

# **EXPLORING SUSTAINABLE LEADERSHIP: TRENDS AND INSIGHTS FROM A BIBLIOMETRIC ANALYSIS IN BUSINESS AND MANAGEMENT**

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## **ABSTRACT**

This study conducts a comprehensive bibliometric analysis of sustainable leadership using 645 documents from the Scopus database, analyzed with VOSviewer software. It examines publication trends, keyword trends, co-citations, co-authorship, and contributions by countries and institutions. The findings highlight the rapid growth of literature in this field, with the United States leading in research output. The analysis shows that sustainable leadership positively impacts organizational performance, including financial outcomes and employee engagement, while cultural factors influence leadership practices across regions. Ethical and transformational leadership are critical in promoting sustainability, especially in supply chain management and innovation within emerging industries. This study identifies key research gaps and offers opportunities for future exploration in sustainable leadership.

**Keywords:** Sustainable leadership, Bibliometric analysis, Business and management, Sustainable development, Co-authorship, VOSviewer, Future opportunities

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## **1. INTRODUCTION**

Sustainable development, as described by Dos Santos and Ahmad (2020), is a multifaceted and ever-changing system that goes beyond tackling issues related to climate change and environmental degradation, including pollution, overfishing, and the loss of species. It also encompasses other vital aspects such as promoting health, well-being, and striving for equality and poverty reduction.

According to Piwowar-Sulej et al. (2021), the idea of sustainable development has always been crucial in guiding global efforts. The introduction of the "Transforming our World: 2030 Agenda for Sustainable Development" in 2015 marked a significant milestone, initiating a new era of global sustainable development. Additionally, in 2015, 193 member states of the United Nations (UN) approved 17 Sustainable Development Goals (SDGs) to enhance human responsibility towards sustainable development, as highlighted by Cesário et al. (2022). These goals necessitate action from countries, organizations, and individuals to promote sustainable development. Although considerable advancements have been made in the study of organizational leadership in recent decades, the existing body of literature still focuses on and examines the effectiveness of leadership within 'closed systems' (Yukl, 2012). In other words, the concept of 'effective leadership' is primarily defined and evaluated based on its impact on internal aspects of an organization, including employee job satisfaction, commitment, organizational citizenship behavior, task performance, and to a lesser extent, overall company performance (Bass, 1999; Kim & Brymer, 2011; Hallinger & Suriyankietkaew, 2018).

The growing focus on sustainable development has led to a heightened interest in sustainable leadership, which encourages businesses to progress in the direction of sustainable development (Dalati et al., 2017; Piwowar-Sulej et al., 2021). In recent years, there has been growing recognition of the importance of sustainable leadership in

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addressing pressing global challenges such as climate change and social inequality (Xuecheng & Iqbal, 2022). Sustainable leadership can be described as a style of leadership that focuses on long-term sustainability and the ability to create positive environmental, social, and economic outcomes for both present and future generations (Iqbal et al., 2021). There are many research topics related to sustainable leadership such as total quality management, leadership and sustainability, entrepreneurial leadership, innovation and sustainable growth (McCann & Holt, 2010). Sustainable leadership highlights the essential role of leaders in effectively managing and harmonizing the three critical objectives of the economy, society, and the environment (Liao, 2022).

Previous studies on sustainable leadership have made significant advancements, and several scholars have discovered that sustainable leadership has a positive influence on various aspects, including employees' organizational commitment, job satisfaction (Suriyankietkaew & Avery, 2014), organizational trust (Dalati et al., 2017), sustainable performance of the organization (Burawat, 2019; Iqbal et al., 2020; Suriyankietkaew, 2022), financial performance of the organization (Kantabutra & Thepha-Aphiraks, 2016; Suriyankietkaew & Avery, 2016), and organizational resilience (Avery and Bergsteiner, 2011b), ethical leadership (Borde et al., 2022; Agyabeng-Mensah et al., 2023; Nejati et al., 2021), Cross-cultural (Yu, 2023; Peterlin et al., 2015; Dieck-Assad, 2013). However, further research on sustainable leadership is needed to fully understand its impact. Although previous bibliometric analyses may have been conducted on the topic of sustainable leadership research (Liao, 2022; Hallinger & Suriyankietkaew, 2018), it is important to note that the research landscape is dynamic and constantly evolving. Conducting a new analysis would provide an updated and current understanding of the field. By incorporating the latest publications and developments, the paper can offer valuable insights that reflect the most recent trends, gaps, and emerging research areas in sustainable leadership.

