



# "SUSTAINABLE LEADERSHIP: A BIBLIOMETRIC EXPLORATION"

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## Abstract

The article aimed to analyse the current trends and prospects in the field of Sustainable Leadership. The relevant literature was extracted from the Scopus database in March 2024 using relevant terms, and the final dataset comprised 142 publications from the period 1998 to 2024. The data was analyzed using the Biblioshiny software of R-Studio. These articles were subjected to bibliometric methods such as performance analysis and science mapping. The study highlighted top authors, top countries, prominent institutions, top-cited journals, and influential research articles in the Sustainable Leadership field. However, our analysis of collaborative scientific production revealed insufficient collaboration by India in the scientific research of Sustainable leadership. Researchers and practitioners will gain knowledge about the development in this area and, the implications and future directions of this study will give insight to contribute further in the area of Sustainable Leadership and Sustainable Development.

Keywords: Sustainable leadership, Sustainable leader, Scopus, Bibliometric Analysis

## 1. INTRODUCTION

In 2015 to fix the responsibility of humans against sustainable development, 17 development goals were approved by 193 nations "transforming our world: 2030 agenda for sustainable development". Sustainable development goals are dynamic and diverse, not only valuing environmental protection but also giving importance to social concepts in the world i.e., poverty eradication, and elimination of social inequalities (Dos Santos and Ahmad, 2020). The Sustainable development goals require the participation of countries, institutions and individuals (Cesário et al., 2022). Institutions have been facing challenges for a long time in integrating the idea of sustainable development into business operations along with social responsibility (Liao, 2022). To address the issue of integrating sustainable development into organizational practices, scholars have explored introducing the concept of Sustainable development into leadership (Gerard et al., 2017). Sustainability demands leaders who foster sustainable practices in the organization and society in addition to earning economic profits (Metcalf & Benn, 2013). Consequently, sustainable leadership emerge as an effective leadership style to promote sustainability in the business (Avery and Bergsteiner, 2011). Sustainable Leadership is a management approach which aims to achieve sustainable performance by fostering innovation and reducing unwanted employee turnover (Avery and Bergsteiner, 2011).

Sustainable leadership practices value employees, promote ethical, social and environmental responsibility, foster knowledge sharing, shared vision, and amicable stakeholders relations and drive sustainable and long-term financial performance (Avery & Bergsteiner, 2011)

## 2. Background of Sustainable Leadership

Sustainable Leadership originated from Rhineland capitalism (Gibson, 2012). Sustainable Leadership is a holistic approach and its objective is to keep a balance among people, profits and the planet (Avery and Bergsteiner, 2011). Avery, (2005), has identified 19 leadership practices and tested these practices in 14 organizations around the world and referred to these as the Rhineland approaches and claimed that these practices were applicable in the developed world and emerging economies industries and locations. Avery and Bergsteiner, (2011) have expanded the list by adding four more practices, i.e., (trust, innovation, staff engagement, and self-management) a total of 23 practices and contrast these practices with locust philosophy. These 23 practices were grouped into three main categories i.e., 1. "Foundation practices" have 14 practices related to valuing, developing, and retaining staff, promoting financial, ethical, social and environmental responsibility, 2. "Higher-level practices" have 6 practices i.e., decision-making, self-management, fostering widely shared culture, knowledge sharing, trust and team orientation and 3. "Key performance drivers" have 3 practices i.e., Innovation, staff engagement and quality. All these 23 practices collectively promote brand reputation, improve financial stability, promote long-term stakeholders value and enhance employee job satisfaction (Avery and Bergsteiner, 2011). Sustainable leadership is interchangeably known as Sustainability leadership, eco-sensitive leadership, and green leadership (Cosby, 2014). The existing studies on sustainable leadership have empirically examined that sustainable leadership has a positive effect on employees' job satisfaction (Suriyankietkaew and Avery, 2014), enhance organizational sustainable performance (Burawat, 2019; Iqbal et al., 2020) and financial performance (Kantabutra and Thepha-Aphiraks, 2016; Suriyankietkaew and Avery, 2016) and employees' organizational trust (Dalati et al., 2017). However, Sustainability leadership is still in its infancy stage and requires future studies to have a better understanding of the concept.

## 3. Methodology

The objective of this research article is to analyze the current trends and advancements in Sustainable Leadership research. This investigation aims to enhance the Sustainable Leadership literature by addressing the following significant research questions:

### 3.1 Research Questions:

RQ1: What is the annual publication trend in the Sustainable Leadership research?

