

SUSTAINABILITY TRENDS AND DYNAMICS: AN INTEGRATIVE APPROACH TO ECONOMIC, SOCIAL, AND ENVIRONMENTAL PERSPECTIVES

Andra-Teodora GORSKI
andra.teodora.gorski@gmail.com

“LUCIAN BLAGA” UNIVERSITY OF SIBIU, ROMANIA

Elena-Diana RANF
ranfd@yahoo.com

“NICOLAE BĂLCESCU” LAND FORCES ACADEMY, SIBIU, ROMANIA

ABSTRACT:

Currently, there is a growing interest in sustainability and sustainable development and their implications for organisations and management around the world. The aim of this paper is to identify areas of interest and highlight key aspects of sustainability trends and dynamics, which were identified through searches on Google Trends and Web of Science (WoS). Analysis of the categories in WOS reveals the multidisciplinary nature of sustainability research, with a predominant focus on environmental challenges. There is also identified significant attention for technology and engineering, as well as notable research in management, economics, and business. In the context of sustainability concerns, organizations should not only adapt but also transform to address pressing issues. It is imperative that every organization integrates sustainability at its core. This requires aligning values, strategy, goals, objectives, key performance indicators (KPIs), targets, and initiatives/projects with sustainability. Achieving this is a complex process that also requires changes at the macro level. Regulations and governments play a central role in promoting corporate responsibility and accountability for sustainability initiatives. Moreover, education for sustainable development (ESD) can be a powerful tool in shaping behaviour and fostering a mindset and a culture of sustainability.

KEYWORDS:

Performance, strategy, sustainability, sustainable development, triple bottom line (TBL)

1. Introduction and research methodology

Today's challenges underscore the urgency for sustainability. Unsustainable practices are depleting our planet's finite resources, threatening the well-being of present and future generations (Whitmee et al., 2015). Biodiversity, which is essential

to the health and resilience of ecosystems, is rapidly disappearing, to a great extent due to human activities such as deforestation and habitat destruction. In addition, the burning of fossil fuels is an unsustainable activity that exacerbates climate change, posing significant risks to ecosystems, economies, and communities.

Besides environmental degradation, diversity loss, and resource exploitation, an important issue is linked with systemic injustices. These problems drive global inequalities, which undermine social justice and equity and are amplified by disparities in income, education, and healthcare. Adopting sustainable practices and policies is crucial for safeguarding the health of the planet (Howes et al., 2017), promoting social justice, economic stability, and ensuring a prosperous future for all. By doing so, we can address these interlinked challenges and pave the way for a more resilient, equitable and prosperous world.

Identifying a single definition of sustainability and sustainable development is challenging due to their broad meaning, which varies by field, region, and author. However, the definition presented in 'Our Common Future', also known as the Brundtland Report, is widely accepted. The UN World Commission on Environment and Development (WCED) introduced the concept of sustainable development during a conference in London, England, in April 1987. The report, crafted by a coalition of politicians and environmental experts, brings into discussion the pursuit of growth that fulfills current needs while safeguarding the resources and opportunities for future generations to fulfill their own needs (Keeble, 1988, 30).

The Brundtland Report laid the groundwork for the UN's Millennium Development Goals (MDGs), which guided the Development Agenda from 2000 to 2015. Subsequently, the Sustainable Development Goals (SDGs), introduced in 2015, succeeded the MDGs, delineating objectives for the next 15 years. Both documents serve as pivotal policy frameworks, providing direction for the UN, organizations, and states engaged in development endeavors. Unlike the MDGs,

the SDGs transcend simplistic objectives, aiming for a global shift in societal structures, including business operations, to mitigate human-induced environmental damage and ensure the survival of the human species.

Sustainable development is a global initiative with comprehensive objectives. It is primarily driven by public international bodies and nation-states, with multinational enterprises engaging through initiatives like the United Nations Global Compact. The focus of sustainable development has evolved to encompass social and economic goals within international development policy. Stakeholders, such as policymakers and managers, are discussing concerns about business practices that align with sustainability and sustainable development. Achieving global economic and social development while respecting planetary boundaries is the ultimate goal.

Rooted in Earth System Science, the Planetary Boundaries Framework outlines nine essential processes that are critical for defining a safe operating space for human societies to develop and thrive, and for maintaining the stability and resilience of our planet (Rockström et al., 2009; Steffen et al., 2015). Unfortunately, as shown in Figure no. 1, six of the nine thresholds have been exceeded (dark red - high risk area). These disturbances and negative impacts are mainly caused by human activities, which underline the need for immediate action to address them.

Achieving sustainability requires considering and operating within planetary boundaries (Ehrenstein et al., 2020). It is important to understand the limits of our planet's resources and ecosystems in order to make informed decisions that will ensure the long-term well-being of both present and future generations.

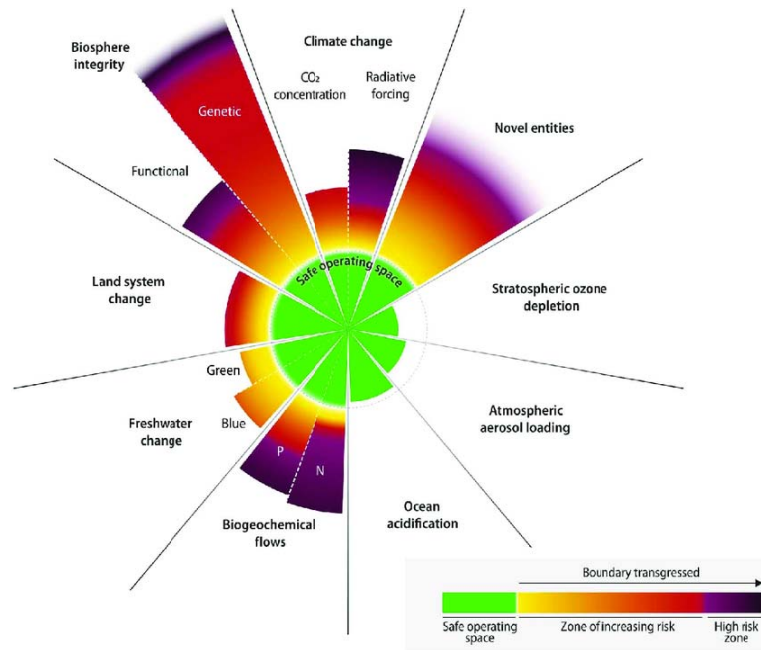


Figure no. 1: *The planetary boundaries – Current status of control variables*
(Source: Extracted from Richardson et al., 2023)

The aim of this paper is to present the concept of sustainability from an integrated and balanced approach of social, environmental, and economic dimensions and to identify the interest of the academic and research community in this field.

