

The Contribution of Sustainable Businesses to Achieving Sustainable Development Goals: A Bibliometric Analysis

Loredana VIZITEU*

Ștefan cel Mare University, Suceava, Romania

**Corresponding author, loredanaviziteu2018@gmail.com*

Ancuța LUCACI

Ștefan cel Mare University, Suceava, Romania

ancuta.lucaci@usm.ro

Maria ORHEAN-VRANCEANU

Ștefan cel Mare University, Suceava, Romania

ancuta.lucaci@usm.ro

Abstract. *The paper examines the role of sustainable businesses in achieving the Sustainable Development Goals. Recognising the significance of business participation in attaining a more sustainable future, this study uses bibliometric analysis to assess the present status of research in this area. To begin, the paper emphasises the growing importance of understanding the role businesses can play in advancing the SDGs. This research seeks to bring to light existing knowledge gaps and trends in the scientific literature that investigate this critical link. Using a systematic approach, the study analyses a comprehensive dataset of academic papers to address the following subjects: the evolution of the research on sustainable business, the authors, organisations, countries, documents, and sources that have impacted the development of the field, the issues that framed the research on sustainable business, and the contribution of sustainable business practices to specific SDGs. Investigation uncovers key insights, reveals research focus trends, and specific areas of the Sustainable Development Goals. These conclusions underscore the evolving understanding of sustainable businesses' potential contributions to achieving the SDGs. The study provides a comprehensive overview of the research landscape using a robust bibliographic methodology. The findings provide valuable information for researchers, companies, and policy makers aimed at further increase the positive impact of sustainable business practices on the achievement of the ambitious goals of the United Nations SDG agenda. The contribution of sustainable businesses to achieving Sustainable Development Goals is highlighted by scientific papers with research focusing on the correlation between sustainable business and SDG indicators. An attention-grabbing aspect is that most scientific papers on sustainable business were published in connection with the "Industry Innovation and Infrastructure" and "Responsible Consumption and Production" indicators.*

Keywords: sustainable business, Sustainable Development Goals, bibliometric analysis, Web of Science, VOSviewer.

Introduction

Sustainability has become increasingly important in the twenty-first century. The world faces more complicated concerns, such as climate change and diminishing resources, as well as social inequity and economic instability. Addressing these challenges requires a joint effort, and companies, as important actors in society, have enormous potential to contribute to constructive change.

This prospective is reflected in the United Nations Sustainable Development Goals (SDGs), a determined agenda adopted in 2015 which sets out 17 interrelated objectives aimed at creating a

more sustainable future for companies and people. Among other objectives, the fight against poverty, access to clean water and sanitation, responsible consumption and production, and climate change are noteworthy. Businesses can have a significant impact on the achievement of the SDGs through their activities and innovations, which is why their involvement is crucial.

In this sense, understanding the contribution of sustainable businesses (which actively integrate environmental and social issues into their practices) to the promotion of the SDGs is critical. In this particular manner, the society and the economy can assess the impact of sustainability efforts, identify areas for improvement and create ways of more effective cooperation between companies and other stakeholders.

Therefore, this study aims to perform a bibliometric analysis, by examining the volume and focus of academic research exploring the link between sustainable businesses and the Sustainable Development Goals and the emerging trends and knowledge gaps within this field. Bibliometric analysis is a complex instrument for examining publishing patterns and features in certain study fields.

This article uses a comprehensive literature analysis to show the evolving understanding of the contributions of sustainable enterprises to the achievement of the Sustainable Development Goals. Using concrete approaches and trends interpreting, the study seeks to provide valuable insights to researchers, companies and policy makers pursuing a more sustainable framework. This specific research can contribute to the promotion of effective practices and to the positive impact of businesses on the development of a vibrant and sustainable environment.

Literature review

In order to support research into the role of entrepreneurship in the context of sustainable development, we will focus on the theories of economists investigating the concept of sustainable development, from the economic, social and environmental perspectives, on the complexity of life quality. These theories promote a balance between the three basic pillars of economic development, social equity, and environmental protection.