Therefore, this study aims to employ a bibliometric approach to analyze sustainable leadership. The objective is to understand the current state of this field and identify trends and significant indicators by examining articles published in the Scopus, using VOSviewer software for further analysis. Through content analysis of recent publications, the study identifies research gaps and potential opportunities in the domain of sustainable leadership. This research paper provides a bibliometric analysis of sustainable leadership, as outlined in Section 2. This section focuses on the initial data collection process related to sustainable leadership. The analysis of the extracted data from Scopus is presented in Section 3. Section 4 present the discussion part of latest advancements in the research fields of sustainable leadership. Section 5 outlines the conclusions drawn from the research. Finally, the paper concludes with a list of references.

## **2. METHODOLOGY**

This research is conducted by analyzing a collection of sustainable leadership studies. The approach taken in this study follows a three-stage process, which involves planning and conducting the review, as well as reporting and disseminating the findings (Abbas et al., 2022a, 2022b; Sahi et al., 2022). This methodology is based on the recommendation of conducting systematic reviews in management literature. The bibliometric review methodology employed in this study is significant because it offers an organized perspective on published documents within different research areas. It utilizes objective criteria to analyze and classify these publications. Additionally, the VOSviewer software is employed to visually represent the data through category maps.

There are several widely used databases available, including Scopus, Web of Science, ScienceDirect, ResearchGate, and Google Scholar (Sahi et al., 2021). For this study, the focus is on the Scopus database, which is known for its extensive collection of relevant research materials such as articles, journals, conference proceedings, and book chapters (Ali et al., 2022; Alsharif et al., 2021).

In the initial search, the researchers utilized specific keywords ("sustainable leadership" OR "sustainability leadership" OR "sustainable development" AND "leadership") to retrieve a total of 4,424 documents. We minimize the results by focusing on articles and English language only, resulting in 2,253 documents. In the Scopus categories, we selected business, management and accounting. The results decreased into 645 documents.

The application of a bibliometric approach allows for an examination of the current status of the literature regarding sustainable leadership. This approach enables a comprehensive synthesis of existing research in this domain, while also exploring potential future research directions and implications. After applying Boolean operators, a total of 254 bibliographic materials were acquired and examined in this study. To visually present potential results, the data were processed using a similarity visualization program called VOSviewer. The study encompassed various analyses, including the simultaneous occurrence of publications by year, keyword trends, co-citation, and coauthor analysis across different countries and institutions. These analyses aimed to determine

the developmental state and main trends in terms of influence, primary journals, articles, topics, authors, institutions, and countries. The analysis and graphical representation play a vital role in enhancing the understanding of the existing research in the field of sustainable leadership. Quotations are formed when two documents cite the same article, and this citation approach is implemented for documents, journals, and authors. Co-occurrence of keywords among authors indicates the most commonly used keywords in the documents. Co-authorship signifies the volume of publications related to a set of variables and their interconnections, while bibliographic coupling occurs when two documents cite the same source (Mulet-Forteza et al., 2018). These approaches can be applied to institutions and countries as well.

### 3. DATA ANALYSIS

#### 3.1 Publications by Year

The initial article concerning sustainability in tourism and marketing that was discovered in Scopus dates back to 1991. It was published in the *Journal of Quality Progress* and titled "Quality Progress" authored by Kelly (1991). Global Environmental Management Initiative (GEMI) teaches environmental protection and profitable total quality management. The members of the organization aim to achieve five goals: promoting global critical thinking in environmental management, improving business environmental performance through example and leadership, fostering a global business ethic for sustainable development, enhancing dialogue between businesses and interested stakeholders, and establishing international partnerships to encourage similar initiatives. Subsequently, there was a marked increase in publications on this subject starting from the year 2006 when 18 articles were released. From that point on, the number of publications has steadily grown, as illustrated in Figure 1.