Paper objectives:

- To highlight the transition from a unidimensional economic-focused perspective to a comprehensive tridimensional perspective of sustainability, integrating social, environmental, economic considerations;
- To explore the popularity of sustainability concept and its evolution over time;
- To underscore the multifaceted nature of sustainability research and highlight its interdisciplinary nature.

The research methodology employed a multifaceted approach, including both qualitative and quantitative research. Through a literature review, the concept of sustainability has been examined from an integrated perspective that encompasses the economic, social, and environmental dimensions. This triple bottom line (TBL) perspective is central to fully understanding

the challenges and opportunities of sustainability. The present paper analyses trends and fluctuations in public interest on sustainability and other related topics using Google Trends. Scientific literature and research on the topic of sustainability was retrieved using the Web of Science Core Collection. Providing access to a wide range of peer-reviewed journal articles, conference proceedings, books, and other scholarly publications, WoS comprehensively covers the interdisciplinary literature on sustainability, which is a multidisciplinary topic.

2. Literature review

Critiquing the growth paradigm, Kallis and colleagues propose an alternative concept of “degrowth” that reopens the debate on the limits of growth and calls for radical political, economic, and social changes to substantially reduce resource and energy consumption. Although this proposal may be considered utopian and unrealistic, understanding and analyzing this approach can motivate positive changes in our actions and philosophy for a better future (Kallis et al., 2018).

2.1. Sustainability perspectives: environment, social, economic

The topic of sustainability has been widely debated in both academic literature and practice, particularly in relation to ecology and environmental degradation. Shrivastava (1995) argues that industrial development has brought obvious benefits such as increased wealth and prosperity. However, it has also contributed to environmental degradation. Major environmental issues such as global warming, biodiversity decline, ozone depletion, acid rain, air and water pollution continue to pose significant challenges to humanity. Unfortunately, companies may not be aware of their environmental impact and the fact that their products and actions contribute to environmental degradation. According to the author, sustainability has the potential to

reduce long-term risks associated with resource depletion, energy cost fluctuations, product liability, pollution, and waste management (Shrivastava, 1995). Carter & Rogers (2008) argue that sustainability cannot be approached solely through the lens of environmental issues, as this unbalanced approach fails to generate synergistic benefits in the long run. To achieve sustainability, all three perspectives – environmental, social, and economic – must be addressed in a balanced way. However, sustainability has mainly focused on environmental and ecological aspects, with social and economic aspects only implicitly recognized.

Figure no. 2 presents a tripartite representation of the concept of sustainability, using either a Venn diagram with three intersecting circles or three concentric circles, each representing one of the three pillars.

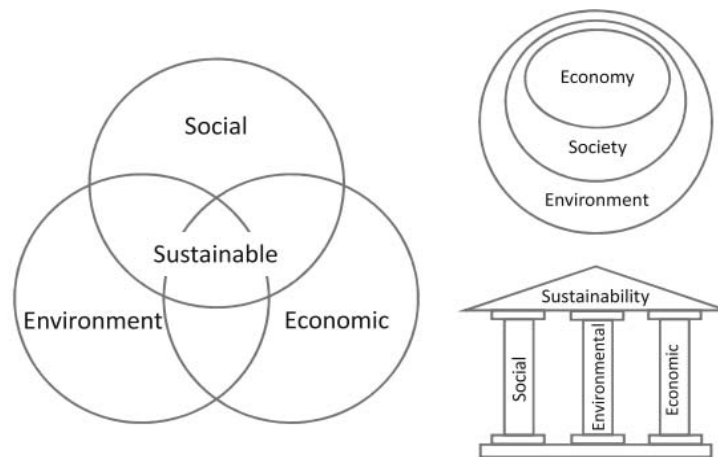


Figure no. 2: *Tripartite description of the concept of sustainability*
(Source: Extracted from Purvis et al., 2019)

Regarding sustainable development, Sikdar (2003) argues that it should involve a balanced approach towards economic development, environmental stewardship, and societal equity.

In their analysis of sustainable development, Gończ and collaborators (2007) emphasize the importance of a systemic process that aims to achieve a balance between ecological, social, and economic interests. This involves considering complex interactions and feedback. The authors identify several relevant aspects, including

generational equity, holism, globalization, and social dialogue (Figure no. 3). A minimal solution relies on compromise and reciprocity among diverse interests to achieve a satisfactory outcome. The best case is to attain win-win outcomes, maximizing benefits for all parties involved. In this regard, the long-term development dynamic is analyzed in social dialogue among the key participants. Sustainable development prioritizes the optimization of ecological, economic, and social interests, rather than compromise.

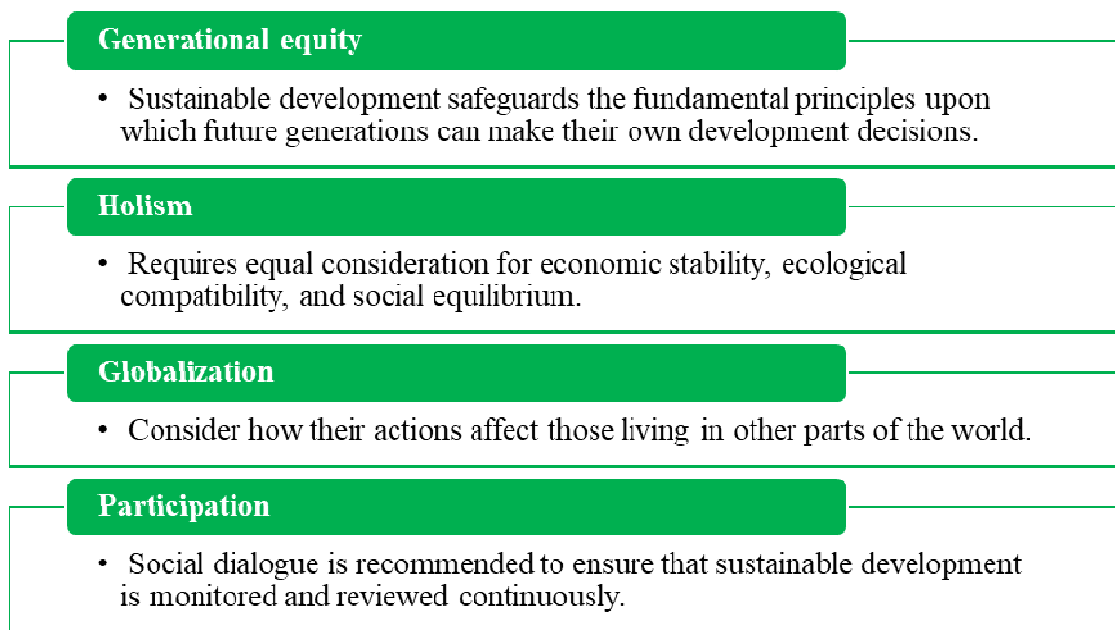


Figure no. 3: *Elements taken into consideration in sustainable development discussion*
(Source: Authors' summary based on Gończ et al., 2007)