Joseph Schumpeter, in his 1934 book ‘The Theory of Economic Development’, was one of the first economists to recognise that economics can be better understood in other social sciences. He pointed out that innovations can be an opportunity to achieve financial balance in a country. William J. Baumol, in his work ‘A Short Theory of Innovative Entrepreneurship’, considers innovative entrepreneurs to be responsible for the revolutionary development of the economy, thus supporting Schumpeter's perspective. Milton Friedman, in his book “Capitalism and Freedom”, argues that the social responsibility of business lies in increasing profits. This view is challenged by those who argue that business should have social responsibilities other than profit maximisation. The role of the entrepreneur, an important concept in economics, was introduced by Richard Cantillon, who discussed the entrepreneur as an innovator who takes risks in business ventures. Robert M. Solow, winner of the 1987 Nobel Prize in Economics, developed a mathematical model in the 1950s that illustrates how technological advances can stimulate economic growth more than capital accumulation and labour force growth. These theories and perspectives give a comprehensive overview of the role of entrepreneurs in sustainable development, highlight the diversity of approaches, and emphasise the importance of innovation and balance in the management of economic, social, and environmental resources.

Recent research has emphasised various aspects of eco-innovation and the dissemination of clean technologies in order to better understand business models in the context of technological,

organisational, and social innovation. These include the way sustainable technologies are adopted in society, transition management, and research into innovative systems. It also highlights the importance of factors promoting sustainable innovation, such as regulation and company characteristics, and the interaction between these factors and innovation and social systems.

Boons and Lüdeke-Freund (2013) explored sustainable innovation business models and have identified three main flows. The first stream focusses on technology, especially in the Internet era, when it was recognised that traditional ways of generating profits were not sufficient for new technologies. There is thus a vast literature that studies how technology affects the organization and profitability of enterprises. The second stream, the organizational stream, examines the business model as a strategic management tool, focusing on improving companies' value chain and organizational effectiveness. The third stream is strategy-orientated and adds the element of market competition to the focus on organisational effectiveness. This stream highlights the importance of creating and delivering value to customers and how the business model can become a source of competitive advantage through innovation.

An important issue for future investigation is how strategy and competition can support the commercialization of sustainable innovations through business model change. The financial model reflects an appropriate distribution of economic costs and benefits among the actors involved in the business model and accounts for environmental and social impacts (Maas and Boons, 2010). Openness to social and technological innovations is necessary to avoid replicating the weaknesses of Western dominant business models in emerging and survival economies (Hart, 1997).

Over the last years, the interest in sustainable innovation has been increasing. Current business models must focus on the creation of products and services that have long-term benefits for the economy, society, and the environment. Boons et al. (2013) highlighted three key aspects of business models that are crucial for sustainable innovation: (I) Value proposition, (II) Configuration of value proposition, and (3) Distribution of costs and benefits. In terms of value proposition, businesses should analyse consumer needs and offer a meaningful value for its products or services, by considering the balance between economic, social, and ecological characteristics. The configuration of the value proposition involves the creation of a new entrepreneurial system where firms should consider technical and social aspects. The last key aspect indicate that all actors involved (customers, suppliers, communities) should have a fair share of costs and rewards.

Bocken et al. (2014) have developed a sustainable business model archetypes grouped into three main categories based on the type of innovation they focus on: technological innovation, social innovation, and organizational innovation. This paper presents a method for connecting the theoretical concept of business model innovation with practical techniques to achieve industrial sustainability.

Other authors have discussed the 'Triple Layered Business Model Canvas' (TLBMC) as a tool to design more sustainable and resilient business models (Joyce and Paquin, 2016). They argue that sustainability is the driving force behind creative innovation for many businesses and that improvements to sustainability need innovation within current business models to establish new methods of providing and collecting value, therefore changing the basis of competitiveness.

To gain a competitive advantage in terms of sustainability, businesses need to migrate to a new business model, sustainable business. However, the literature reveals that many sustainable business innovations fail on the market (Geissdoerfer and Evans, 2018). In the process of becoming more sustainable, companies must know how to overcome the challenges that derive from the implementation of sustainable activities. From this point of view, it is imperative for companies to

be acquainted with how organisations successfully transition from old to new, sustainable business models.

Di Vaio et al. (2020) explores the potential of Artificial Intelligence (AI) in building sustainable business models, specifically within the context of achieving the UN's Sustainable Development Goals (SDGs). Their analysis suggests that AI may influence production and consumption patterns in order to better manage resources, but ethical, social, economic and legal considerations need to be carefully considered. While limited resources often pose a barrier to adopting cutting-edge technology, organisations can leverage AI both as a tool and as an outcome to achieve sustainable business models. However, successful implementation requires the building of a supportive foundation through both dedicated infrastructure and a culture that embraces innovation and sustainability.