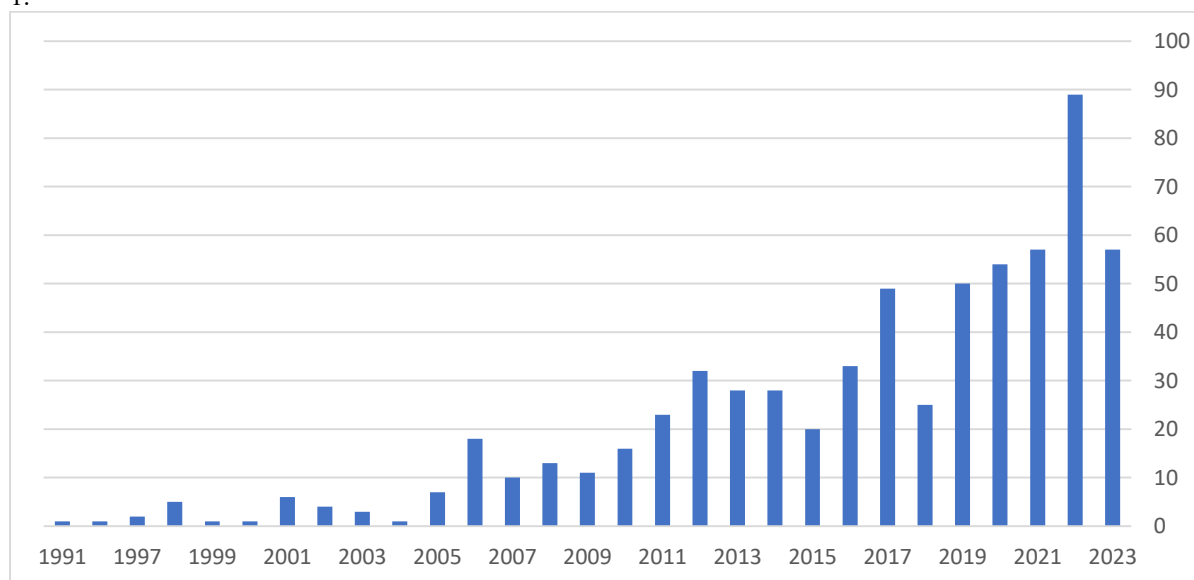


Figure 1. Publications by year (1991-2023)

#### 3.2 Publications by Journal

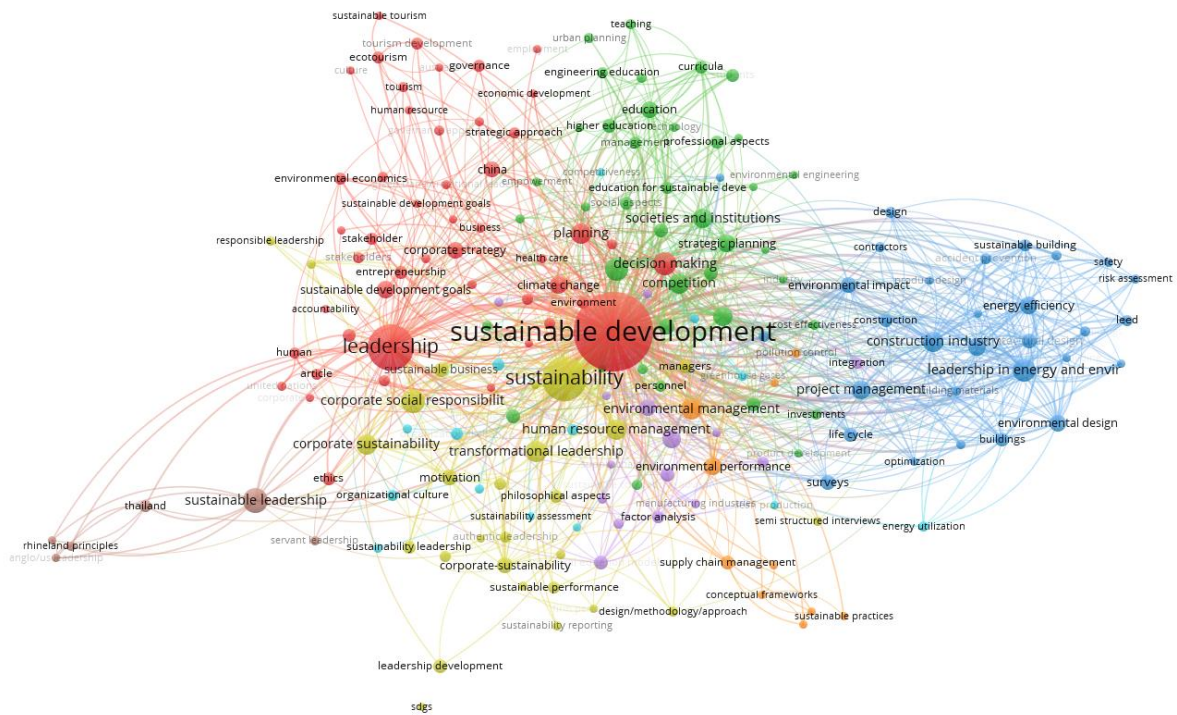
Upon analyzing the 645 articles' publication sources, it becomes evident that they are spread across 10 distinct journals (as indicated in Table 2). The *Journal of Cleaner Production* stands out as the most prominent journal, with 113 articles, accounting for approximately 17.3% of the total publications. Other notable journals include *Business Strategy and the Environment*, and the *Journal of Construction Engineering and Management*, both having 18 articles (2.8% each). *Corporate Social Responsibility and Environmental Management* published 14 articles (2.1%), while other Journals produced 10 articles and below.