RQ2: Which are the most prolific contributors (authors, institutions, and countries) in the Sustainable Leadership research?

RQ3: What are the Influential Journals and Articles in the Sustainable Leadership research with Highest Citation?

RQ4: What are the major countries contributing and frequently occurring authors' keywords in Sustainable Leadership research?

### 3.2. Data Collection

A comprehensive literature was searched using Scopus. Scopus includes peer-reviewed, scientific research articles, conference papers, review articles and book chapters from different subject areas. Prisma Guidelines and Boolean-based technique were followed to retrieve literature data related to Sustainable Leadership. The search used the keywords ("Sustainable Leadership" OR "Sustainable Leader") and got 382 results, limited this search to subject areas 'business management and accounting', 'social sciences', 'Economics, Econometrics and Finance' and 'psychology' and got 333 results, further, this search was limited to document category 'articles' and 'reviews and got 235 results and finally limited it to only English language and got 231 results and the period of research is from 1998 to 2024. Subsequently, the CSV file was downloaded containing relevant articles, abstracts, authors' keywords, and other relevant information such as DOI, Total citations etc. The CSV file was further filtered to clean the data based on the Title, Abstract, duplicate articles and Missing Information and finally, 142 publications were identified for bibliometric analysis.

TITLE-ABS-KEY ("Sustainable Leadership" OR "Sustainable Leader") AND ( LIMIT-TO ( SUBJAREA , "BUSI" ) OR LIMIT-TO ( SUBJAREA , "SOCI" ) OR LIMIT-TO ( SUBJAREA , "PSYC" ) ) AND ( LIMIT-TO ( DOCTYPE , "ar" ) ) AND ( LIMIT-TO ( LANGUAGE , "English" ) )

### Scopus Search Field

Search and Filter criteria	Exclude	Include
<b>Search term and Criteria</b> TITLE-ABS-KEY ("Sustainable Leadership" OR "Sustainable Leader") AND ( LIMIT-TO ( SUBJAREA , "BUSI" ) OR LIMIT-TO ( SUBJAREA , "SOCI" ) OR LIMIT-TO ( SUBJAREA , "PSYC" ) ) AND ( LIMIT-TO ( DOCTYPE , "ar" ) ) AND ( LIMIT-TO ( LANGUAGE , "English" ) )		
<b>Search engine:</b> Scopus		
<b>Search date:</b> March 2024		
<b>Search term:</b> ("Sustainable Leadership" OR "Sustainable Leader")		382
<b>Subject area:</b> 'business management and accounting', 'social sciences', 'Economics, Econometrics and Finance' and 'psychology'		333
<b>Document category:</b> 'articles' and 'reviews'		235
<b>Language:</b> English Only		231
<b>Erroneous Data Cleaning:</b> Based on Title, Abstract and Missing Information		142
<b>Final Data Record</b>		<b>142</b>

