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Sustainable Leadership and Sustainable Business Performance: A Bibliometric Analysis Using VOSviewer

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ABSTRACT

In response to escalating environmental, social, and economic challenges, sustainable leadership has emerged as a critical driver of long-term organizational success. At the same time, sustainable business performance has become a central focus for both scholars and practitioners. Despite its relevance, research linking sustainable leadership to sustainable business performance remains fragmented. This study addresses the gap through a bibliometric analysis of 260 Scopus-indexed publications from 2010 to August 2025. Citation patterns, collaboration networks, and thematic clusters were mapped using VOSviewer software to identify research trends and intellectual structures. The results revealed that the most influential works identified include Iqbal et al. (2020), published in the *Journal of Cleaner Production* with 195 citations; Suriyankietkaew and Avery (2016), published in *Sustainability* with 89 citations; and Kantabutra and Avery (2011), published in the *Journal of Business Strategy* with 44 citations. Keyword co-occurrence analysis identified four thematic clusters: foundations of organizational sustainability, innovation for green and economic sustainability, strategic alignment with the United Nations Sustainable Development Goals, and integration of external drivers with internal knowledge capabilities. The findings demonstrate that sustainable leadership is evolving into a strategic imperative that drives sustainable business performance, with growing global collaborations and strong contributions from Asia.

1. INTRODUCTION

The 21st century has witnessed a paradigm shift in how organizations define and measure success. Traditional business performance indicators, which focus primarily on financial outcomes, are no longer sufficient to capture the complexity of operating in an interconnected, resource-constrained, and socially conscious world. Increasingly, stakeholders, including investors, customers, employees, and regulators, demand that organizations demonstrate their commitment to the principles of sustainability: environmental stewardship, social responsibility, and long-term economic viability [1, 2]. This transition has redefined leadership imperatives, creating a pressing need for leaders who can balance economic performance with environmental and social impacts [3].

Within this evolving business landscape, sustainable leadership has emerged as a strategic approach that goes beyond short-term profit maximization. Sustainable leaders operate with a long-term vision, prioritize stakeholder engagement, and integrate sustainability principles into decision-making, operations, and corporate culture [4]. They foster innovation, resilience, and ethical conduct [5], ensuring that organizations not only survive but thrive in volatile, uncertain, complex, and ambiguous (VUCA) environments.

Simultaneously, sustainable business performance has gained traction as a multidimensional construct that encompasses environmental performance (e.g., carbon footprint reduction, resource efficiency), social performance (e.g., employee well-being, community engagement), and economic performance (e.g., profitability, market share) [6, 7]. Research increasingly suggests that leadership styles are critical drivers of sustainable business outcomes [8-10]. However, the literature examining the intersection of sustainable leadership and sustainable business performance is dispersed across disciplines such as management, organizational behavior, environmental science, and corporate governance.

Although the relevance of sustainable leadership to organizational performance is widely acknowledged [5, 11, 12], academic research on this topic has developed in a fragmented manner. Studies vary in definitions, theoretical frameworks, and methodological approaches [13], making it challenging to consolidate existing knowledge. Some studies emphasize environmental dimensions, others focus on social impact, and yet others prioritize governance and ethical leadership, resulting in a lack of integrative frameworks [14]. Moreover, while empirical research and conceptual models

abound, there has been limited systematic effort to map the intellectual landscape of the field. Bibliometric analysis, an established method for quantitatively assessing the structure and evolution of scientific research, offers a solution by enabling scholars to identify influential works, thematic clusters, collaboration patterns, and emerging research frontiers [15]. However, to date, there is a scarcity of bibliometric studies that comprehensively investigate the intersection of sustainable leadership and sustainable business performance, particularly through the use of advanced visualization tools such as VOSviewer. While bibliometric approaches have been extensively applied in sustainability research to explore topics such as corporate social responsibility (CSR) [16], green innovation [17], and environmental, social, and governance (ESG) performance [18], the combined domain of sustainable leadership and sustainable business performance remains largely underexplored.

This study, therefore, aims to systematically analyze and visualize the body of literature at the intersection of sustainable leadership and sustainable business performance. By employing bibliometric techniques and using VOSviewer software, we seek to uncover patterns of knowledge production, intellectual structures, and thematic trends in this field. The specific objectives are:

1) To identify publication trends over time, including the volume and growth rate of research output.
2) To map influential authors, journals, institutions, and countries contributing to the field.
3) To analyze thematic clusters through keyword co-occurrence networks and reveal the intellectual structure of the domain.
4) To detect emerging themes and research frontiers for future scholarly inquiry.