**Table 2.** Summary of productivity of journals (1991–2023)

Publication by Journal	Number	% de 645
Journal Of Cleaner Production	113	17.278%
Business Strategy And The Environment	18	2.752%
Journal Of Construction Engineering And Management	18	2.752%
Corporate Social Responsibility And Environmental Management	14	2.141%
Journal Of Business Ethics	10	1.529%
Journal Of Sustainable Tourism	10	1.529%
Journal Of Professional Issues In Engineering Education And Practice	9	1.376%
Technological Forecasting And Social Change	9	1.376%
International Journal Of Management Education	8	1.223%
Journal Of Management In Engineering	8	1.223%

### 3.3 Keyword Analysis

The researchers identified and examined the most commonly used keywords among the 645 articles in the sample, leading to the classification of the prevalent topics in the field of analysis. Figure 2 visually displays this information, organizing the keywords into eight distinct clusters. Notably, the primary keyword in each cluster is as follows: " sustainable development " in the red cluster, " sustainability " in the yellow cluster, "leadership in energy and environmental designs" in the blue cluster", innovation " in the green cluster, "supply chain" in the purple cluster, ", "environmental management" in the light orange cluster. The map highlights that sustainable development, leadership, and corporate social responsibility are prominent research directions, indicating potential opportunities for further investigation.



Keyword trends (1991–2023).

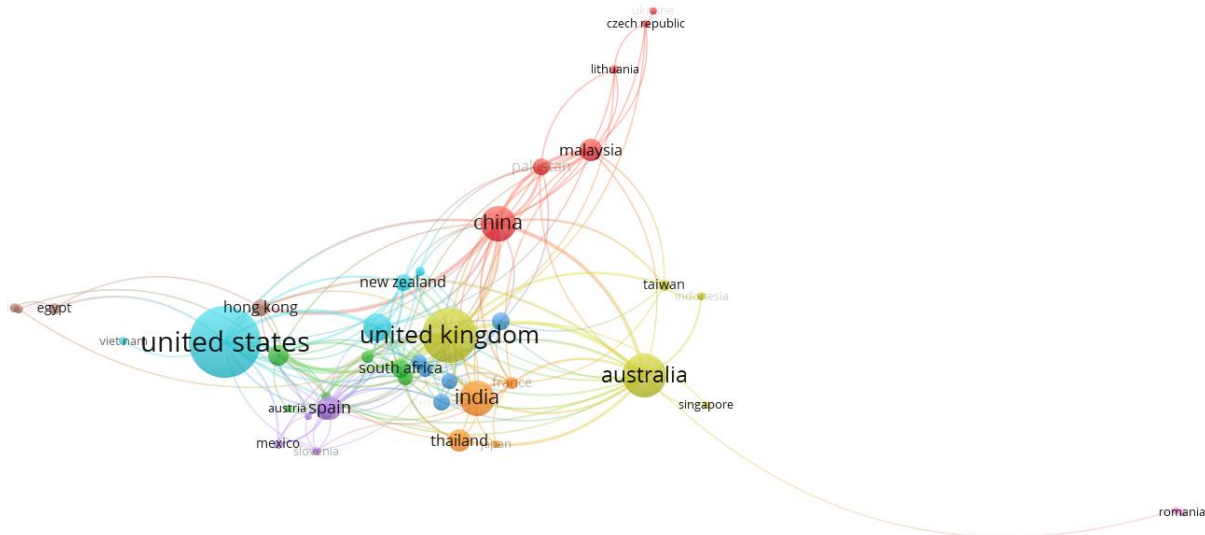
Table 3 displays the occurrences and total link strength of various keywords, with "sustainable development" being the most frequent keyword with 383 occurrences and a total link strength of 1644, followed by "leadership" with 129 occurrences and 442 total link strength, and "sustainability" with 121 occurrences and 508 total link strength, among other keywords.