2.2. “Tripple Bottom Line” (TBL) – a holistic approach toward a more sustainable and equitable world

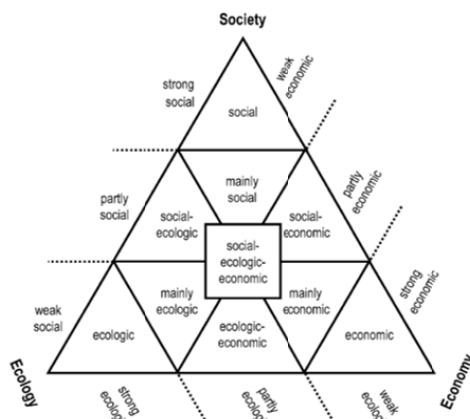
Sikdar (2003) notes that companies have been considering the reduction or elimination of waste and the design of cleaner processes for decades, mainly due to technological advances. However, it is only in the context of sustainability that societal concerns, such as the social welfare and equity dimensions, have been addressed. This brings into question the 3-D (three-dimensional), systemic approach to sustainability, that considers economic, social, and environmental aspects simultaneously.

In 1994, John Elkington proposed a sustainability framework to enable strategic analysis of the economic, social, and environmental impacts of organisations (Elkington, 1994). The author discusses the approach of organisations from a sustainability perspective. The proposed model includes the financial result, commonly referred to as the 'bottom line' or 'financial bottom line' concept, which represents the economic dimension, and extends this to include the environmental and social dimensions. Companies that strive for sustainability should not only focus on their

financial performance, but also on their impact on the environment and society. According to Elkington, success depends on meeting three dimensions: profitability, environmental quality, and social equity. The Triple Bottom Line (3P, TBL) model, attributed to John Elkington, integrates three main areas that generate the abbreviation 3P: 'Profit', 'People', and 'Planet/Environment'. An organization's purpose should not only be aimed at economic outcomes ('Profit'), but also be a catalyst for beneficial social ('People') and planet/environmental ('Planet') change (Elkington & Zeitz, 2014). The model lays the foundation for prosperity and sustainability. The TBL model addresses the three main dimensions of sustainability: economic, social, and environmental. This encourages social responsibility and business sustainability. The approach highlights that added value is provided by all three dimensions. Furthermore, the three pillars of sustainable development, or the three legs of the sustainability stool, should not be seen as static. Instead, they should be approached dynamically in business, adapted to the challenges of the new millennium and the new world (Elkington, 1997).

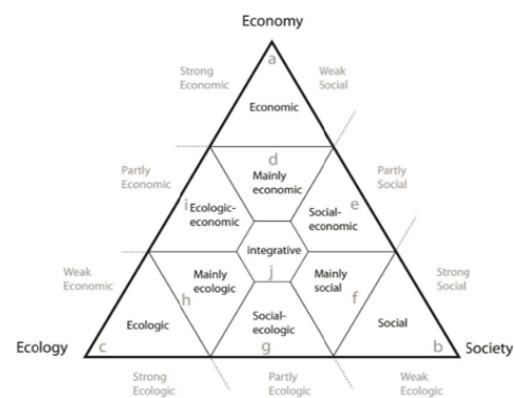
2.3. An integrative sustainability perspective

Sustainability involves a balanced integration of economic performance, social inclusion, and environmental responsibility for the benefit of current and future generations. Both Kleine & von Huff (2009)



a) Kleine, A., von Hauff, 2009

and Ludeke-Freund and colleagues (2018) use triangular analysis of sustainability issues (Figure no. 4). In their models, each vertex represents one of the fundamental dimensions of sustainable development – ecology, economy, and society.



b) Ludeke-Freund, 2018

Figure no. 4: *The integrated sustainability triangle - two approaches*
(Source: Kleine & von Huff, 2009; Ludeke-Freund et al., 2018)

Each of these three corners – economy, society, ecology – is connected by lines to the corresponding corners. The result is an equilateral triangle with ten areas:

- 3 equilateral triangles – “ecologic”, “social”, “economic” - clearly represented in the three corners and strongly associated with the three pillars that are specific to the classical representation of sustainable development.
- 3 equilateral triangles – “mainly ecologic”, “mainly social”, “mainly economic” – each dominated by one dimension but moderately influenced by the others.
- 3 equilateral triangles – “social-ecological”, “social-economic”, “ecological-economic” – equally influenced by the dimensions of the corners between them.
- 1 square “social-economic-ecologic” – central position, linked to all three dimensions.

Lüdeke-Freund and colleagues (2018) start from the triangle of Kleine & von

Hauff, but make three modifications (Figure no. 4b):

- Replace the central square with a hexagon to better represent the corners of the six surrounding triangles that meet in the center.
- Use the term 'Integrative' instead of 'social-economic-environmental' to capture the fusion of the three pillars of sustainability.
- Place economy on the top corner but argue that the triangle could in fact be oriented either way.

3. Presentation and analysis of search data

These are the search results from Google Trends and WOS.

3.1. Results from Google Trends

Figure no. 5 shows the results of a comparative search on Google Trends (period 2004-2024) for the terms sustainability and sustainable development across all domains.

Interest in sustainability was relatively constant between 2004 and 2017 but increased in 2018. In particular, possibly due to the COVID-19 pandemic, there was a more dramatic increase in interest in 2020-2023. Interest in the concept of sustainable development was high in 2004, but there was a steady decline until 2015, and a slight increase since then. Notably, similar to the

term sustainability, there was a significant increase in interest from 2020. Looking at the frequency with which the two terms are searched, it becomes clear that sustainability has become much more popular than its counterpart. In 2004, both terms were searched similarly on Google, but over time the search frequency for sustainability has increased significantly.