Through this analysis, the study provides a bird's-eye view of the field, enabling scholars to understand its historical trajectory, current state, and potential future directions.

2. LITERATURE REVIEW

2.1 Concept of sustainable leadership

Sustainable leadership has emerged as a pivotal concept in management literature over the past two decades. It refers to leadership practices that ensure the long-term health of an organization while simultaneously delivering value to multiple stakeholders, including shareholders, employees, customers, communities, and the environment [14, 19]. Unlike traditional leadership models that focus predominantly on financial performance and short-term gains, sustainable leadership adopts a holistic, future-oriented perspective [4, 20]. It encompasses: (1) Long-term orientation: Prioritizing enduring value creation over immediate returns; (2) Triple bottom line (TBL) commitment: Balancing economic, environmental, and social outcomes; (3) Stakeholder engagement: Actively involving internal and external stakeholders in decision-making; and (4) Ethical and responsible behavior: Upholding integrity, transparency, and fairness in all operations.

Scholars have linked sustainable leadership to other leadership styles, such as transformational leadership [21], ethical leadership [22], and servant leadership [23, 24], but with a distinct emphasis on sustainability principles and systemic thinking. For example, transformational leaders inspire followers to achieve beyond expectations [25, 26], but sustainable leaders extend this inspiration toward achieving environmental stewardship and social equity [27].

2.2 Dimensions and models of sustainable leadership

Avery and Bergsteiner's [28] "Sustainable Leadership Model" is among the most cited frameworks. It consists of 23 elements grouped into three categories: (1) Systemic elements (e.g., long-term perspective, innovation, staff retention, stakeholder focus); (2) People elements (e.g., staff development, trust, self-management); and (3) Organizational culture elements (e.g., ethical behavior, high-quality relationships, decentralized decision-making).

Other scholars, such as Hargreaves and Fink [29], McInerney and Ractliffe [30], have conceptualized sustainable leadership as leadership that preserves and develops human and material resources in educational and corporate settings, ensuring continuity and capacity building. Similarly, Lambert [31] emphasizes the interdependence between leadership practices and ecological, social, and economic sustainability. These frameworks collectively underline that sustainable leadership is multi-dimensional, requiring leaders to integrate strategic foresight, ethical responsibility, innovation capacity, and a stakeholder-centered mindset.

2.3 Sustainable business performance

Sustainable business performance extends traditional performance metrics by incorporating environmental and social dimensions alongside economic outcomes. It is often assessed through: (1) Environmental performance: Reductions in waste, energy use, carbon emissions, and improvements in resource efficiency [32]; (2) Social performance: Employee well-being, diversity and inclusion, community contributions, and stakeholder satisfaction [33]; and (3) Economic performance: Long-term profitability, cost efficiency, and market competitiveness.

Scholars have proposed various measurement tools, including Global Reporting Initiative (GRI) indicators [34], Environmental, Social, and Governance (ESG) scores [35], and sustainability balanced scorecards [36]. These multidimensional frameworks allow organizations to track progress toward sustainability goals while balancing trade-offs among performance dimensions.

2.4 Linking sustainable leadership to sustainable business performance

A growing body of research explores the link between sustainable leadership and sustainable business performance. For instance, Ahsan and Khawaja [5] found that sustainable leadership exerts a positive influence on corporate environmental performance by fostering strategic green innovation, which integrates environmentally friendly technologies, processes, and practices into the firm's overall strategy, thereby enhancing resource efficiency, reducing environmental impact, and strengthening competitive advantage. Cheruiyot and Venter [37] argue that leaders who adopt a complexity mindset are better positioned to navigate sustainability challenges, fostering greater organizational adaptability and improving overall performance. Moreover, Ren et al. [38] demonstrated that leadership commitment to environmental goals fosters employee pro-environmental

behaviors, which collectively enhance organizational environmental performance.