**Table 3.** Keyword Occurrences (1997–2020).

Keyword	Occurrences	Total link strength
sustainable development	383	1644
leadership	129	442
sustainability	121	508
sustainable leadership	39	109
corporate social responsibility	36	114
leadership in energy and environmental designs	33	247
decision making	32	179
innovation	32	171
environmental management	29	195
transformational leadership	27	122

**3.4 Country Analysis of Publications**

By examining the authors' affiliations, it becomes evident that the research topic is of global significance, as the 645 articles in the sample originate from 43 different countries, indicating that each of these countries has published at least one article on the subject. Figure 4 depicts the country co-authorship map generated from the sample of 645 articles. It is evident that a prominent cluster consists of the United States, United Kingdom, and Australia, which jointly contribute to 41% of the total publications.



**Figure 4:** Co-authorship by country

Table 4 provides a list of the top 10 countries contributing to academic papers in the research field, collectively responsible for 86.88% of all published articles. In this data, the United States has the highest number of 127 people, accounting for 19.69% of the total 645 individuals, followed by the United Kingdom with 88 people at 13.643%, and Australia with 63 people at 9.767%.

**Table 4:** Number of publications in co-authorship by country (1991–2023).

Country	Number	% of 645
United States	127	19.690%
United Kingdom	88	13.643%
Australia	63	9.767%
China	48	7.442%
India	47	7.287%
Canada	34	5.271%
Spain	28	4.341%
Thailand	25	3.876%
Malaysia	24	3.721%
Sweden	22	3.411%

### 3.5 Analysis of Publications by Organization

Table 5 presents an analysis of publications by different organizations, with Mahidol University having the highest number of publications at 18, accounting for 2.791% of the total 645 articles. Other notable contributors include Universiti Sains Malaysia with 10 publications (1.550%), and Hong Kong Polytechnic University and Macquarie University each with 8 publications (1.240%).

**Table 5:** Publications by organization.

Organization	Number	% de 645
Mahidol University	18	2.791%
Universiti Sains Malaysia	10	1.550%
Hong Kong Polytechnic University	8	1.240%
Macquarie University	8	1.240%
Macquarie Graduate School of Management	7	1.085%
Lunds Universitet	6	0.930%
RMIT University	5	0.775%
City University of Hong Kong	5	0.775%
The University of Tennessee, Knoxville	5	0.775%
Monash University	5	0.775%

### 3.6 Analysis of Citations

The assessment of article citations is the primary method used to gauge the influence of authors, journals, and articles as it identifies pivotal papers in the research field (Mulet-Forteza et al., 2018). Table 6 examines the citation pattern within the pertinent research area, revealing the most frequently cited articles, with " A review of commitment and implementation of sustainable development in higher education: Results from a worldwide survey " being the top-referenced publication, garnering a total of 477 citations.

**Table 6:** Citations by articles

Title	author	Journal	<2019	2019	2020	2021	2022	2023	Total Citation
A review of commitment and implementation of sustainable development in higher education: Results from a worldwide survey	(Lozano et al., 2015)	Journal of Cleaner Production	139	64	71	80	75	48	477
Responsible leadership and corporate social responsibility: Metrics for sustainable performance	(Székely & Knirsch,2005)	European Management Journal	234	42	54	37	46	17	430
Clarifying the Meaning of Sustainable Business: Introducing a Typology From Business-as-Usual to True Business Sustainability	(Dyllick & Muff, 2016)	Organization and Environment	51	51	66	87	96	53	404
Urban living labs for sustainability and low carbon cities in Europe: Towards a research agenda	(Voytenko et al., 2016)	Journal of Cleaner Production	85	56	50	72	46	21	330
Green human resource management and the enablers of green organisational culture: Enhancing a firm's environmental	(Roscoe et al, 2019)	Business Strategy and the Environment	0	6	39	61	115	72	293

performance for sustainable development									
Sustainability to support end-to-end value chains: The role of supply chain management	(Closs et al., 2011)	Journal of the Academy of Marketing Science	137	29	21	24	20	8	239
Organizational learning to manage sustainable development	Siebenhüner & Arnold, 2007)	Business Strategy and the Environment	113	15	22	25	36	16	227
Lean processes for sustainable project delivery	(Lapinski et al., 2006)	Journal of Construction Engineering and Management	144	17	19	8	16	6	210
Linking big data analytics and operational sustainability practices for sustainable business management	(Raut et al., 2019)	Journal of Cleaner Production	0	4	34	50	58	47	193

