environmental problems [1–3]. To ensure that human life on planet Earth is more sustainable, it is necessary to change the way human beings live and the patterns of conscious consumption, that is, that they are appropriate to the regenerative capacity of nature. There needs to be an alignment of the economic model, considering environmental and social costs. This can be done by creating public policies that encourage companies and individuals to adopt more sustainable practices, such as the use of renewable energy and reducing the consumption of natural resources [4–7].

The concepts of Sustainable Development (SD) were presented in 1987 in the Brundtland Report by the United Nations World Commission on Environment and Development, chaired by then Prime Minister of Norway, Gro Harlem Brundtland. The report was written as a response to the growing environmental and development problems facing the world at the time and sought to provide a global plan of action to address these challenges [1, 8–10]. He highlighted the interconnection between environmental, social, and economic challenges, and advocated the need for sustainable development that meets the needs of present generations without compromising the needs of future generations [5, 11, 12].

With the premise of better steering global economies towards SD, the United Nations proposed in 2015 a global action plan called “Agenda 2030,” which established 17 Sustainable Development Goals (SDGs): poverty eradication; zero hunger and sustainable agriculture; health and well-being; quality education; gender equality; clean

drinking water and sanitation; affordable and clean energy; decent work and economic growth; industry, innovation and infrastructure; reducing inequality; sustainable cities and communities; responsible production and consumption; climate change action; undersea life; wildlife; peace, justice and effective institutions; partnerships and means of implementation [4, 13, 14].

The SDGs represent a collaborative effort to ensure that human development is achieved in a sustainable way, that is, in a way that meets the needs of current generations without compromising the ability of future generations to meet their own needs [15–17]. In this context, the guiding question that led this research was: what are the references and the main trends of studies on Sustainable Development in organizations? With the purpose of solving it, this article aims at identifying the countries, journals, and articles most cited in the Corporate Sustainable Development theme and based on that, identifying the scientific gaps of the 15 most cited articles to map future research trends, through the analysis of the documents that are indexed in the Scopus database.

2. Theoretical framework

During the UN Conference on the Biosphere, in Paris, in 1968, it was pointed out the need to consider environmental impacts in development projects, since industrialization and the massive exploitation of natural resources in developing countries could cause incalculable damage, inhibiting even socioeconomic development [5, 18, 19]. At the Stockholm Conference, in 1972, 119 countries, including Brazil, participated in the meeting to discuss the rational use of natural resources, and thus raised questions about the development model and the change in behavior and positioning of these countries regarding the use of the environment in a conscious manner. In this event, the concept of sustainability and how to develop without putting the planet at risk began to be elaborated. From questionings and discussions such as those at the Stockholm Conference, the search for SD began. [20–22]there have been global efforts to raise awareness, build capacity, and govern the pollution issue for a sustainable solution. However, there is a growing concern about the adequacy of the desired level of mobilization and readiness so far achieved at the level of various stakeholders to respond to the issue of maritime pollution. In this context, the present study was aimed at assessing the relationship between knowledge, perception, and attitude of the stakeholders regarding their engagement towards maritime pollution at sea, beach, and coastal environments, by incorporating multi-criteria quantitative analysis method for a case study of Karachi area in Pakistan. The structured questionnaire incorporates Knowledge, Perception, and Attitude as three key variables for three principles; four standardized criteria each, with eighteen indicators transformed into queries by applying MCDA's Simple Multi Attribute Rating (SMART.

To help the world society achieve SD, the 1987 Brundtland Report entitled “Our Common Future” appeared. The concept of SD consists of meeting the current needs of society without compromising the living conditions and development of future generations, therefore, SD seeks to balance economic growth, environmental protection, and social justice to ensure a healthy future for all. Sustainability is the progressive maintenance of the carrying capacities of ecosystems. The report pointed out that high consumerism in first world countries and poverty in third world countries have hindered the equal development of the world, resulting in a serious socio-environmental crisis [5, 10, 23]. The Sustainable Development Goals (SDGs) were established by the UN in 2015 as a global agenda to guide global action to eradicate poverty, protect the planet, and ensure prosperity, thereby steering humanity toward sustainable development by 2030. There are 17 goals in total, each with specific targets to be achieved (Figure 1) [4].



Figure 1. 17 Sustainable Development Goals. Source: Adapted from United Nations (2020)

The SDGs cover a range of issues within economic, social, and environmental development, and seek to achieve a balance between these three dimensions. The goal is to ensure a healthy and prosperous future for all, leaving no one behind [4, 13].