3. RESEARCH METHODS

This study adopts a bibliometric analysis approach to systematically map and evaluate the existing body of knowledge on the intersection between sustainable leadership and sustainable business performance. Bibliometric analysis is a quantitative research technique that applies statistical and network analysis to academic publications [39], enabling the identification of research trends, influential authors, leading institutions, and thematic clusters within a specific domain. This method was chosen because it offers a comprehensive, replicable, and objective means of synthesizing large volumes of scholarly literature while revealing emerging patterns and future research directions.

The Scopus database was selected as the primary source for data collection due to its extensive coverage of high-quality, peer-reviewed journals and its compatibility with bibliometric tools such as VOSviewer. The search query combined relevant keywords and Boolean operators to capture publications that address both sustainable leadership and sustainable business performance.

The initial search query was: TITLE-ABS-KEY ("Sustainable Leadership" AND "Sustainable Business Performance"). This search yielded 738 documents, as shown in Figure 1. The results were then refined by applying the publication year range 2010-August 2025, reducing the dataset to 671 documents. To further enhance relevance, a secondary filtering step was applied to include only English-language publications and to focus on specific keywords such as "Leadership," "Sustainability," "Sustainable Performance," "Business Performance," and "Sustainable Leadership," resulting in a final dataset of 260 documents.

Based on source type, the dataset comprised 206 journal articles (79.23%), 25 conference proceedings (9.62%), 18 books (6.92%), 10 book series (3.85%), and 1 trade journal (0.38%). Regarding open access classification, 82 documents (31.54%) were all open access, followed by 62 Gold (23.85%), 30 Green (11.54%), 13 Hybrid Gold (5.00%), and 4 Bronze (1.54%) publications.

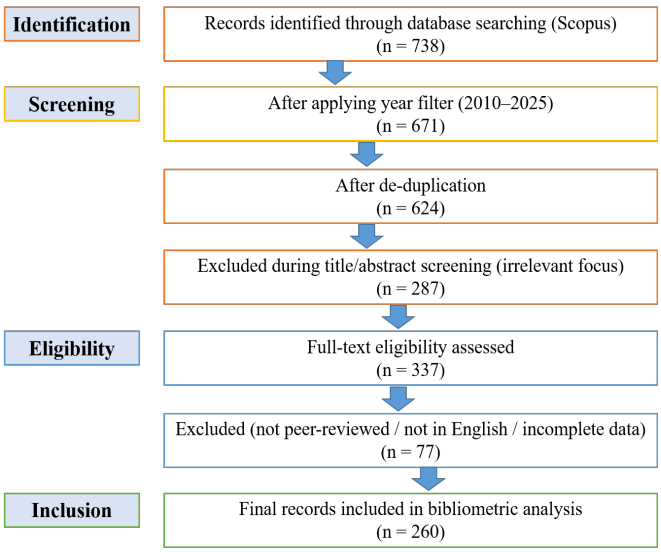

Figure 1. Data cleaning and screening process

4. RESULTS AND DISCUSSION

Based on the publication year distribution of the 260 documents analyzed (Figure 2), the dataset comprises 3 documents (1.15%) in 2010, 10 (3.85%) in 2011, 8 (3.08%) in 2012, 7 (2.69%) in 2013, 11 (4.23%) in 2014, 6 (2.31%) in 2015, 6 (2.31%) in 2016, 7 (2.69%) in 2017, 8 (3.08%) in 2018, 14 (5.38%) in 2019, 15 (5.77%) in 2020, 20 (7.69%) in 2021, 17 (6.54%) in 2022, 33 (12.69%) in 2023, 42 (16.15%) in 2024, and 53 (20.38%) in 2025. This distribution reveals a generally upward trend over the years, with a particularly sharp increase from 2023 onwards. Such growth indicates a rising scholarly interest in the intersection of sustainable leadership and sustainable business performance, suggesting that the topic has gained substantial traction in recent academic discourse.

Based on subject area distribution (Figure 3), the dataset comprises 120 documents in Business, Management and Accounting (46.15%), 103 in Social Sciences (39.62%), 89 in Environmental Science (34.23%), 72 in Energy (27.69%), 61 in Computer Science (23.46%), 30 in Economics, Econometrics and Finance (11.54%), 29 in Engineering (11.15%), 26 in Decision Sciences (10.00%), 12 in Medicine (4.62%), 10 in Multidisciplinary (3.85%), 10 in Psychology (3.85%), 6 in Agricultural and Biological Sciences (2.31%), 6 in Earth and Planetary Sciences (2.31%), 4 in Arts and Humanities (1.54%), 3 in Chemical Engineering (1.15%), 3 in Mathematics (1.15%), 2 in Biochemistry, Genetics and Molecular Biology (0.77%), 2 in Health Professions (0.77%), 2 in Materials Science (0.77%), 2 in Nursing (0.77%), 1 in Chemistry (0.38%), and 1 in Pharmacology, Toxicology and Pharmaceutics (0.38%).