### 3.7 Analysis by Author

The ultimate examination centers on author productivity and publication. Table 7 emphasizes the leading authors, Professor Sooksan Kantabutra, from the College of Management Mahidol University in Thailand, who has authored 12 out of the 645 publications. In close proximity, we find author Qaisar Iqbal, a professor at King Fahd University of Petroleum in Saudi Arabia.

**Table 7: Publications by author.**

Authors	Number	% de 645
Kantabutra, S.	12	1.835%
Iqbal, Q.	7	1.070%
Suriyankietkaew, S.	6	0.917%
Avery, G.C.	5	0.765%
Ismacel, W.S.E.	5	0.765%
Ahmad, N.H.	4	0.612%
Huisingsh, D.	4	0.612%
Bag, S.	3	0.459%
Brown, S.	3	0.459%
Gambatese, J.A.	3	0.459%

### 3.8 Analysis of Research Opportunities

The objective of this study, besides offering a comprehensive review of research and current directions in the investigation of sustainable leadership, is to pinpoint the primary research opportunities within this domain. Research opportunities on sustainable leadership in business and management are abundant and crucial in today's world, as organizations increasingly recognize the importance of incorporating sustainability principles into their operations. As a result, this section endeavors to examine and suggest, through content analysis, the current trends and future directions of research in this domain.

Table 8 comprises a selection of 41 papers derived from the examination of 100 recent and pertinent articles recommended by the Scopus. These articles, published within the last 8 years, were chosen based on their high citation rates and significance in the field.

**Table 8:** Investigation opportunities in sustainable leadership

N	Opportunities	Description	Suggested Articles
1	Conceptualization of sustainable leadership	This opportunity involves defining and conceptualizing sustainable leadership, exploring the characteristics and behaviors of sustainable leaders, and understanding the impact of sustainable leadership on organizational outcomes and long-term sustainability.	(Channuntapipat, 2021; Ozsen et al., 2022)
2	Leadership development for sustainability	This opportunity focuses on investigating the development of sustainable leadership skills and competencies through training programs, educational initiatives, and mentoring. It aims to identify effective leadership development interventions and best practices for cultivating sustainable leaders.	(Patro, 2020; Tripathi et al., 2019; Dahiya, 2022; Draghici, 2022; Verhelst et al., 2023; Maheshwari & Nayak, 2022; Borde et al., 2022)
3	Sustainable leadership and organizational performance	This opportunity involves examining the relationship between sustainable leadership and organizational performance. Research in this area explores how sustainable leadership practices contribute to improved financial performance, employee engagement, innovation, policy and overall organizational effectiveness, providing empirical evidence of the business case for sustainable leadership.	(Piwowar-Sulej & Iqbal, 2022; Grover et al, 2021; Gopalakrishna-Remani et al., 2022; Suriyankietkaew, 2022; Wiengarten & Lam, 2017; Malik et al, 2021; Macke & Genari, 2019)
4	Cross-cultural perspectives on sustainable leadership	This opportunity explores the influence of cultural factors on sustainable leadership practices. It involves studying cultural variations in sustainable leadership and their impact on organizational sustainability, identifying cultural barriers, facilitators, and effective strategies for promoting sustainable leadership across different contexts.	(Yu, 2023; Peterlin et al, 2015)
5	Ethical considerations in sustainable leadership	This opportunity focuses on the ethical dimensions of sustainable leadership. Research in this area examines ethical decision-making, responsible behavior, and ethical dilemmas faced by sustainable leaders. It also explores the role of ethical leadership in promoting sustainability and contributes to understanding the moral obligations and ethical challenges inherent in sustainable leadership.	(Agyabeng-Mensah et al., 2023; Nejati et al. , 2021; Dey et al., 2022; Islam et al., 2021; Blome et al., 2017)
6	Stakeholder engagement and sustainable leadership	This opportunity emphasizes the need for sustainable leaders to engage with diverse stakeholders such as employees, customers, communities, regulators, investors and citizens. Research in this area investigates effective strategies for stakeholder engagement in sustainability initiatives and the role of sustainable leadership in fostering positive stakeholder relationships. It provides insights into stakeholder expectations, the impact of stakeholder engagement on	(Cosma et al., 2022; Cordery et al., 2023)