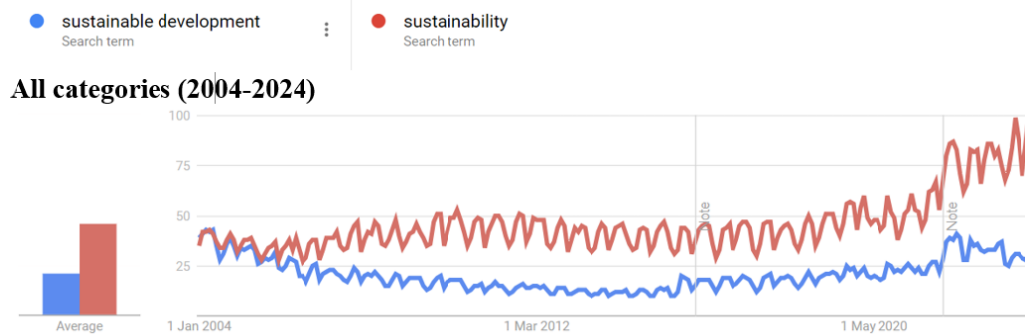


Figure no. 5: *Explore for sustainability and sustainable development topics – All categories*
(Source: Authors' computations based on Google Trends)

It is also interesting to identify the trend of these two concepts in the field of Management. As can be seen in Figure no. 6, the interest for it is approximately similar to that for aggregate

search across all available domains. Thus, while in 2024 the interest for the former term fluctuated - very high followed by very low - in the next years it started to constantly shift in favor of sustainability.

Management Category

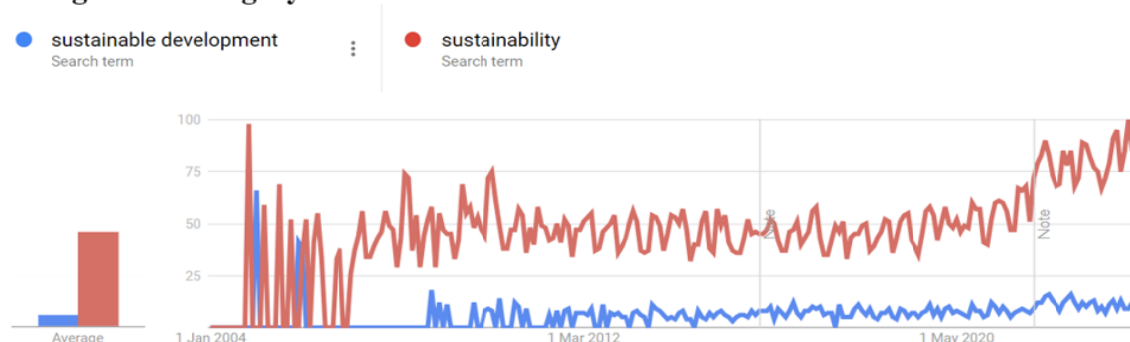


Figure no. 6: *Interest in sustainability and sustainable development concepts (2004-2024) - Google Trends search*
(Source: Authors' computations based on Google Trends)

Related topics were also identified in Google Trends. These are: Top natural environment, sustainability reporting, report, management, business, energy, sustainable development, industry, company, economic development, strategy, corporation, economy,

economics, corporate social responsibility, resource, project, goal, policy, finance, sustainable business, plan, technology, environmental, social, and corporate governance.

3.2. Results from Web of Science

There is also growing interest among the academic and research community in sustainability. Three searches were carried out in the Web of Science (WoS) Core Collection on the topics of “sustainability” and “sustainable development” on different dates, with unequal time intervals between them: (1) in July 2022; (2) February 2023; (3)

February 2024 (Table no. 1). Notably, on the “sustainability” topic, between July 2022 and February 2023, documents in English increased by 12,927, and between February 2023 and February 2024, documents in English increased by a further 61,435. Similarly, for the topic “sustainable development” the increases were 7,058 and 32,655 documents respectively.

Table no. 1
Number of documents on topics “sustainability” and “sustainable development”

Month and Year	Sustainability - Total	Sustainability - EN	Sustainable Development - Total	Sustainable Development - EN
July 2022	235,585	227,469	107,171	102,180
February 2023	248,728	240,396	114,398	109,238
February 2024	314,622	301,831	147,053	138,961

(Source: Authors’ computations based on data from WoS)

Figure no. 7 shows the evolution of the number of documents related to both sustainability and sustainable development from 2000 to the end of 2023. Documents on sustainability consistently outnumber those

on sustainable development. However, there is a steady increase in the number of documents on both topics, indicating a strong and growing interest in the academic and research community.

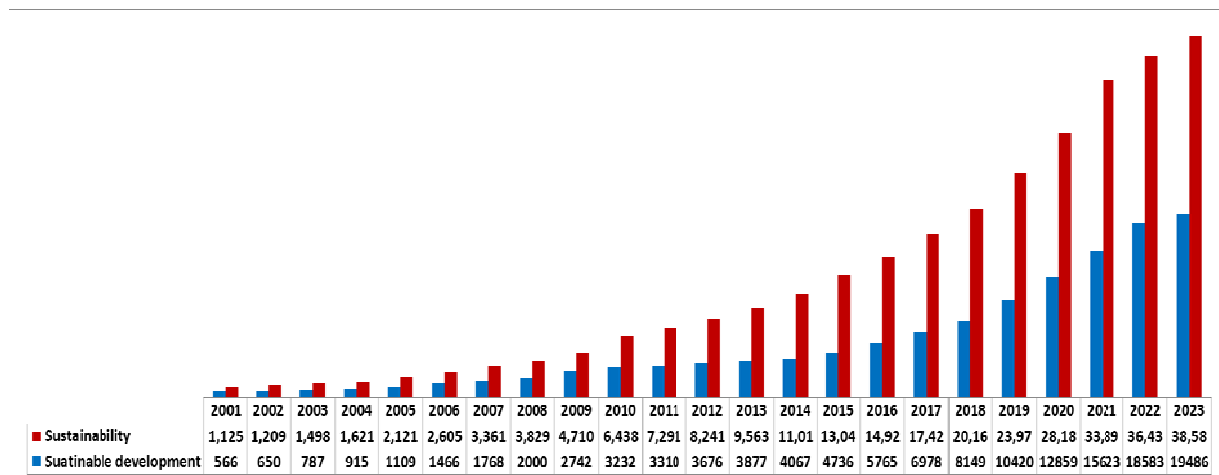


Figure no. 7: Topics sustainability and sustainable development – Evolution of the number of documents on WoS
(Source: Authors’ computation with data from WoS)

In terms of document type, as represented in Figure no. 8, the majority are in the early access category (62,690),

followed closely by proceeding paper (37,707) and review article (25,040).