Table 1 highlights the seminal contribution of Iqbal et al. [40], published in the Journal of Cleaner Production, which stands out as the most influential work in the field with 195 citations. This study employs a moderated-mediation framework to investigate the role of psychological empowerment, establishing sustainable leadership as a critical antecedent of sustainable business performance. Its high citation count can be attributed to both the methodological robustness of the research design and its publication in a reputable, high-impact journal, which enhances its visibility and academic credibility. The second most cited article, Suriyankietkaew and Avery [41] in Sustainability Switzerland (89 citations), provides compelling empirical evidence from Thai SMEs, underscoring the financial performance implications of sustainable leadership practices in emerging economies. Study of Kantabutra and Avery [42], with 44 citations in the Journal of Business Strategy, is an early and influential case study on the Siam Cement Group, highlighting the strategic longevity of sustainable leadership. Their later work, Kantabutra and Avery [43], introducing the "Honeybee practices" framework (36 citations), enriches the discourse through a values-driven, stakeholder-centric lens. Finally, Suriyankietkaew [44], though more recent and with 22 citations, extends the discussion to small enterprises, integrating sustainable leadership with entrepreneurial strategies for corporate sustainability. Collectively, these highly cited works reveal dominant themes in the literature, while also highlighting the strong representation of Asian case studies and the recurring scholarly influence of Avery and Kantabutra. The prominence of these authors and the rapid citation growth of recent works suggest a field in dynamic expansion, with Asia emerging as a significant context for advancing sustainable leadership theory and practice.