		sustainability outcomes, and the role of leaders as change agents.	
7	Sustainable leadership in emerging industries	This opportunity focuses on exploring the role of sustainable leadership in driving sustainability and responsible practices in emerging industries and technologies. Research can investigate sustainable leadership in sectors such as renewable energy, circular economy, or green technology, providing insights into the unique challenges and opportunities faced by leaders in these contexts.	(Cui & Wang, 2022; Cui et al., 2023; Vieira et al., 2023; Bui et al., 2020; Mead et al., 2022; Bag et al., 2021; Pla-Julián & Guevara, 2019)
8	Leadership and sustainability in supply chains	This opportunity recognizes that sustainable leadership extends beyond individual organizations to their supply chains. Research in this area examines how sustainable leadership practices influence sustainability performance in supply chains, the role of leaders in promoting sustainability collaboration with suppliers, and the impact of sustainable leadership on supply chain resilience and risk management.	(Agyabeng-Mensah et al., 2023; Shang et al., 2022; Saide & Sheng, 2023; Hoang et al., 2023; Donkor et al., 2022; Shayganmehr et al., 2021; Gosling et al., 2016; Akhtar et al., 2016)

Overall, the research opportunities on sustainable leadership in business and management are vast and diverse. They encompass areas such as defining sustainable leadership, leadership development, organizational performance, cross-cultural perspectives, ethical considerations, stakeholder engagement, emerging industries, and supply chain sustainability. By exploring these research avenues, scholars can contribute to the understanding and advancement of sustainable leadership practices, enabling organizations to achieve long-term environmental, social, and economic sustainability.

#### 4. DISCUSSION

The current study aims to provide insight into the latest advancements in the research fields of sustainable leadership. It accomplishes this by identifying the most active countries and institutions in publishing, specialized journals within sustainable leadership, prevalent subject trends through keyword analysis, and the significance of publications from co-citation networks. Therefore, this study is vital for identifying research deficiencies and potential avenues for future investigation in this field of expertise.

This research offers an examination of prominent journals, authors, institutions, and keywords, revealing the following findings: (a) there is a substantial growth in the literature concerning sustainable leadership; (b) a mere five papers account for over 2193 citations, and several prolific authors contribute significantly to the research; (c) among the 645 sources reviewed, the main sources have published 29% of the papers; (d) United States leads in terms of documents and citations related to this topic; (e) keyword trend network analysis indicates that “sustainable development” is becoming a strategic approach for leadership. Overall, this subfield within sustainable leadership literature exhibits considerable potential and is expected to witness continued significant growth in the years to come.

Channuntapipat (2021) defines sustainable leadership and its connection to corporate sustainable practices, highlighting that assurance services can enhance such practices and foster transformational leadership, facilitating the adoption of novel sustainability reporting and assurance methodologies. Research in the field has primarily focused on leadership development for sustainability. For example, Patro (2020) conducted a study that revealed significant correlations between employees' competence and factors like communication, motivation, achievement, and adaptability, which contribute to establishing a learning organization conducive to evolutionary sustainability. Moreover, Tripathi et al. (2019) adopt a micro-foundational perspective to identify effective leadership styles for achieving sustainability goals in employee work behavior, with the Servant leadership style being particularly effective in mobilizing resources and implementing sustainability strategies among stakeholders. Additionally, Borde et al. (2022) conducted a literature review exploring academic capitalism, consumerism, and commodification in higher education, investigating how ethical and transformational leadership

behaviors in education can promote inclusive and equitable quality education for students from diverse socio-economic backgrounds and contribute to sustainable education goals.

Previous literature also investigating the correlation between sustainable leadership and organizational performance. Studies in this domain explore how sustainable leadership practices positively impact financial performance (Wiengarten & Lam, 2017), employee engagement (Gopalakrishna-Remani; Malik et al, 2021), policy (Grover et al., 2021), entrepreneurship (Suriyankietkaew, 2022) and overall organizational effectiveness, offering empirical evidence supporting the rationale for adopting sustainable leadership.