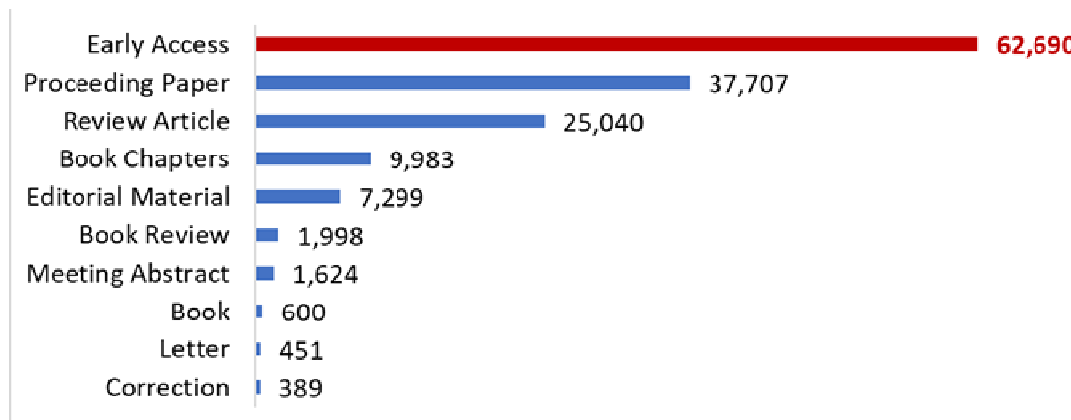


Figure no. 8: *Document Types*
(Source: Authors' computation with data from WoS)

Identifying the main WoS categories into which the published works fall was also considered important. Out of the 250 categories, the Top 10 were extracted and grouped into broader categories of interest. As displayed in Figure no. 9 the majority of documents – 125,772 – fall under the Environment group-category (represented with green color), composed of: Environmental Sciences – 69,362; Environmental Studies – 46,372; Ecology – 10,038. The next group-category is Technology & Engineering, which includes chemical and civil engineering, among

others. This category (blue color) comprises 98,659 documents, with Green Sustainable Science Technology having the highest number of documents at 51,900, followed by Engineering Environmental with 18,441 documents, Energy Fuels with 17,261 documents, and Engineering Civil with 11,057 documents. The Management-Economics-Business grouping – 47,523 documents (Management – 18,462; Economics – 14,496; Business – 14,565) ranks third in this analysis of results (Figure no. 9).

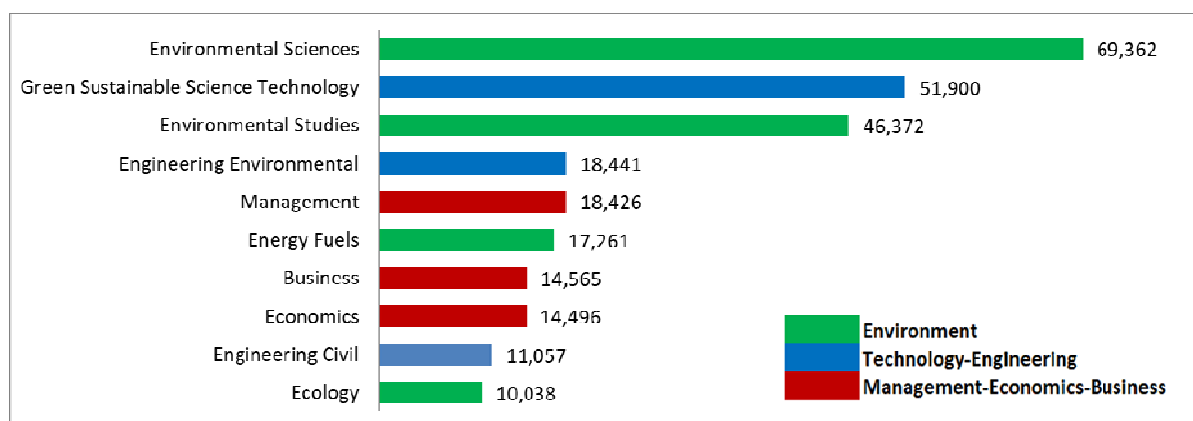


Figure no. 9: *Main WoS Categories*
(Source: Authors' computation with data from WoS)

In terms of Publications Title (Figure no. 10), Sustainability stands out significantly (20,326 documents) followed by Journal of Cleaner Production (8,411

documents) and by considerably greater distance by Science of the Total Environment (1,948 documents).

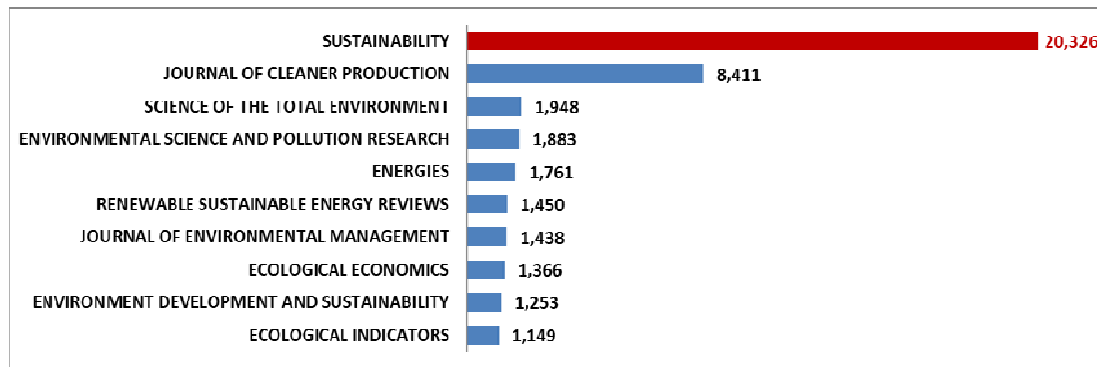


Figure no. 10: *Top Publication titles*
(Source: Authors' computation with data from WoS)

Figure no. 11 displays the top 10 publishers, with Elsevier in first place (73,261 documents), followed by MDPI (35,635 documents) and Springer Nature (32,873).