To develop and increase the levels of sustainability, it is necessary to go beyond economic results and contribute to the protection of the environment and the development of society. Sustainable development passes through the three dimensions of the TBL. These dimensions are often referred to as the “three pillars” of sustainability and together form a solid foundation for decision-making that considers sustainability holistically [24–26]. The TBL is made up of the economic, environmental, and social pillars, proposed by British sociologist John Elkington in 1984. The idea is that

each of these pillars be balanced and considered together to achieve SD. Within the concepts of these pillars it is possible to identify central points such as justice, equity, and ethics in SD [1, 5, 23, 24].

3. Research Method

This work can be classified as an applied research, of exploratory nature [7, 14, 27, 28]. For the technical procedures, the bibliographic research method and literature review were adopted. Data collection was performed in the Scopus database in January 2023. The preference for Scopus is because this database includes most of the articles available in the Web of Science (WOS) database. Additionally, Scopus has unique articles that are excluded in WOS. The articles that are in both databases, in all cases, have more citations in Scopus than in WOS.

Three groups of keywords were used in the title profile with their possible similarities: Group 1, “Sustaina*”, “Sustainability” and “Sustainable”; Group 2, “Company”, “Corporate”, “Corporative” and “Enterprise”; and Group 3, “Development”, “Developing” and “Developer”. Only articles from journals in article, review and English language format were selected. The papers are in the English language, as it influences and impacts the Academy to a greater extent than other languages [1]. The search identified 590 indexed studies. To identify scientific gaps related to the research, the thirty most cited articles in the database were used, considering the time frame from 2018 to 2022. The flow of the investigation can be seen in Figure 1.

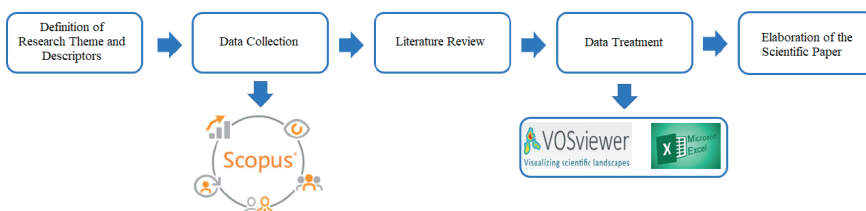


Figure 2. Research Flow

4. Results and Discussion

This section presents the results that were ascertained by analyzing the nations, journals and research gaps and their respective groupings, always accompanied by pertinent discussions. Initially, the 10 most cited countries on the subject of “Corporate Sustainable Development” that were among the most cited in the literature were identified, as shown in Figure 3.

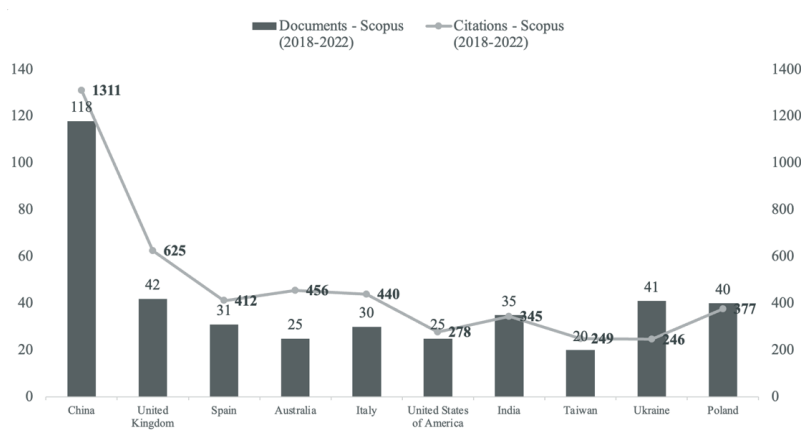


Figure 3. Top ten most frequently cited countries.

China stands out in the number of papers published and cited relative to others, more than twice as many as all the other nine countries. Although the country has a large-scale industrial park, research for corporate sustainable development is on the rise. It was found that only Taiwan and Australia in the top ten countries had fewer citations than the year before last. All the others had at least double the number of citations compared to the previous period. The following is the analysis of the top journals in the area, as shown in Figure 4. The Corporate Social Responsibility and Environmental was the journal that obtained the highest number of citations and the highest H-Index in the theme, having as major justification the act of having a scope focused on the theme “Corporate Sustainable Development”.