**Table 1:** Search and Filter Criteria

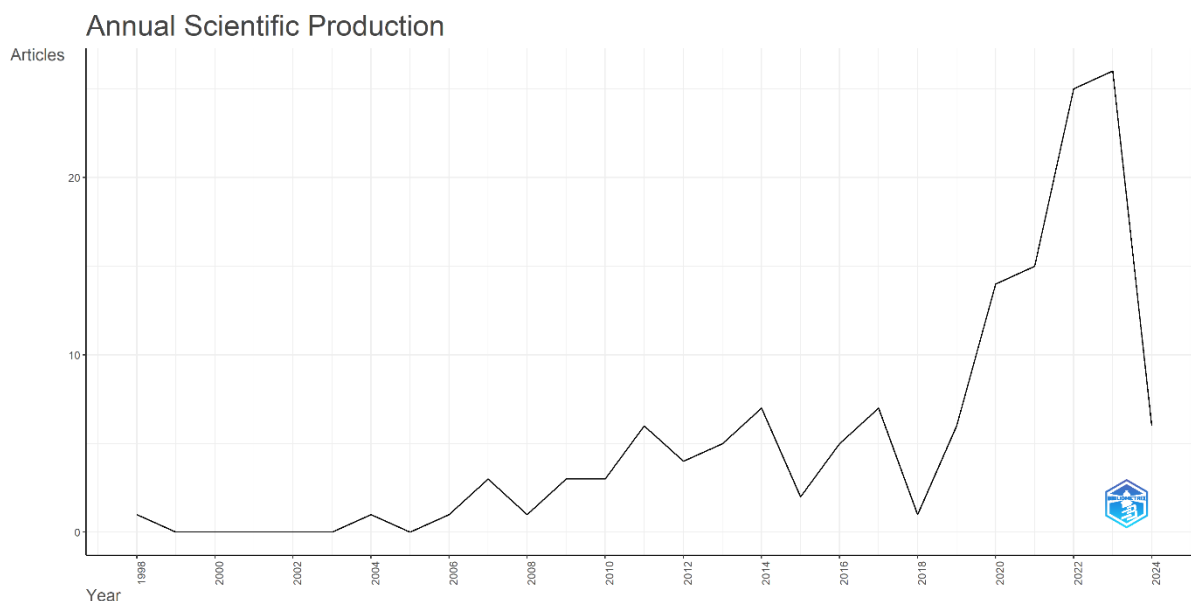
### 3.4 Data Analysis

The final dataset after search and filtration was analysed using Bibliometric R Studio Software "Biblioshiny". Firstly, it was ascertained that the sample size of 142 was feasible to conduct bibliometric analysis. According to the existing literature, Seglan (1994) highlighted that 50 to 100 articles are important to get useful results and similarly, Glanzel and Moed (2013) suggested a minimum sample size of 30 to 50 publications to conduct bibliometric analysis. However, there are not any acceptable threshold limits but according to the above-stated sample of 142 publications is appropriate to yield useful results from analysis. Guleria and Kaur, (2021), outlined that Biblioshiny is an in-built package of R-studio Bibliometrix package with a graphical interface and is useful for descriptive inferences and bibliometric information interpretation.

## 4. Findings

Bibliometric Analysis provides an overview of the volume of literature available on a particular discipline which is difficult to analyse manually. Bibliometric Analysis has two techniques 1. Performance analysis and 2. Science Mapping. The performance Analysis technique is descriptive and investigates the annual publication trend, and scientific production by prominent authors, institutions and countries and provides information about global, local and total citations in a particular area (Donthu et al., 2021) whereas Science Mapping is a visualization technique which provides information related to clusters and thematic aspects of the research through Co-citation Analysis, Co-authorship analysis, Co-word Analysis and bibliographic coupling (Baker et al., 2021).

**Figure 1: Annual Scientific Publication Trend in Sustainable Leadership. (RQ1)**



**Source:** Biblioshiny Software

Biblioshiny Analysis demonstrate the Annual growth of publications in Sustainable Leadership in Figure 1 from the period 1998 to 2024. Over the period it was observed there were fluctuations from 1998 to 2018 and from 2018 onwards, there was an increase in the publication trend due to awareness towards the importance and popularity of Sustainable development and the organizations were facing pressures from the Government, NGOs, customers and other stakeholders to focus on society and the environment (Iqbal, et al., 2021) due to climate change, environmental deterioration, corruption, social inequalities etc. and 2023 had received highest publications in the area of Sustainable leadership and 2024 there was decline in publications. This may be due to the beginning of 2024 but it is expected that Sustainable Leadership publications will surge as growing interest in this phenomenon.

**Table 2: The Most Prominent Authors, Institutions, and Countries in the Sustainable Leadership Research (RQ2)**

Most Relevant Authors	Articles	Institutions	Articles	Countries	Articles
IQBAL Q	16	MAHIDOL UNIVERSITY	29	THAILAND	38
KANTABUTRA S	14	UNIVERSITI SAINS MALAYSIA	17	USA	34
AHMAD NH	8	SICHUAN UNIVERSITY OF SCIENCE AND ENGINEERING	10	MALAYSIA	33
SURIYANKIETKAEW S	8	MACQUARIE UNIVERSITY	7	AUSTRALIA	24
PIWOWAR-SULEJ K	6	TEXAS AANDM UNIVERSITY	7	CHINA	24
AVERY GC	4	HANYANG UNIVERSITY	5	SPAIN	21
BULMER E	3	UNIVERSITY OF SOUTH AFRICA	5	UK	15
XUECHENG W	3	WROCLAW UNIVERSITY OF	5	FINLAND	14