The investigation of Rosati and Faria (2019) indicates a link between higher levels of intangible assets (such as brand values and intellectual property) and companies choosing to report on the SDGs in their sustainability reports. This is because companies with strong intangible assets have better capabilities (e.g. technology and marketing) and are better positioned to be more proactive in this field, committing to sustainable objectives. However, it is important to note that when considering factors such as the country and industry in which the company operates, this relationship disappears. This indicates that in addition to intangible assets, other factors also play an important role in the decision of a company to report on the SDGs.

Methodology

In this paper, we examined the contribution of sustainable businesses to achieving Sustainable Development Goals, particularly in relation to the following research questions:

RQ1: How has sustainable business research landscape evolved over time, and what authors, organizations, countries, documents and sources have played a central role in this evolution?

RQ2: What emerging topics and approaches are currently attracting the most attention in sustainable business research?

RQ3: To what extent do different sustainable business practices (e.g., renewable energy, fair trade, circular economy) contribute to specific SDGs (e.g., poverty reduction, clean water, climate action)?

To answer these research questions, we applied mixed research methods, combining quantitative and qualitative research methods to provide a more complete understanding of the contribution of sustainable businesses to achieving Sustainable Development Goals.

In the first part of the article, we conducted a bibliometric analysis in which we examined the current state of knowledge about sustainable business through a comprehensive review of relevant studies. The bibliometric analysis emphasized the evolution of sustainable business research over time, as well as the authors, documents, organizations, countries and sources that have mapped this fundamental research concept. Furthermore, in order to explore the landscape of sustainable business, the analysis employed VOSviewer as a software of high quality for conducting a bibliometric co-occurrence analysis. The investigation used a modern tool to analyse the thematic landscape of sustainable business. VOSviewer enabled the analysis of the frequency and interconnectedness of key phrases collected from the academic papers, ultimately merging them into a visual network. By accurately examining the size and positioning of nodes (representing individual phrases) and their connecting boundaries (highlighting co-occurrence), the research uncovered prominent research clusters and shaped prospective developing trends.

The bibliometric analysis employed a database accurately extracted from Web of Science platform. The selection of academic papers from this platform ensures the inclusion of high-impact and peer-reviewed publications. Therefore, the database extracted from the Web of Science platform contains 1,305 scientific articles written and published in the field of sustainable business. In the Web of Science platform, the query phrase "sustainable businesses" has been entered into the search engine as a title in scientific publications. No time period condition was defined because the aim was to highlight the evolution of the field since its emergence among researchers.

The second part of the article is an in-depth analysis of the literature extracted from the Web of Science platform to visualise the contribution of sustainable business to achieving the Sustainable Development Goals, according to its most influential components.

Results and discussions

This section of the paper presents the main findings of the bibliometric analysis on sustainable businesses, on the one hand, and the contributions of sustainable business to achieving Sustainable Development Goals.

Bibliometric analysis of sustainable business research

A primary step in the bibliometric analysis was to explore the evolution of sustainable business research over time, according to the Web of Science platform. From this perspective, Figure 1 illustrates a consistent increase in the number of publications on sustainable business since 2012 until today. It can be concluded from this that researchers have shown an active interest in this area during this time. Furthermore, this situation may be a result of the implementation of Sustainable Development Goals by the United Nations Conference on Sustainable Development in Rio de Janeiro in 2012.

Indirectly, the SDGs have created a new context for the international business environment, encouraging companies to become more sustainable by implementing specific actions in their long-term strategies. As a result, researchers have become increasingly interested in sustainable business practices and how their actions influence the achievement of these SDGs. On the other hand, the economic and technological environment has provided new solutions for businesses to become more efficient and reduce their costs.