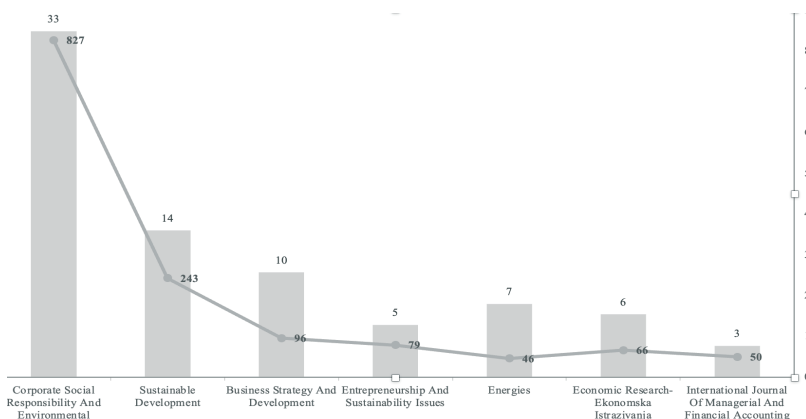


Figure 4. Top ten most cited journals.

After identifying the research gaps, the most relevant clusters of trends were organized based on the similarity each one contained, as shown in Table 1.

Table 1. Gap clusters of the 15 most cited articles.

Gap Cluster	Authors
Propose innovation policies and strategies to boost corporate sustainable development	Gangi et al. (2019), Grover et al. (2019), Jaramillo et al. (2018), Zhang and Zhu (2019)
Systematize the pillars for sustainable development of organizations	Bombiak and Marciniuk-Kluska (2018), Sobaih et al. (2021), Tsalis et al. (2020), Waal and Thijssens (2020), Xia et al. (2018), Ye et al. (2020)
Measure and evaluate the level of industrial sustainable development	Anser et al. (2018), Moldavska and Welo (2019)
Create methods and instruments that quantify the financial return of sustainable development	Abbas and Sağsan (2019), Ikram et al. (2019), Scherer and Voegtlin (2020)

In the first Cluster, “Propose innovation policies and strategies to boost SD”, involves gaps that discuss policies that leverage SD within organizations. Next, in “Systematize the pillars for organizations’ SD”, it mainly evaluates the good practices of company’s sustainable development. In “Measure and evaluate the level of industrial SD”, it seeks the proposition of a maturity matrix that identifies the real level of sustainable development of the organization. In relation to “Create methods and instruments that quantify the financial return of the SD”, quantifies the financial return for companies with the investment in SD.

5. Conclusion

The objectives of the work and the research question were duly met, identifying the main countries, journals, and scientific gaps of the 15 most cited articles. The main academic contribution was the verification that the Corporate Sustainable Development theme presents considerable material, which allows the expansion of in-depth studies of both associated themes. As main results we highlight the identified gaps that map future studies on the theme of Sustainable Development, these scientific gaps were grouped into 4 clusters, which are: “Propose innovation policies and strategies to boost corporate sustainable development” (4 gaps); “Systematize the pillars for sustainable development of organizations” (06 gaps); “Measure and evaluate the level of industrial sustainable development” (02 gaps); e “Create methods and instruments that quantify the financial return of sustainable development” (03 gaps). These identified clusters can

guide future studies on the theme, where the light of scientific theory has established the academy's study needs to help the planet's sustainable development. The main applied contribution was the exposure of the possibilities that companies can implement, both in relation to sustainability in the development of innovative technologies, and the use of policies to strengthen the pillars of sustainability. As a suggestion for future research, it is recommended that case studies be carried out, to ascertain the good practices that organizations can use to improve sustainable development.

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References

1. Reis JS da M, Espuny M, Nunhes TV, et al (2021) Striding towards Sustainability: A Framework to Overcome Challenges and Explore Opportunities through Industry 4.0. *Sustainability* 13:5232. <https://doi.org/10.3390/su13095232>
2. Milanesi M, Runfola A, Guercini S (2020) Pharmaceutical industry riding the wave of sustainability: Review and opportunities for future research. *J Clean Prod* 261:121204. <https://doi.org/10.1016/j.jclepro.2020.121204>
3. Geissdoerfer M, Morioka SN, de Carvalho MM, Evans S (2018) Business models and supply chains for the circular economy. *J Clean Prod* 190:712–721. <https://doi.org/10.1016/j.jclepro.2018.04.159>
4. United Nations (2020) Sustainable Development Goals. In: United Nations. <https://www.un-page.org/page-and-sustainable-development-goals>. Accessed 12 Jun 2021
5. Elkington J (1998) Accounting For The Triple Bottom Line. *Meas Bus Excell* 2:18–22. <https://doi.org/10.1108/eb025539>
6. Borowiecki M, Machado D, Paunov C, Planes-Satorra S (2019) Supporting research for sustainable development. OECD Publishing, Paris
7. Reis JS da M, Cardoso RP, Silva DEW, et al (2023) The Titans Sustainability and Industry 4.0 Working for The Planet Earth. *Rev Gestão e Secr* 14:1953–1965. <https://doi.org/10.7769/gesec.v14i2.1674>
8. Dobjani E, Tocilla A (2022) Adapting Sustainability Preserve the Memory Through Technology, for Sustainable Future Cities. In: 5th International Conference on Conservation of Architectural Heritage. pp 277–286
9. Baweja V (2017) Sustainable architecture. In: Shirazi MR, Keivani R (eds)