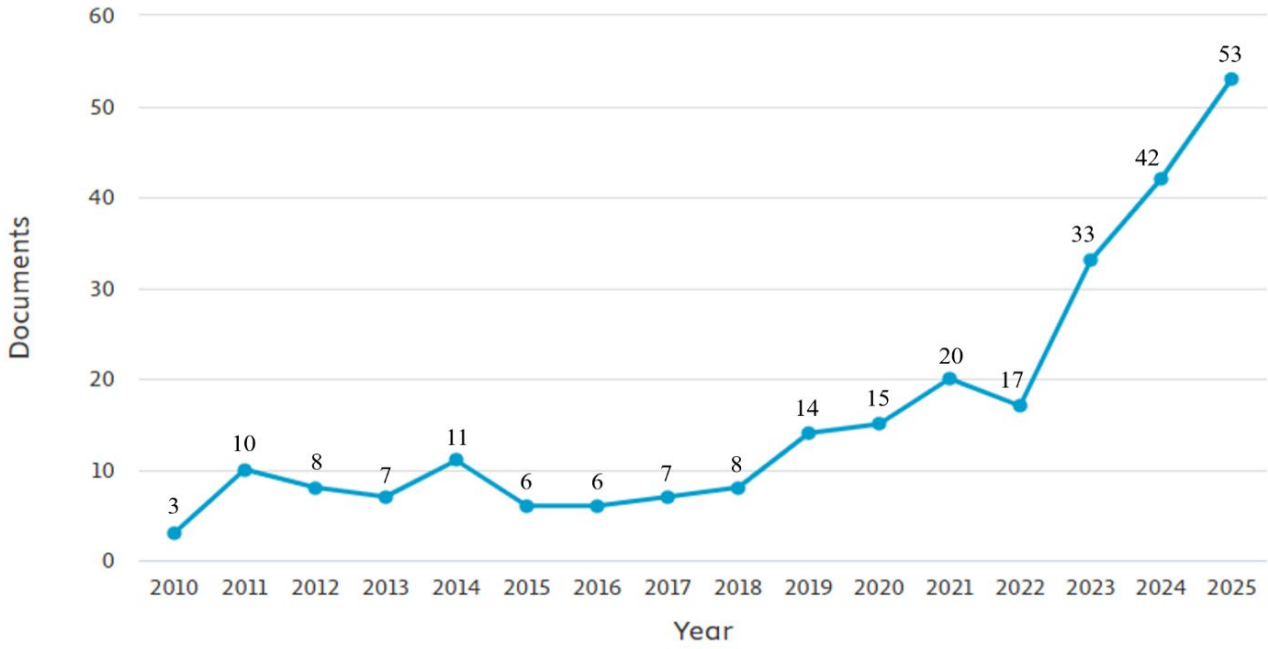

Figure 2. Publication year distribution

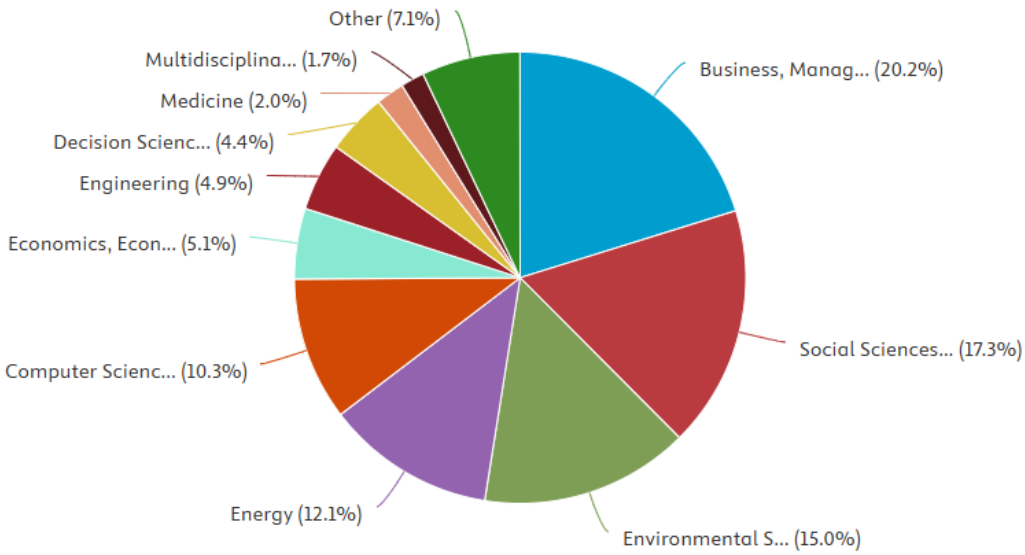

Figure 3. Subject area distribution

Table 1. The top 5 most cited articles in the field

Rank	Document Title	Authors	Source	Year	Citations
1	A moderated-mediation analysis of psychological empowerment: Sustainable leadership and sustainable performance	Iqbal, Q., Ahmad, N.H., Nasim, A., Khan, S.A.R.	Journal of Cleaner Production, 262: 121429	2020	195
2	Sustainable leadership practices driving financial performance: Empirical evidence from Thai SMEs	Suriyankietkaew, S., Avery, G.	Sustainability Switzerland, 8(4): 327	2016	89
3	Sustainable leadership at Siam Cement Group	Kantabutra, S., Avery, G.C.	Journal of Business Strategy, 32(4): 32-41	2011	44
4	Sustainable leadership: Honeybee practices at a leading Asian industrial conglomerate	Kantabutra, S., Avery, G.	Asia Pacific Journal of Business Administration, 5(1): 36-56, 17084263	2013	36
5	Sustainable leadership and entrepreneurship for corporate sustainability in small enterprises: An empirical analysis	Suriyankietkaew, S.	World Review of Entrepreneurship Management and Sustainable Development, 15(1-2): 256-275	2019	22

Table 2. The top 5 journals in the field

Rank	Journal Name	Publisher	Documents	Cite Score 2024	SJR 2024
1	Sustainability (Switzerland)	MDPI	45	7.7	0.688
2	Journal of Cleaner Production	Elsevier	7	20.7	2.174
3	Business Strategy and the Environment	John Wiley & Sons	4	23.7	3.609
4	Plos One	Public Library of Science	4	5.4	0.803
5	Cogent Business and Management	Cogent OA	4	4.9	0.596

Table 3. The top 5 authors in the field

Rank	Author Name	Affiliation	Country	Documents	H-Index
1	Kantabutra, S.	Mahidol University	Thailand	9	24
2	Suriyankietkaew, S.	Mahidol University	Thailand	5	16
3	Avery, G.C.	Macquarie University	Australia	4	21
4	Mokhtar, M.B.	Sunway University	Malaysia	2	29
5	Adams, S.B.	Perdue School of Business	United States	2	7