		ECONOMICS AND BUSINESS			
AVERY G	2	KING FAHD UNIVERSITY OF PETROLEUM AND MINERALS	4	SOUTH AFRICA	11
BENCSIK A	2	LEHIGH UNIVERSITY	4	INDIA	10

Table 2 shows the 10 Most Prominent Authors, Institutions, and Countries in Sustainable Leadership Research and the number of research articles published. Iqbal Q. is the most prolific author with 16 articles, followed by Kantabutra S. with 14 articles. The Most prominent institution is “Mahidol University” with 29 publications, followed by “Universiti Sains Malaysia” with 17 publications in this area. Notably, Thailand is a leading contributor to research with 34 publications followed by the USA with 34 articles in this area with the highest citations and India is on the 10th number in the top ten countries contributing list.

**Table 3(a): Most Relevant Journals (RQ3)**

Journals	h_index	g_index	m_index	TC
SUSTAINABILITY (SWITZERLAND)	13	21	1.444	501
ACADEMY OF MANAGEMENT LEARNING AND EDUCATION	1	1	0.053	232
EDUCATIONAL LEADERSHIP	1	1	0.048	187
STRATEGY & LEADERSHIP	1	1	0.071	187
JOURNAL OF CLEANER PRODUCTION	2	2	0.4	137
EUROPEAN JOURNAL OF EDUCATION	1	1	0.056	86
LEADERSHIP AND ORGANIZATION DEVELOPMENT JOURNAL	3	3	0.167	81
INTERNATIONAL JOURNAL OF QUALITY AND RELIABILITY MANAGEMENT	1	1	0.167	79
CORPORATE GOVERNANCE	1	1	0.063	75

Table 3 (a) shows the 10 most relevant journals with h\_index, g\_index and m\_index scores and Total Citations. The Journal of “Sustainability (Switzerland)” with 501 total citations is the most relevant journal followed by the “Academy of Management Learning and Education” with 232 total citations.

**Table 3(b) Journals with Highest number of Article publications (RQ3)**

Journals	Articles
SUSTAINABILITY (SWITZERLAND)	34
FRONTIERS IN PSYCHOLOGY	8
VERBUM ET ECCLESIA	4
INTERNATIONAL JOURNAL OF EDUCATIONAL MANAGEMENT	3
JOURNAL OF EDUCATIONAL CHANGE	3
JOURNAL OF GLOBAL RESPONSIBILITY	3
LEADERSHIP AND ORGANIZATION DEVELOPMENT JOURNAL	3
ASIA-PACIFIC JOURNAL OF BUSINESS ADMINISTRATION	2
EUROPEAN JOURNAL OF TRAINING AND DEVELOPMENT	2
GLOBAL BUSINESS AND ORGANIZATIONAL EXCELLENCE	2

Table 3 (b) shows the 10 Journals with Highest number of Article publications. The Journal of “Sustainability (Switzerland)” with 34 articles followed by the “Academy of Management Learning and Education” with 8 articles.

**Table 4: Top Paper References with Total Citations (RQ3)**

Paper References	DOI	Total Citations
BOYATZIS RE, 2006, ACAD MANAGE LEARN EDUC	10.5465/AMLE.2006.20388381	232
AVERY GC, 2011, STRATEGY LEADERSH-a	10.1108/10878571111128766	187
IQBAL Q, 2020, J CLEAN PROD	10.1016/j.jclepro.2020.121429	110
HALLINGER P, 2018, SUSTAINABILITY	10.3390/su10124846	97
HARGREAVES A, 2007, EUR J EDUC	10.1111/j.1465-3435.2007.00294.x	86
BURAWAT P, 2019, INT J QUAL RELIAB MANAGE	10.1108/IJQRM-09-2017-0178	79
MORSING M, 2009, CORP GOV	10.1108/14720700910936083	75
IQBAL Q, 2021, SUSTAINABLE DEV	10.1002/sd.2135	73
SURIYANKIETKAEW S, 2016, SUSTAINABILITY	10.3390/su8040327	67
IQBAL Q, 2021, LEADERSH ORGAN DEV J	10.1108/LODJ-06-2020-0256	52