- Routledge Handbook of the History of Sustainability. Routledge, Abingdon, pp 273–295
10. Hajian M, Jangchi Kashani S (2021) Evolution of the concept of sustainability. From Brundtland Report to sustainable development goals. In: Sustainable Resource Management. Elsevier, Amsterdam, pp 1–24
 11. Klewitz J, Hansen EG (2014) Sustainability-oriented innovation of SMEs: a systematic review. *J Clean Prod* 65:57–75. <https://doi.org/10.1016/j.jclepro.2013.07.017>
 12. Di Vaio A, Hasan S, Palladino R, Hassan R (2023) The transition towards circular economy and waste within accounting and accountability models: a systematic literature review and conceptual framework. *Environ Dev Sustain* 25:734–810. <https://doi.org/10.1007/s10668-021-02078-5>
 13. Krasodomska J, Zieniuk P, Kostrzewska J (2023) Reporting on Sustainable Development Goals in the European Union: what drives companies' decisions? *Compet Rev An Int Bus J* 33:120–146. <https://doi.org/10.1108/CR-12-2021-0179>
 14. Reis JS da M, Espuny M, Cardoso RP, et al (2022) Mapping Sustainability 4.0: contributions and limits of the symbiosis. *Rev Gestão e Secr* 13:1426–1438. <https://doi.org/10.7769/gesec.v13i3.1417>
 15. Kaul S, Akbulut B, Demaria F, Gerber J-F (2022) Alternatives to sustainable development: what can we learn from the pluriverse in practice? *Sustain Sci* 17:1149–1158. <https://doi.org/10.1007/s11625-022-01210-2>
 16. Cervený LK (2022) Sustainable recreation and tourism: Making sense of diverse conceptualizations and management paradigms. *J Outdoor Recreat Tour* 38:100520. <https://doi.org/10.1016/j.jort.2022.100520>
 17. Bonnedahl KJ, Heikkurinen P, Paavola J (2022) Strongly sustainable development goals: Overcoming distances constraining responsible action. *Environ Sci Policy* 129:150–158. <https://doi.org/10.1016/j.envsci.2022.01.004>
 18. Fassbinder SD (2012) Greening Education. In: *Greening the Academy*. Sense Publishers, Rotterdam, pp 1–22
 19. Thomson G, Newman P (2016) Geoengineering in the Anthropocene through Regenerative Urbanism. *Geosciences* 6:46. <https://doi.org/10.3390/geosciences6040046>
 20. Rehman WU, Iqbal KMJ, Khan MI, et al (2022) Multi-Criteria Relationship Analysis of Knowledge, Perception, and Attitude of Stakeholders for Engagement towards Maritime Pollution at Sea, Beach, and Coastal Environments. *Sustainability* 14:16443. <https://doi.org/10.3390/su142416443>
 21. Selin H, Selin NE (2022) From Stockholm to Minamata and beyond: Governing