Table 4. The top 5 affiliations in the field

Rank	Affiliation	Country	Documents	QS World University Ranking
1	Mahidol University	Thailand	17	358
2	Macquarie University	Australia	10	138
3	Universiti Kebangsaan Malaysia	Malaysia	5	126
4	University of Pretoria	South Africa	4	362
5	University of South Africa	South Africa	4	901-950

The analysis of the top five journals publishing on sustainable leadership and sustainable business performance reveals a balance between high-volume and high-impact outlets (see Table 2). *Sustainability (Switzerland)*, published by the Multidisciplinary Digital Publishing Institute (MDPI), emerges as the leading publication outlet with 45 documents, highlighting its central role in disseminating research on sustainability. Despite its moderate Scientific Journal Ranking (SJR) of 0.688, the journal is widely recognized for its accessibility and inclusive scope, favoring the broad dissemination of knowledge over academic prestige. It serves as a key platform for studies exploring the intersection of sustainability, leadership practices, and organizational performance. In contrast, *Journal of Cleaner Production* (7 documents, CiteScore 20.7, SJR 2.174) and *Business Strategy and the Environment* (4 documents, CiteScore 23.7, SJR 3.609) publish fewer papers but are associated with higher impact, reflecting their selective, high-quality standards. *Plos One* (4 documents) demonstrates interdisciplinary reach with moderate impact metrics, while *Cogent Business and Management* (4 documents) offers a more accessible platform despite lower impact scores. Overall, the data indicate that researchers face a strategic choice between maximizing visibility through high-output journals and targeting long-term influence via selective, high-impact outlets.

The analysis of the top five authors in sustainable leadership and sustainable business performance research reveals a strong concentration of scholarly output in Southeast Asia, particularly Thailand (see Table 3). Kantabutra, S. of Mahidol University leads with nine publications and an H-index of 24, followed by frequent collaborator Suriyankietkaew, S. (five publications, H-index 16), whose work often integrates sustainable leadership, financial performance and SME contexts. Avery, G.C. of Macquarie University, Australia (four publications, H-index 21), has made influential contributions linking sustainable leadership to strategic management, frequently co-authoring with Kantabutra. Although Mokhtar, M.B. of Sunway University, Malaysia, has only two publications in this niche, his high H-index of 29 reflects broad interdisciplinary impact. Adams, S.B. of the Perdue School of Business, United States, represents emerging North American engagement with two publications and an H-index of 7. These patterns highlight the prominence of Mahidol University as a hub of sustainable leadership research, the strength of regional collaboration networks, and the gradual diversification of geographical contributions to the field.

The top five institutional affiliations in sustainable leadership and sustainable business performance research are led by Mahidol University, Thailand (17 documents, QS 358) (see Table 4), which has emerged as a regional research hub largely through the prolific output of key scholars such as Kantabutra and Suriyankietkaew. Macquarie University, Australia (10 documents, QS 138) follows, with significant contributions driven by Avery and strong collaborative links with Mahidol. Universiti Kebangsaan Malaysia (5 documents, QS 126) reinforces Southeast Asia's growing presence in the field, while University of Pretoria (4 documents, QS 362) and University of South Africa (4 documents, QS 901-950) add valuable African perspectives. The data highlights that high global rankings do not always align with publication volume, as institutional leadership in niche areas can be shaped more by focused expertise and collaborative networks than by overall university prestige.

Table 5. The top 5 countries in the field

Rank	Country	Documents
1	United States	32
2	United Kingdom	27
3	Thailand	23
4	China	22
5	India	20

The country-level analysis in Table 5 shows that the United States leads research on sustainable leadership and sustainable business performance with 32 publications, followed closely by the United Kingdom (27), reflecting the strong research infrastructure and established academic traditions of these

developed economies. Among emerging economies, Thailand ranks third with 23 publications, a remarkable achievement largely driven by the concentrated output of scholars at Mahidol University. China (22) and India (20) complete the top five, underscoring their growing engagement with sustainability and leadership scholarship. The mix of Global North and Global South representation highlights both the maturity of research in advanced economies and the increasing contributions from rapidly developing nations, creating fertile ground for cross-country collaborations that integrate established theoretical frameworks with context-specific innovations.