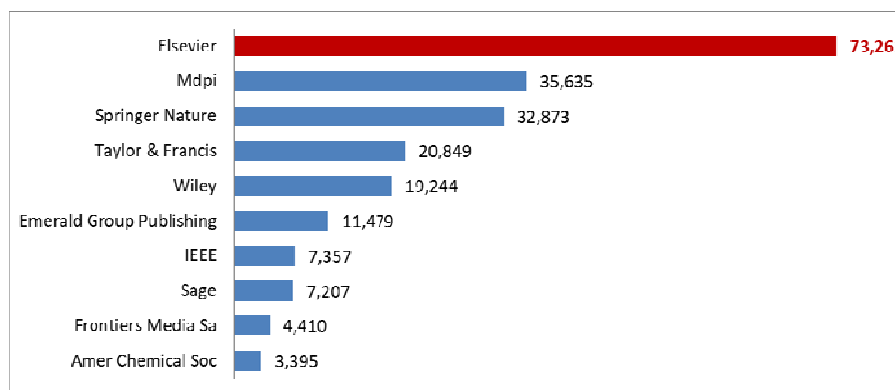


Figure no. 11: *Top Publishers*
(Source: Authors' computation with data from WoS)

In order to see which geographical areas the documents originate from, the top 15 countries were selected (Figure no. 12). The United States ranks first with 58,931 documents, followed by China with 34,616 documents and England with 27,248 documents.

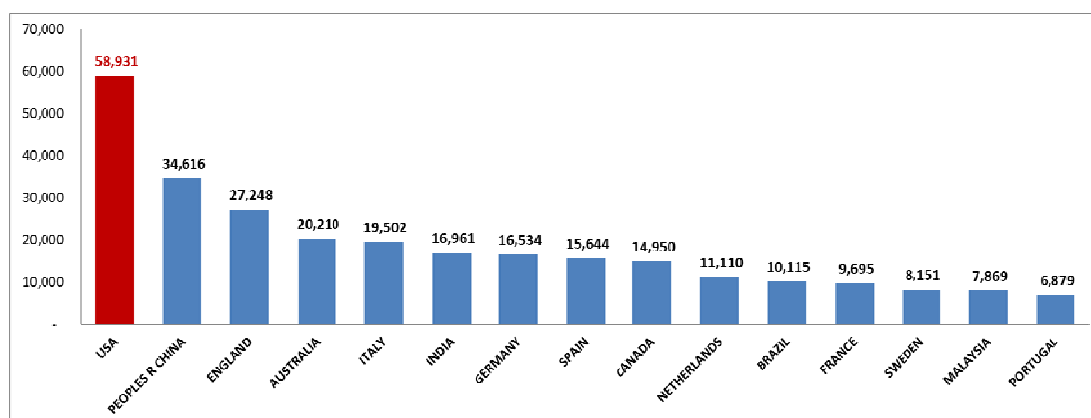


Figure no. 12: *Top 15 countries by number of documents*
(Source: Authors' computation with data from WoS)

Regarding the authors, considering their large number, the search was restricted to three areas: management-business-economics. Among the authors, those with more than 25 papers published on this topic

were represented graphically. Schaltegger ranks first - with 65 articles - followed by Sarkis and Garcías-Sánchez, both with 55 articles.

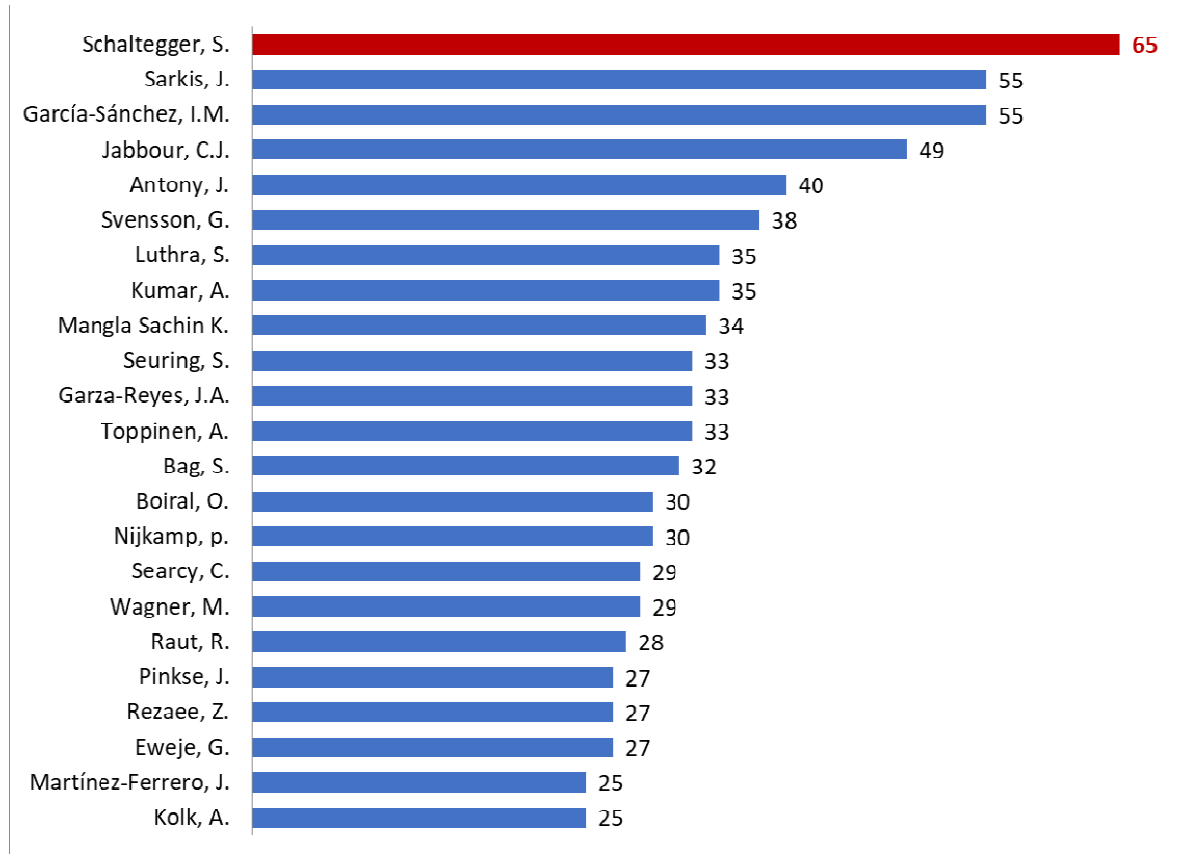


Figure no. 13: *Top Authors by number of publications*
(Source: Authors' computation with data from WoS)

It is also interesting to identify how research and publications have addressed the 17 Sustainable Development Goals (SDGs) contained in the 2030 Agenda. Figure no. 14 shows that interest in Climate Action (SDG 13) is in first place with 55,219 documents, followed by Sustainable Cities and

Communities (SDG 11) – with 32,592 documents, Life on Land (SDG 15) - 31,874 documents, Responsible Consumption and Production (SDG 12), and Good Health and Well-being (SDG 03) with 30,806 documents.