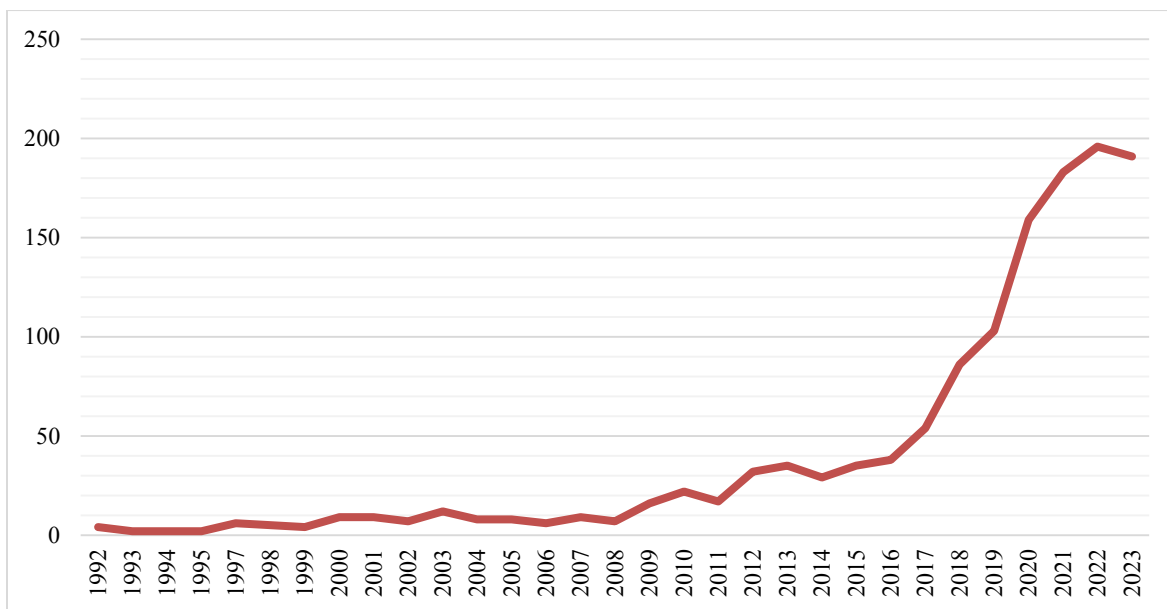


Figure 1. The Evolution of Scientific Papers on "Sustainable Business"

Source: Authors' representation based on Web of Science database.

Furthermore, the results indicate that of the 1,305 scientific publications exported from the Web of Science platform, 1,082 are scientific articles (Figure 2). The remaining scientific publications were published under another document type (83%).

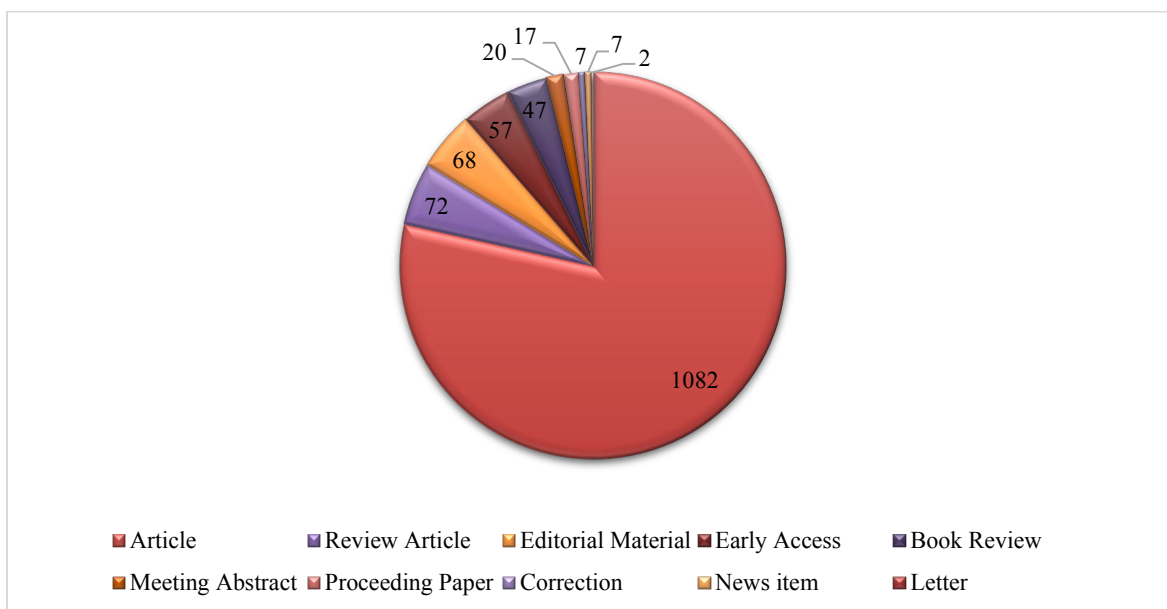


Figure 2. Structure of scientific papers by document type

Source: Authors' representation based on Web of Science database.