In the co-authorship network, Ahmed, A. of King Khalid University, Saudi Arabia, and Amin, M. B. of the University of Debrecen, Hungary, emerge as central figures in collaborative research on sustainable leadership and sustainable business performance (see Figure 4). Their partnerships span multiple countries, including collaborations with Dhali, S. (University of Barishal, Bangladesh), Gazi, M. A. I. (Jiujiang University, China), Senathirajah, A. R. B. S. (INTI International University, Malaysia), and Al-Kahtani, S. M. (Albaydha University, Yemen). This geographically diverse network underscores the field's increasingly international scope and the role of cross-border collaboration in advancing sustainability-focused leadership scholarship.

Figure 5 illustrates that prior to 2020, research on sustainable leadership predominantly concentrated on laying the theoretical and managerial foundations of the field. Key themes included CSR and organizational culture, both commonly explored as mechanisms to enhance employee performance and secure competitive advantage. During this period, sustainability was primarily associated with corporate ethics and human resource outcomes, reflecting an emphasis on internal organizational practices. Moreover, strategic decision-making began to emerge as an essential dimension of sustainable leadership, highlighting the growing recognition of leaders' roles in shaping long-term sustainability goals.

During the 2020-2022 period, the field demonstrated a clear maturation, evolving beyond CSR-centric approaches toward achieving measurable sustainability outcomes. Scholars increasingly established explicit linkages between sustainable leadership and key organizational metrics such as business performance, innovation, and growth. Green innovation and sustainable growth emerged as prominent themes, reflecting a paradigm shift wherein sustainability transitioned from a compliance-driven obligation to a core element of competitive strategy.

From 2022 to 2024, research on sustainable leadership increasingly emphasized its alignment with environmental responsibility and global policy agendas, particularly the Sustainable Development Goals (SDGs). Scholars began to examine environmental performance and knowledge management not as peripheral concerns, but as integral components of strategic business planning. Climate change emerged as a prominent external force, prompting organizations to re-evaluate and transform their operational models.