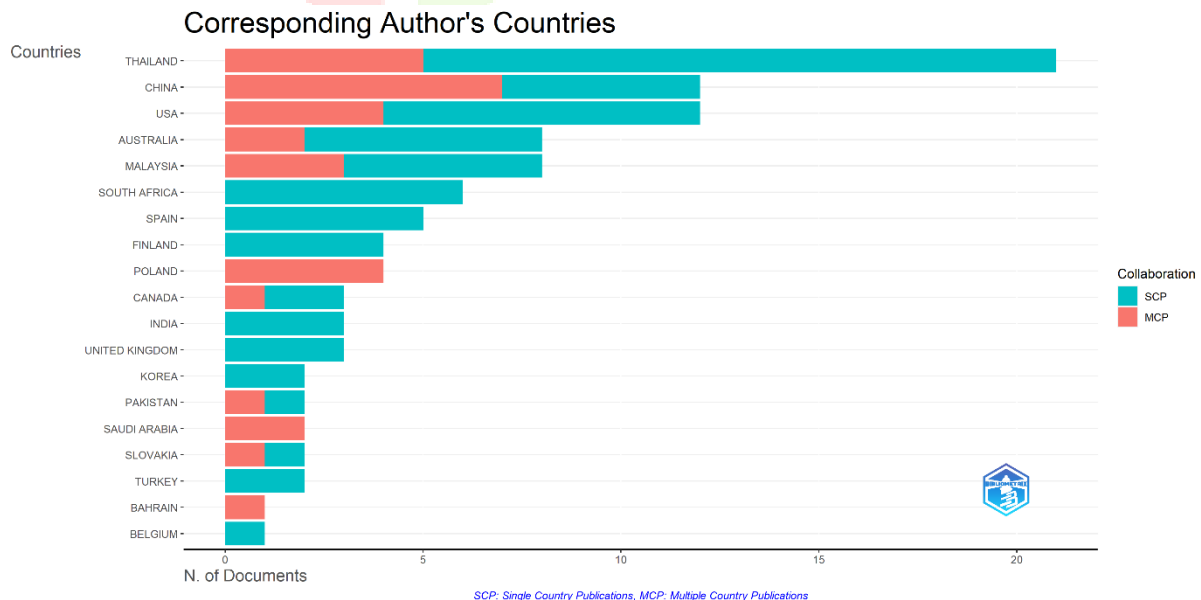
Table 4 indicates the top 10 referred journal with their DOI's and total citation score. “Developing Sustainable Leaders Through Coaching and Compassion” was the highest cited article (Boyatzis et al., 2006) with 232 citations followed by “Sustainable Leadership Practices for Enhancing Business Resilience and Performance” (Avery and Bergsteiner, 2011) with 187 citations. The first paper discusses about How we can develop the effectiveness of developing leaders. Coaching with compassion offers a foundation for sustainable leadership and is an effective method for nurturing leaders to balance their physiological and psychological state (). The second highest cited paper discusses 23 Sustainable Leadership practices which were grouped into three main categories i.e., 1. “Foundation practices” having 14 practices related to valuing, developing and retaining staff, promoting financial, ethical, social and environmental responsibility, 2. “Higher-level practices” have 6 practices i.e., decision-making, self-management, fostering widely shared culture, knowledge sharing, trust and team orientation and 3. “Key performance drivers” have 3 practices i.e., Innovation, staff engagement and quality. All these 23 practices collectively promote brand reputation, improve financial stability, promote long-term stakeholders value and enhance employee job satisfaction (Avery and Bergsteiner, 2011).

Figure2 :Word Cloud (RQ4)



Figure no.2 World Cloud shows the Authors keywords which were used frequently in the Sustainable Leadership research. The size of the words represents the most frequently used words which are Sustainability leadership, Sustainable development, organizational framework, higher education and small and medium enterprises. Sustainable Leadership is mostly searched by term Sustainability leadership and it is mostly studied in the context of Sustainable development and the major empirical studies related to Sustainable Leadership were conducted in the higher education and small and medium enterprises.

Figure 3: Contributing Countries (RQ4)



Note: SCP= Single Country Publications MCP= Multiple Country Publications

Figure 3 shows the top highest contributing countries in the Sustainability Leadership Research. This figure depicts two types of country publications, one is Single Country Publications shown with the help of green colour and the other is Multiple Country Publications shown with the help of orange colour. In the Single Country Publications, the top three contributing countries are Thailand, China and USA and the top three countries with Multiple Country Publications are China, USA and Poland and if we carefully look at the Figure, **India is only** contributing in Single Country Publications and the publication contribution is less than 5 in top journals.