This paper further explored the most influential authors publishing on sustainable business. According to the data inserted in Figure 3, the most influential authors with scientific publications related to sustainable business are *Nancy Bocken* (14 publications), *Goran Svensson* (8

publications) *Steve Evans* (7 publications), and *Florian Ludeke-Freund* (6 publications). Nancy Bocken is a professor of Sustainable Business at Maastricht University in the Netherlands. Goran Svensson is also a professor at the Kristiania University College in Norway. His main research focusses on issues related to business activity, sustainability, sustainable development, supply chains, and business practices. Steve Evans is a professor at the University Of Cambridge School Of Technology and his academic papers focus on circular business models, sustainable business models, innovation in firms and sustainability innovation. The last author, Florian Ludeke-Freund, is a professor of sustainability. His work is based at the ESCP Business School. ESCP Business School is the oldest business school in the world and has campuses in several parts of Europe: Paris, London, Berlin, Madrid, and Turin.

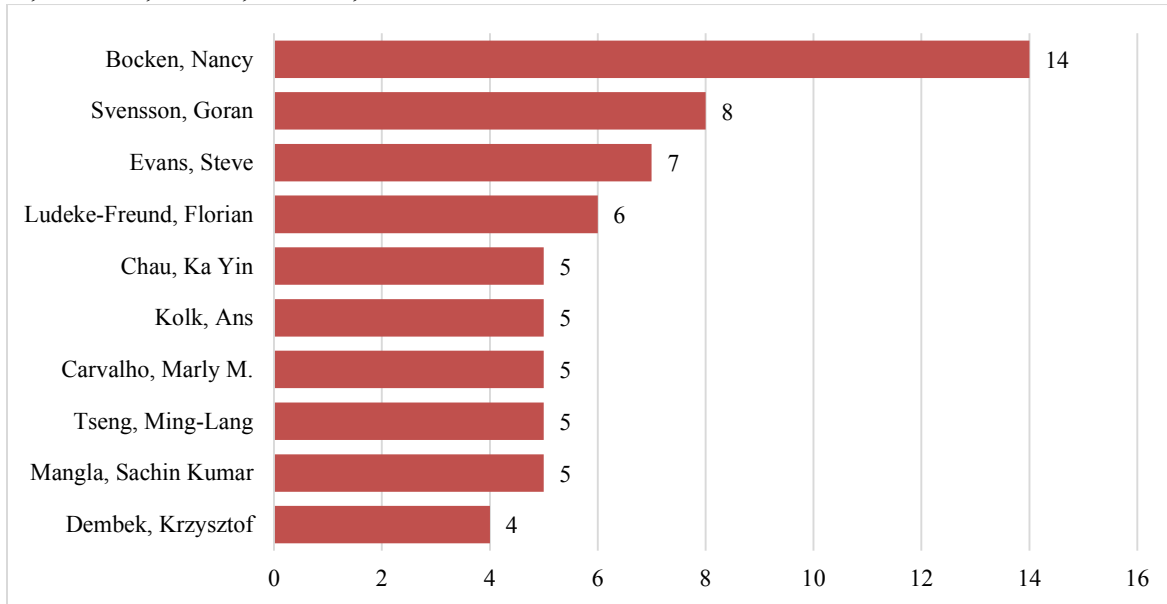


Figure 3. Top authors publishing on 'sustainable businesses'

Source: Authors' representation based on Web of Science database.

Table 1 highlights the most leading organisations, countries, and Web of Science Categories publishing on sustainable business. *Delft University of Technology* in Netherlands, *Bucharest University of Economic Studies* in Romania, *Sapienza University Rome* in Italy, and *University of Cambridge* in England have published the most scientific papers on sustainable businesses. These universities have a prestigious international status, and the high number of scientific publications from researchers from these universities demonstrate their interest in sustainability and sustainable business. Further, the countries where most academic papers on sustainable businesses have been published are *England* (159 publications), *USA* (155 publications), *People's Republic of China* (148 publications), and *Spain* (101 publications). It can be seen in Table 1 that, out of the 1305 scientific publications, 524 were published in *Environmental Sciences*, 506 in *Green Sustainable Science Technology* and 479 in *Environmental Studies*.