- mercury pollution for a more sustainable future. *One Earth* 5:1109–1125. <https://doi.org/10.1016/j.oneear.2022.09.001>
22. Narain D, Bull JW, Alikhanova S, et al (2022) A step change needed to secure a nature-positive future—Is it in reach? *One Earth* 5:589–592. <https://doi.org/10.1016/j.oneear.2022.05.016>
 23. Lozano R (2020) Analysing the use of tools, initiatives, and approaches to promote sustainability in corporations. *Corp Soc Responsib Environ Manag* 27:982–998. <https://doi.org/10.1002/csr.1860>
 24. Sahu A, Agrawal S, Kumar G (2023) Triple bottom line performance of manufacturing Industry: A value engineering approach. *Sustain Energy Technol Assessments* 56:103029. <https://doi.org/10.1016/j.seta.2023.103029>
 25. Yuen KF, Ong KW, Zhou Y, Wang X (2023) Social media engagement of stakeholders in the oil and gas sector: Social presence, triple bottom line and source credibility theory. *J Clean Prod* 382:135375. <https://doi.org/10.1016/j.jclepro.2022.135375>
 26. Guan H, Liu H, Saadé RG (2022) Analysis of Carbon Emission Reduction in International Civil Aviation through the Lens of Shared Triple Bottom Line Value Creation. *Sustainability* 14:8513. <https://doi.org/10.3390/su14148513>
 27. Kothari CR, Garg G (2019) *Research methodology methods and techniques*, 4^o. New Age International, Nova Deli
 28. Silva H de OG da, Costa MCM, Aguilera MVC, et al (2021) Improved Vehicle Painting Process Using Statistical Process Control Tools in an Automobile Industry. *Int J Qual Res* 15:1251–1268. <https://doi.org/10.24874/IJQR15.04-14>
 29. Zhang F, Zhu L (2019) Enhancing corporate sustainable development: Stakeholder pressures, organizational learning, and green innovation. *Bus Strateg Environ* 28:1012–1026. <https://doi.org/10.1002/bse.2298>
 30. Jaramillo JÁ, Sossa JWZ, Mendoza GLO (2018) Barriers to sustainability for small and medium enterprises in the framework of sustainable development—Literature review. *Bus Strateg Environ* 28:bse.2261. <https://doi.org/10.1002/bse.2261>
 31. Grover P, Kar AK, Ilavarasan PV (2019) Impact of corporate social responsibility on reputation—Insights from tweets on sustainable development goals by CEOs. *Int J Inf Manage* 48:39–52. <https://doi.org/10.1016/j.ijinfomgt.2019.01.009>
 32. Gangi F, Meles A, D’Angelo E, Daniele LM (2019) Sustainable development and corporate governance in the financial system: Are environmentally friendly banks less risky? *Corp Soc Responsib Environ Manag* 26:529–547. <https://doi.org/10.1002/csr.1699>
 33. Tsalis TA, Malamateniou KE, Koulouriotis D, Nikolaou IE (2020) New chal-

- allenges for corporate sustainability reporting: United Nations' 2030 Agenda for sustainable development and the sustainable development goals. *Corp Soc Responsib Environ Manag* 27:1617–1629. <https://doi.org/10.1002/csr.1910>
34. Xia B, Olanipekun A, Chen Q, et al (2018) Conceptualising the state of the art of corporate social responsibility (CSR) in the construction industry and its nexus to sustainable development. *J Clean Prod* 195:340–353. <https://doi.org/10.1016/j.jclepro.2018.05.157>
 35. Bombiak E, Marciniuk-Kluska A (2018) Green Human Resource Management as a Tool for the Sustainable Development of Enterprises: Polish Young Company Experience. *Sustainability* 10:1739. <https://doi.org/10.3390/su10061739>
 36. Sobaih AEE, Elshaer I, Hasanein AM, Abdelaziz AS (2021) Responses to COVID-19: The role of performance in the relationship between small hospitality enterprises' resilience and sustainable tourism development. *Int J Hosp Manag* 94:102824. <https://doi.org/10.1016/j.ijhm.2020.102824>
 37. Waal JWH van der, Thijssens T (2020) Corporate involvement in Sustainable Development Goals: Exploring the territory. *J Clean Prod* 252:119625. <https://doi.org/10.1016/j.jclepro.2019.119625>
 38. Ye N, Kueh T-B, Hou L, et al (2020) A bibliometric analysis of corporate social responsibility in sustainable development. *J Clean Prod* 272:122679. <https://doi.org/10.1016/j.jclepro.2020.122679>
 39. Anser MK, Zhang Z, Kanwal L (2018) Moderating effect of innovation on corporate social responsibility and firm performance in realm of sustainable development. *Corp Soc Responsib Environ Manag* 25:799–806. <https://doi.org/10.1002/csr.1495>
 40. Moldavska A, Welo T (2019) A Holistic approach to corporate sustainability assessment: Incorporating sustainable development goals into sustainable manufacturing performance evaluation. *J Manuf Syst* 50:53–68. <https://doi.org/10.1016/j.jmsy.2018.11.004>
 41. Abbas J, Sağsan M (2019) Impact of knowledge management practices on green innovation and corporate sustainable development: A structural analysis. *J Clean Prod* 229:611–620. <https://doi.org/10.1016/j.jclepro.2019.05.024>
 42. Ikram M, Zhou P, Shah SAA, Liu GQ (2019) Do environmental management systems help improve corporate sustainable development? Evidence from manufacturing companies in Pakistan. *J Clean Prod* 226:628–641. <https://doi.org/10.1016/j.jclepro.2019.03.265>
 43. Scherer AG, Voegtlin C (2020) Corporate Governance for Responsible Innovation: Approaches to Corporate Governance and Their Implications for Sustainable Development. *Acad Manag Perspect* 34:182–208. <https://doi.org/10.5465/amp.2017.0175>