Furthermore, the literature involves examining how cultural factors shape sustainable leadership practices from cross-cultural perspectives, with a specific focus on studying cultural differences in sustainable leadership and their effects on organizational sustainability. According to Yu (2023), who conducted a literature review and cross-cultural genre analysis of university sustainability reports' leadership statements in Italy and the United States, both countries prioritize establishing a sustainable image, but with different approaches - Americans using more image-improving moves, while Italians emphasize report-introducing for developing an institutional culture of sustainability. In a comparison study between Chinese and Slovenian stakeholders, Peterlin et al. (2015) found that sustainable leadership development is more appropriate for meeting social and environmental needs than focused leader development, indicating that individual differences influence cultural orientation and sustainable leadership practices.

Agyabeng-Mensah et al. (2023) conducted reveals a favorable correlation between ethical supply chain leadership and circular supply chain practices, wherein internal and external environmental orientation influences the relationship between circular supply chain practices and corporate sustainability performance. Additionally, employees' perceptions of corporate social responsibility and ethical leadership were found to be negatively related to turnover intention. Nejati (2020) also found negative relationships between both corporate social responsibility and ethical leadership and turnover intention, with job satisfaction mediating these relationships. In a study conducted in Bangladesh, Dey et al. (2022) investigated the impact of ethical leadership on sustainable business performance, finding significant positive effects on sustainable performance, and providing valuable theoretical and practical contributions to the fields of ethical leadership and sustainability.

In emerging industries and technologies, transformational leadership plays a significant role in sustainability, as demonstrated by Cui & Wang (2022) who found that transformational leadership moderates the relationship between exploratory green learning and radical green innovation, influencing the impact of exploratory green learning on an organization's ability to engage in radical green innovation. This presence of transformational leadership can either enhance or diminish the effect of exploratory green learning. Additionally, Vieira et al. (2023) highlight the central role of international oil companies in the transition towards a low-carbon economy, where their leadership and influence are crucial in advancing technological alternatives or maintaining reliance on fossil fuels. In the context of Industry 4.0, Bag et al. (2021) emphasize that leadership in management, environmentally conscious logistics, sustainable design, utilization of information technology, advanced data analytics, and collaborative partnerships are vital resources for successfully embracing this new industrial revolution.

Leadership and sustainability have significant implications for supply chains, as seen in the example of leader's characteristics contributing to the micro-level triggering of circular supply chain management (Saide & Sheng, 2023). Additionally, supply chain integration can lead to improvements in economic, social, and environmental performance. Furthermore, in the context of multi-tier supply chains, Shayganmehr et al. (2021) highlight the importance of leadership and support in assessing sustainability. Gosling et al. (2017) proposed a conceptual framework on how focal companies assuming leadership roles can initiate and disseminate sustainable practices throughout their supply chains.

## **5. CONCLUSIONS**

This research provides valuable insights into the expanding field of sustainable leadership, emphasizing the substantial growth in literature and the significant role of the United States as a leading contributor. The study highlights the positive effects of sustainable leadership on various aspects, including financial performance, employee engagement, policy, entrepreneurship, and overall organizational effectiveness.

To advance sustainable leadership development, actionable strategies are proposed for different stakeholders. For top management, integrating sustainable leadership into corporate culture through tailored training programs that emphasize ethical and transformational leadership is recommended, with a focus on embedding sustainability

principles in decision-making processes, particularly in supply chain management, to promote circular economy practices. Educational institutions are encouraged to incorporate sustainability and leadership development into curricula, foster cross-cultural studies, and establish industry partnerships for practical leadership training aligned with sustainable development goals. Policy makers are advised to promote policies that incentivize sustainable leadership practices and encourage the adoption of circular supply chain management through tax incentives and grants for companies that demonstrate leadership in sustainability. Researchers should conduct longitudinal and cross-cultural studies to explore the long-term impact of sustainable leadership on organizational performance and expand bibliometric analyses to include multiple databases for a more comprehensive understanding of the field. Collaboration among these stakeholders is essential to enhancing the adoption of sustainable leadership practices, driving positive environmental, social, and economic outcomes across industries.

As a limitation, the findings for the year 2023 are limited up to July, when data collection was conducted. In future research, the inclusion of the entire year of 2023 could offer a comprehensive perspective on scientific production. Additionally, using only the Scopus database is another limitation, and exploring multiple databases through a multisource approach could offer a more comprehensive understanding of research in this field and reveal the differences and implications of using different databases. Furthermore, while the focus was on high-quality papers, valuable insights for future research trends may be found in other sources such as conference papers, book chapters, or dissertations.

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