Table 1. Top organisations, countries, and Web of Science categories publishing on “sustainable business”

Top organisations		Top countries		Top Web of Science Categories	
Organisations	TP	Countries	TP	Web of Science Categories	TP
Delft University of Technology (Netherlands)	17	England	159	Environmental Sciences	524
Bucharest University of Economic Studies (Romania)	16	USA	155	Green Sustainable Science Technology	506
Sapienza University Rome (Italy)	15	Peoples R China	148	Environmental Studies	479
University of Cambridge (England)	14	Spain	101	Management	289
Indian Institute of Technology System (India)	13	Italy	98	Business	288
Lappeenranta Lahti University of Technology (Finland)	13	Germany	95	Engineering Environmental	147
Lund University (Sweden)	13	Netherlands	71	Economics	73
University of Turin (Italy)	12	Sweden	66	Regional Urban Planning	38
Universidade de São Paulo (Brazil)	11	Australia	53	Energy Fuels	37
Indian Institute of Management System (India)	10	France	49	Development Studies	27

Source: Authors’ representation based on Web of Science database.

Evidence in Table 2 indicate that the most important publishers with scientific papers on sustainable businesses are *MDPI* (339 publications), *Elsevier* (286 publications), and *Wiley* (152 publications). They are among the top academic journal publishers in the world. Furthermore, the two most influential publications with academic articles on sustainable business are *Sustainability* (310 publications) and *Cleaner Production* (132 publications). The most important areas of interest of the researchers were *Environmental Sciences Ecology* (683 publications), *Science Technology Other Topics* (521 publications) *Business Economics* (433 publications), and *Engineering* (212 publications).

Table 2. Top publishers, publication titles, and research areas publishing on “sustainable business”

Top publishers		Top publication titles		Top research areas	
Publishers	TP	Publication titles	TP	Research areas	TP
MDPI	339	Sustainability	310	Environmental Sciences Ecology	683
Elsevier	286	Journal of Cleaner Production	132	Science Technology Other Topics	521
Wiley	152	Business Strategy and the Environment	74	Business Economics	433
Springer Nature	85	Corporate Social Responsibility and Environmental Management	24	Engineering	212
Taylor & Francis	76	Amfiteatru Economic	18	Social Sciences Other Topics	51
Emerland Group Publishing	56	Environmental Science and Pollution Research	18	Public Administration	41
Sage	55	Sustainable Development	18	Energy Fuels	37
Frontiers Media Sa	24	Journal of Business Ethics	13	Agriculture	33
Editura ASE	18	Journal of Business Research	13	Development Studies	27
Amer Chemical Soc	12	Organization Environment	12	Education Educational Research	26

Source: Authors’ representation based on Web of Science database.

Table 3 highlights the most occurrences of keywords in scientific articles related to sustainable business. Therefore, *innovation*, *sustainability*, *management*, and *performance* are the most used keywords in the literature exported from the Web of Science. It can be observed that the expression circular economy has also had a high number of appearances in the sustainable business literature.

Table 3. Top keywords used in publications on “sustainable business”

Keyword	Occurrences	Total link strength
innovation	259	1908
sustainability	202	1266
management	195	1389
performance	178	1147
sustainable development	160	858
framework	121	852
impact	117	752
design	89	655
circular economy	86	612
perspective	82	652

Source: Authors' representation based on VOSviewer.

The co-occurrence of terms is an essential aspect of bibliometric analysis. In the analysis using VOSviewer, only keywords appearing in at least six publications were considered. This resulted in a selection of 323 keywords out of a total of 4888. In Figure 4 it can be observed multiple colours grouped in 7 clusters. Similarly, the more prominent features (circles/points) on the map represent keywords used more frequently in the scientific literature. The strength of the link between the nodes is higher for the following keywords: *innovation* (1908), *management* (1389), *sustainability* (1266), *performance* (1147), *sustainable development* (858), *framework* (852), and *impact* (752).

Source: Authors' representation based on VOSviewer.

In this subsection, we review the literature that includes research on sustainable business and its outcomes on the 17 SDGs.

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responsibility and financial benefit of all participants within an ecological network. The study of Raut et al. (2019) examines how leadership, government policies, and various business integrations (suppliers, internal processes, and customers) influence the adoption of big data analytics for sustainable operations in manufacturing firms within developing countries. Some results emphasize that management style and government policy are important factors for improving the sustainability awareness. Khan et al. (2021) employed a systematic mapping technique to evaluate and summarise the most recent trends and breakthroughs in SD research within the framework of Industry 4.0. Their insights accentuate a notable research gap in applying Industry 4.0 for sustainability in various sectors beyond manufacturing, specifically e-waste, logistics, water systems, agriculture, forestry, healthcare, financial reporting, and transportation. Other studies have investigated the correlation between social and technological technologies and sustainable business performance (Haseeb et al., 2019). The authors consider that companies should develop strategies that integrate sustainability into their pursuit of competitive advantage and strong business performance.