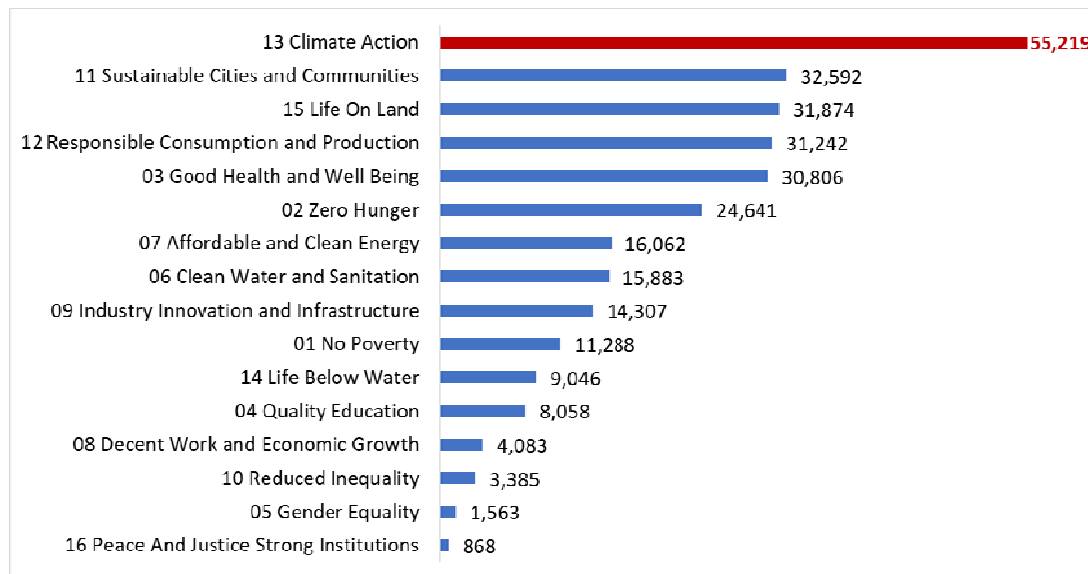


Figure no. 14: *Publications that addressed the 17 Sustainable Development Goals (SDGs) of the 2030 Agenda*
(Source: Authors' computation with data from WoS)

4. Conclusions and future directions

Currently, there is a growing emphasis on sustainability and sustainable development at the academic, research, and practical levels. Some conclusions drawn from the searches performed on Google Trends and WoS, and supported by literature review, are presented in the following:

- There is an increased concern for sustainability and sustainable development - both at the academic, research and practical levels. The affirmation is supported based on the large number of searches for these concepts (Google Trends), as well as on the number of documents identified in WoS.

- The analysis of Web of Science categories reveals a predominant focus on environmental sciences, significant attention to technology and engineering, and a notable presence in management, economics, and business. This distribution highlights the multidisciplinary nature of sustainability research, with researchers most concerned with environmental challenges alongside technological and economic considerations.

- The United States is the leading contributor, followed by China and England.

- Research and publications have addressed the 17 Sustainable Development Goals (SDGs) outlined in the 2030 Agenda. Among these goals, Climate Action (SDG 13) has received the most interest, followed by Sustainable Cities and Communities (SDG 11), and Life on Land (SDG 15). Responsible Consumption and Production (SDG 12) and Good Health and Well-being (SDG 03) have also garnered considerable attention.

- Sustainability aims to promote social and intergenerational equity by managing resources, wealth, and the environment for present and future generations.

- A holistic sustainability strategy is required to achieve a balanced integration of economic performance, social inclusion, and environmental responsibility.

- Dynamic approach should be aligned with the opportunities and challenges of the new millennium and the changing world - which directly and indirectly impact long-term success.

The implementation of sustainability at the organizational level, also known as corporate sustainability (Dentchev, 2004), is a crucial area of research. The Elkington TBL framework compels organizations to consider the social and environmental impacts of their activities, processes, and practices. Sustainable business development is based on the synergistic, harmonious, and balanced development of three pillars economic, social, and environmental (Schaltegger & Wagner, 2006). In this regard, a framework for business sustainability (BS) is proposed, which includes metrics based on the dimensions of the Triple Bottom Line (TBL) approach. The BS framework has been developed and empirically tested and can be used by companies interested in assessing and monitoring the impact of their business practices on the market and society (Svensson et al., 2016).

Grasping the essence of sustainability entails comprehending its broader implications as well as its relevance to organization. This involves recognizing key issues, understanding both short-term and long-term benefits, and discerning between transformational change for sustainability and mere 'greening the status quo' in order to offer short-term gains. To address the complex and systemic issues sustainability-related, organizations must adopt a holistic approach, that involves system thinking. Alongside economic viability, environmental stewardship and social responsibility are critical pillars for promoting sustainability and ensuring long-term organizational success and progress towards a more sustainable future. At the micro-level, it is essential for every organization to align its values, strategies, goals, objectives, KPIs, targets, and initiatives or projects with sustainability.

In a dynamic and competitive world, organizations should manage risks and take advantage of sustainability opportunities. To address pressing sustainability issues, organizations must not only adapt but also

transform. It is imperative to integrate sustainability into every facet of business. Sustainability is not just a trend but a fundamental aspect of future-proofing every organization. Organisations must craft solutions that drive efficiency while promoting environmental and social responsibility. Innovative strategies, merged with emerging technologies, enable organisations to navigate challenges and cultivate trust, facilitating seamless transitions. Challenges can become opportunities for growth, resilience, and long-term success. It is a transformational journey, from reducing carbon footprints, energy consumption and waste, to enhancing supply chain transparency and offering shared sustainable value for the whole stakeholder ecosystem.

At the macro level, regulators and governments have a central role in promoting corporate responsibility and accountability for sustainability initiatives. Governments can stimulate investment in sustainability by providing tax incentives. They can also enforce change through legislative sanctions in situations where individual, community or corporate norms encourage harmful behaviors towards the environment and society. Moreover, through initiatives such as the Sustainable Development Goals (SDGs) and national sustainable development strategies, governments provide a roadmap for achieving a harmonious balance between economic growth, social equity, and environmental stewardship. By mandating sustainability disclosure and requiring companies to assess and mitigate their environmental and social impacts, regulations empower consumers, investors, and stakeholders to make informed decisions and hold companies accountable for their actions.