## Figure 4: Top Contributing Countries (RQ4)

### Country Scientific Production

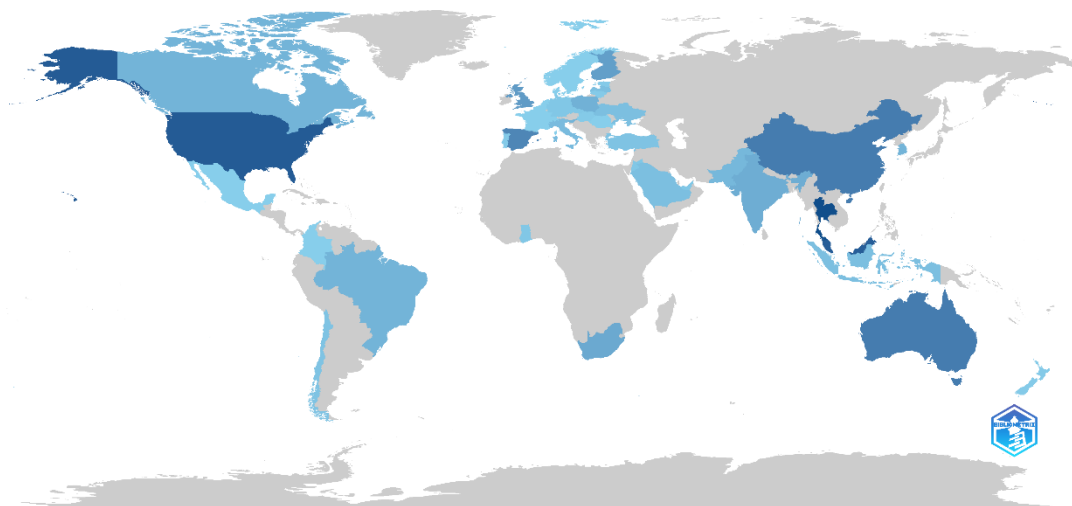


Figure no. 4 depicts that countries with dark blue colour are the top contributing countries doing scientific production in the area of Sustainable Leadership. These countries were Thailand, USA, Malaysia, Australia and China.

## 5. Implications of the Study

The performance analysis of this study offers valuable insights into the prominent authors, countries, and institutions involved, as well as the most influential articles with the highest citations in Sustainable Leadership research. This information serves as a resource for academics and researchers, enabling them to identify leading contributors in this field and access highly cited articles to support their own research endeavors and address prevailing challenges in academia and industry. Moreover, the science-mapping analysis enriches the existing knowledge base by highlighting key topics explored through frequently occurring keywords in the word cloud and the map provides the information of countries contributing in the Sustainable Leadership research.

## 6. Limitations and Future Research Directions

This study shed insight in the area of progress in Sustainable Leadership research. Despite the insights, this paper has some limitations. First, the bibliometric data was extracted from only single database i.e., Scopus which restrict the scope of study. Future researchers are recommended to consider other databases such as Science Direct and Web of Science for more comprehensive search and only Biblioshiny software was used for analysis future researcher can use VOS viewer, Cite Space for more comprehensive results. Future researchers are advocated to use interchangeable key terms for sustainable leadership such as Responsible leadership, Pro-environment leadership and Ethical Leadership and the future researchers should research in other sectors for the generalizability of the research topic and India has low contribution in the Sustainable leadership research. In future research endeavors, it is advisable to conduct theoretical and empirical studies to deepen understanding of Sustainable leadership in India and India must also collaborate with other countries for deeper insight in this area.

## 7. Conclusion

To study the current trends and prospects in Sustainable Leadership domain. A bibliometric study was conducted by comprehensive literature search from Scopus database using most frequently keywords following Boolean-based technique and the retrieved data was reduced by selecting the subject areas, document type and language and a CSV file was downloaded and which was further data cleaned following the guidelines of PRISMA technique and finally 142 studies were arrived and analysed using Bibliometric R-studio software Biblioshiny. The annual publication trends show an exponential increase in the publication from 2018 onwards and Iqbal Q. is the most prominent author, Mahidol University is the top institution and Thailand is the top contributing country. “Sustainability” (Switzerland) is the highest cited and highest



publication journal in the Sustainability Leadership research and Sustainability Leadership study was mostly studied in SMEs and Higher education institution and the top cited journals in the area. This study will provide insight to the researchers, practitioners and the one who want to further contribute in this area.

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