The "Industry, Innovation and Infrastructure" goal aims to create robust infrastructure, encourage inclusive and sustainable industrial development, and nurture innovation. At the European level, progress towards this goal can be measured by indicators such as patent applications, logistics performance indices, and the number of personnel dedicated to research and development (R&D). Analysis of patent applications at the European Patent Office (EPO) reveals a positive correlation between achieving the Sustainable Development Goal (SDG) for "Industry, Innovation and Infrastructure" and a nation's patent application activity. European countries like Norway, Sweden, Iceland, Ireland, Netherlands, Belgium, France, Germany, Austria, Italy, and Switzerland have demonstrably achieved this SDG, as evidenced by their strong patent application presence at the EPO. Conversely, countries such as Romania, Bulgaria, Serbia, and Croatia continue to face significant challenges in this area. The sustainability of businesses hinges on the quality of trade and transport infrastructure, encompassing elements like ports, roads, railways, and information and communication technologies (ICT). Across Europe, this infrastructure presents greater challenges in nations such as Romania, Bulgaria, Serbia, Montenegro, Lithuania, Cyprus, and Latvia. A robust research and development (R&D) workforce is critical for achieving the Sustainable Development Goals (SDGs). However, significant challenges exist in securing qualified R&D personnel in Romania, North Macedonia, and Montenegro. Additionally, Latvia, Bulgaria, Slovakia, Croatia, Serbia, and Turkey also face hurdles in this area.

Furthermore, Figure 5 highlights a strong link between sustainable business and **"Responsible Consumption and Production"**. Witjes and Lozano (2016) studied sustainable business models in relation to sustainable public procurement to strengthen the circular economy. Their results indicate that a collaborative approach to procurement offers the potential to decrease both raw material consumption and waste creation, contributing to the establishment of eco-friendly business models. In another study related to sustainable business, the authors introduced the innovative concept of resource-conservative manufacturing, ResCoM (Rashid et al., 2013). This model features three important characteristics: products designed for multiple episodes with built-in plans for their future, combining new product creation and recycling under one roof, and making customer involvement a core part of the business. Furthermore, Jabbour et al. (2020) conducted a research on sustainable business, and the results highlighted that the implementation of circular economy in Brazilian companies yielded both expected and surprising results. An unexpected result in that internal factors (barriers and motivators) were perceived as stronger than external ones, potentially causing internal conflicts in companies. On the other side, an expected

result is that stakeholders influence how companies approach challenges and opportunities related to implementing a circular economy. The concept of sustainable business was also approached by Zucchella and Previtali (2019) in their study that explores circular business models for sustainable development. The outcomes of their study identified factors that influence the adoption and growth of circular business models in the agricultural sector, along with propositions for further investigation.

Analysis of "Responsible Consumption and Production" within the Sustainable Development Goals (SDGs) reveals that several European countries face challenges. While Austria, Sweden, Finland, and Iceland demonstrate progress in the environmental goods and services sector (measured by gross value added), Finland, Romania, Portugal, Greece, and Ireland require improvement in their circular material use rate. Concrete examples of "Responsible Consumption and Production" include the burgeoning electric vehicle (EV) industry, the rise of energy-efficient passive buildings, and the increasing adoption of renewable energy sources. The significant growth in the EV market in recent years reflects a growing consumer trend towards sustainable transportation. Major car manufacturers, beyond Tesla, are actively contributing to this movement by introducing their own electric car models, such as BMW and Nissan. Passive House offers a voluntary path to ultra-low energy buildings with a minimal environmental footprint. It achieves this through strict guidelines for energy-efficient construction.