Education for sustainable development (ESD) is a powerful tool for addressing pressing environmental, social, and economic challenges. It equips individuals with the knowledge, skills,

competencies, values, and attitudes required to promote sustainability (Gorski et al., 2023). Educational institutions and practitioners worldwide should be committed to embedding ESD into curricula at all educational levels. Developing skills to promote societal

change towards sustainable futures is a key strategy. Moreover, this approach can shape behaviors and foster a sustainability mindset, promoting responsible action. This is crucial for driving positive change in society.

REFERENCES

Carter, C.R., & Rogers, D.S. (2008). A framework of sustainable supply chain management: Moving toward new theory. *International Journal of Physical Distribution & Logistics Management*, Vol. 38, Issue 5, 360–387. Available at: <https://doi.org/10.1108/09600030810882816>.

Dentchev, N.A. (2004). Corporate Social Performance as a Business Strategy. *Journal of Business Ethics*, Vol. 55, Issue 4, 395–410. Available at: <https://doi.org/10.1007/s10551-004-1348-5>.

Ehrenstein, M., Calvo-Serrano, R., Galán-Martín, Á., Pozo, C., Zurano-Cervelló, P., & Guillén-Gosálbez, G. (2020). Operating within Planetary Boundaries without compromising well-being? A Data Envelopment Analysis approach. *Journal of Cleaner Production*, Vol. 270, 121833. Available at: <https://doi.org/10.1016/j.jclepro.2020.121833>.

Elkington, J. (1994). Towards the Sustainable Corporation: Win-Win-Win Business Strategies for Sustainable Development. *California Management Review*, Vol. 36, Issue 2, 90–100. Available at: <https://doi.org/10.2307/41165746>.

Elkington, J. (1997). *Cannibals with forks: The triple bottom line of 21st century business*. Capstone.

Elkington, J., & Zeitz, J. (2014). *The breakthrough challenge: 10 ways to connect today's profits with tomorrow's bottom line* (First edition). Jossey-Bass, A Wiley Brand.

Gończ, E., Skirke, U., Kleizen, H., & Barber, M. (2007). Increasing the rate of sustainable change: A call for a redefinition of the concept and the model for its implementation. *Journal of Cleaner Production*, Vol. 15, Issue 6, 525-537. Available at: <https://doi.org/10.1016/j.jclepro.2006.05.018>.

Gorski, A.-T., Ranf, E.-D., Badea, D., Halmaghi, E.-E., & Gorski, H. (2023). Education for Sustainability — Some Bibliometric Insights. *Sustainability*, Vol. 15, Issue 20, 14916. Available at: <https://doi.org/10.3390/su152014916>.

Howes, M., et al. (2017). Environmental Sustainability: A Case of Policy Implementation Failure? *Sustainability*, Vol. 9, Issue 2, 165. Available at: <https://doi.org/10.3390/su9020165>.

Kallis, G., Kostakis, V., Lange, S., Muraca, B., Paulson, S., & Schmelzer, M. (2018). Research On Degrowth. *Annual Review of Environment and Resources*, Vol. 43, Issue 1, 291-316. Available at: <https://doi.org/10.1146/annurev-environ-102017-025941>.

Keeble, B.R. (1988). The Brundtland report: 'Our common future.' *Medicine and War*, Vol. 4, Issue 1, 17-25. Available at: <https://doi.org/10.1080/07488008808408783>.

Kleine, A., & von Hauff, M. (2009). Sustainability-Driven Implementation of Corporate Social Responsibility: Application of the Integrative Sustainability Triangle. *Journal of Business Ethics*, Vol. 85(S3), 517-533. Available at: <https://doi.org/10.1007/s10551-009-0212-z>.

Lüdeke-Freund, F., Carroux, S., Joyce, A., Massa, L., & Breuer, H. (2018). The sustainable business model pattern taxonomy — 45 patterns to support sustainability-oriented business model innovation. *Sustainable Production and Consumption*, Vol. 15, 145-162. Available at: <https://doi.org/10.1016/j.spc.2018.06.004>.

Purvis, B., Mao, Y., & Robinson, D. (2019). Three pillars of sustainability: In search of conceptual origins. *Sustainability Science*, Vol. 14, Issue 3, 681-695. Available at: <https://doi.org/10.1007/s11625-018-0627-5>.

Richardson, K., et al. (2023). Earth beyond six of nine planetary boundaries. *Science Advances*, Vol. 9, Issue 37, eadh2458. Available at: <https://doi.org/10.1126/sciadv.adh2458>.

Rockström, J., et al. (2009). A safe operating space for humanity. *Nature*, Vol. 461(7263), 472-475. Available at: <https://doi.org/10.1038/461472a>.

Schaltegger, S., & Wagner, M. (2006). Integrative management of sustainability performance, measurement and reporting. *International Journal of Accounting, Auditing and Performance Evaluation*, Vol. 3, Issue 1, 1-19. Available at: <https://doi.org/10.1504/IJAAPE.2006.010098>.

Shrivastava, P. (1995). The Role of Corporations in Achieving Ecological Sustainability. *The Academy of Management Review*, Vol. 20, Issue 4, 936. Available at: <https://doi.org/10.2307/258961>.

Sikdar, S.K. (2003). Sustainable development and sustainability metrics. *AIChE Journal*, Vol. 49, Issue 8, 1928-1932. Available at: <https://doi.org/10.1002/aic.690490802>.

Steffen, W., et al. (2015). Planetary boundaries: Guiding human development on a changing planet. *Science*, Vol. 347(6223), 1259855. Available: <https://doi.org/10.1126/science.1259855>.

Svensson, G., et al. (2016). Framing stakeholder considerations and business sustainability efforts: A construct, its dimensions and items. *Journal of Business & Industrial Marketing*, Vol. 31, Issue 2, 287-300. Available at: <https://doi.org/10.1108/JBIM-05-2014-0094>.

Whitmee, S., et al. (2015). Safeguarding human health in the Anthropocene epoch: Report of The Rockefeller Foundation–Lancet Commission on planetary health. *The Lancet*, Vol. 386(10007), 1973-2028. Available at: [https://doi.org/10.1016/S0140-6736\(15\)60901-1](https://doi.org/10.1016/S0140-6736(15)60901-1).