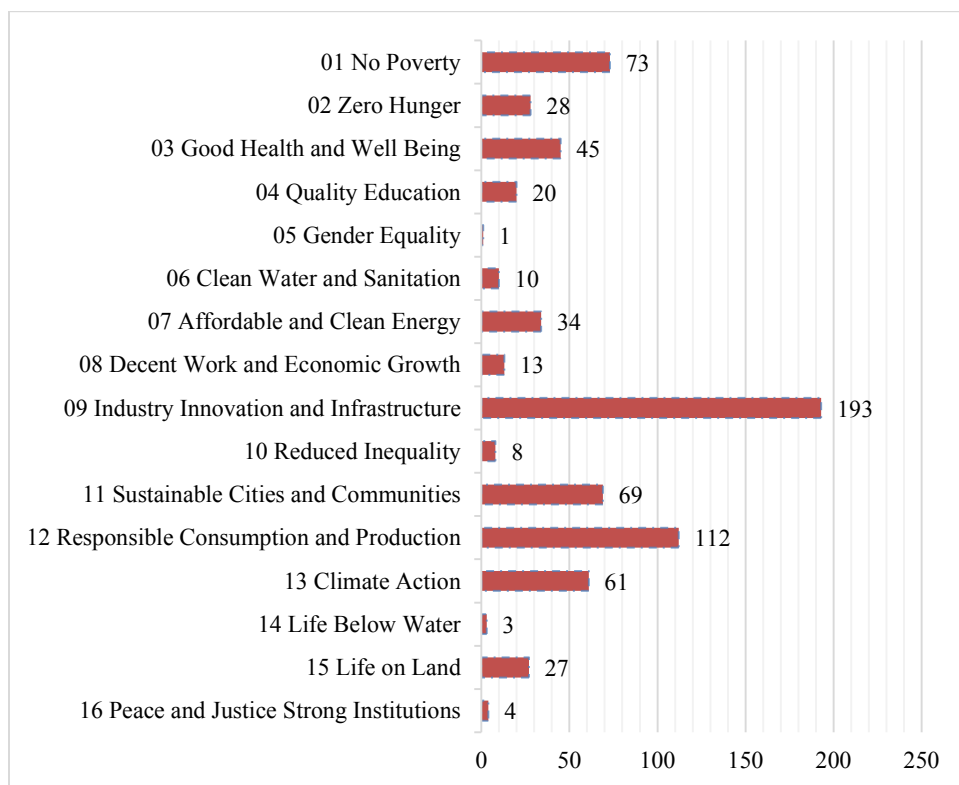


Figure 5. Academic papers on 'sustainable business' according to the Sustainable Development Goals (SDGs).

Source: Authors' representation based on Web of Science database.

Conclusion

Among researchers in sustainable business, Nancy Bocken has contributed the most publications, followed by Goran Svensson, Steve Evans, and Florian Ludeke-Freund. Delft University of Technology in Netherlands, Bucharest University of Economic Studies in Romania, Sapienza University Rome in Italy, and University of Cambridge in England have the most scientific publications on sustainable businesses. Likewise, MDPI, Elsevier, and Wiley. Among academic journals, Sustainability takes the lead with 310 articles on sustainable business, followed by the Journal of Cleaner Production (132 publications).

The most prolific contributors to academic research on sustainable business originate from England, followed closely by the USA. China and Spain also stand out for their significant contributions. In terms of keyword occurrences, the results highlighted that innovation, sustainability, management and performance are the most used keywords in the academic papers exported from the Web of Science.

The emphasis of the majority of the studies on sustainable business, with “Industry Innovation and Infrastructure” and “Responsible Consumption and Production” emerging as key indicators, suggests a strong emphasis on tackling sustainability through advancements in technology and business practices. This indicates a focus on discovering novel solutions to decrease the environmental effects throughout the product life cycle, from resource extraction and manufacture to consumption and disposal.

European patent applications show a link between innovation (SDG 9) and national development. Strong performers like Norway and Switzerland have high patent activity, while countries like Romania struggle. Similarly, infrastructure quality (roads, ports, etc.) is crucial for business success, and Eastern European nations face challenges in this area. Finally, a skilled R&D workforce is essential, and several Eastern European countries lack sufficient qualified personnel.

Europe struggles with "Responsible Consumption and Production" (SDG 12). While some countries excel in eco-friendly products (Austria, Sweden), others need improvement in resource use (Finland, Romania). Examples of responsible consumption include electric vehicles (growing market with major brands involved), energy-efficient buildings (passive house standards), and renewable energy sources.

This paper acknowledges the characteristic **limitations** of its bibliometric approach. The bibliometric analysis is primarily based on publications indexed within the Web of Science. Nevertheless, the Web of Science database does not contain all the publications related to the contribution of sustainable businesses to achieving Sustainable Development Goals. A search on 'sustainable businesses' yielded more results in Scopus (3,204 publications) compared to Web of Science (1,305 publications). An issue for future research would involve a comparative bibliometric analysis utilizing Web of Science and Scopus. This analysis could highlight potential discrepancies in publication coverage between the two databases. Furthermore, the extensive frame of theoretical literature on 'sustainable businesses' necessitates a complementary focus on empirical research to validate these frameworks and inform practical applications for reducing regional economic disparities.

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