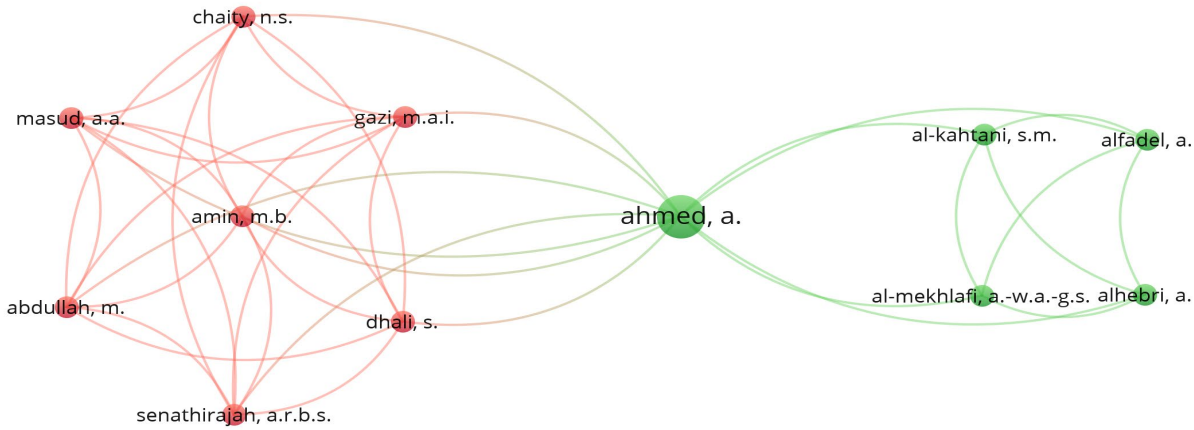

Figure 4. Co-authorship networks

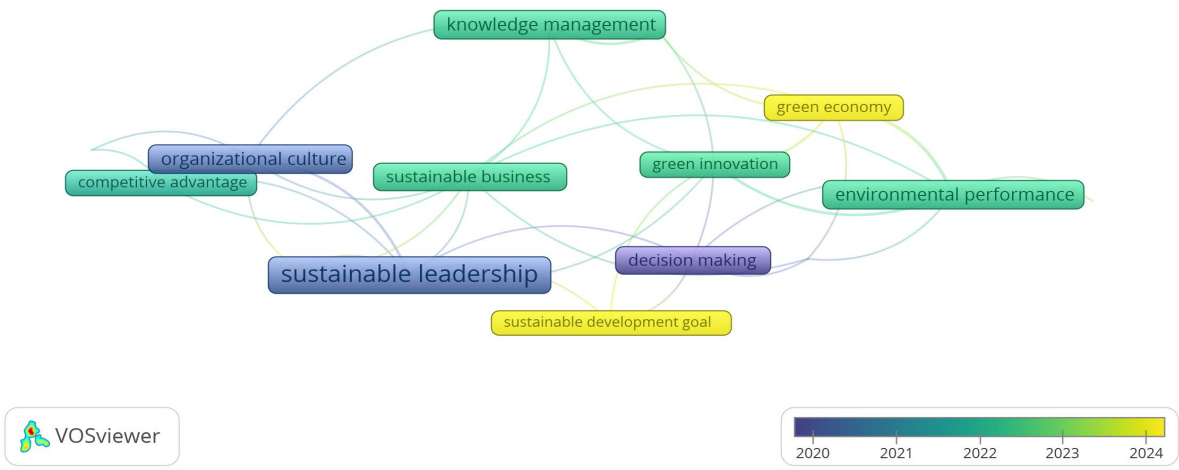

Figure 5. Overlay visualization

Figure 6. Result of co-occurrence analysis

Up to 2024, the latest literature underscores key enablers of sustainable transformation, particularly the green economy and strategic adaptability. These developments indicate a shift in corporate priorities toward strengthening internal capabilities that enable firms to respond effectively to environmental and societal pressures. Throughout this evolution, sustainable leadership has remained a consistent and dynamic focus, reaffirming its vital role in guiding organizations through complex sustainability challenges.

The co-occurrence analysis of keywords using VOSviewer identified four prominent thematic clusters (see Figure 6). These clusters represent interconnected yet distinct streams of research that shape the evolving landscape of sustainable leadership and its relationship with sustainable business performance.

4.1 Cluster 1: Organizational foundations of sustainability

Cluster 1 emphasizes the role of internal organizational dynamics in shaping how sustainability is integrated into the core operations of a firm. At the heart of this integration is sustainable leadership, which acts as a critical driver by embedding values of responsibility, ethical behavior, and long-term strategic vision into everyday organizational practices [45, 46]. Leaders who adopt a sustainability-oriented mindset influence decision-making processes, resource allocation, and strategic priorities, ensuring environmental and social considerations remain central to organizational objectives.

In this context, corporate social responsibility (CSR) serves as a strategic mechanism that aligns organizational actions with stakeholder expectations and ethical imperatives [47]. CSR initiatives, including community engagement, employee welfare programs, and environmental stewardship, provide tangible evidence of a firm's ethical commitment, enhancing reputation, customer loyalty, and overall competitive advantage. By integrating CSR into a broader sustainability strategy rather than treating it as a separate activity, organizations can generate both social impact and economic value.

Organizational culture plays a complementary role in this process. When culture is shaped by ethical, visionary, and sustainability-focused leadership, it promotes employee behaviors that align with ecological and social objectives [48]. Employees are more likely to internalize sustainability values, take initiative in environmentally friendly practices, and engage in socially responsible programs [49], which strengthens overall organizational performance.

This combination of sustainable leadership, CSR, and supportive organizational culture reinforces a holistic sustainable business model. Such a model views profitability and social or environmental responsibility as interconnected goals. By embedding sustainability into cultural norms and strategic initiatives, organizations can achieve higher employee engagement, stronger stakeholder trust, and differentiated competitive positioning, contributing to long-term societal and environmental well-being.

4.2 Cluster 2: Green innovation and economic sustainability

Cluster 2 emphasizes the economic and innovative dimensions of sustainable leadership. Scholars argue that sustainability-oriented leadership not only ensures regulatory compliance and enhances corporate reputation but also acts as a driver of green innovation [50]. Leaders who embrace sustainability foster a culture of creativity, invest in research and development, and integrate environmental considerations into both product and process innovation [51]. These actions enable organizations to develop new technologies, improve operational efficiency, and create environmentally friendly products that address evolving market and societal demands.

In the context of the green economy, such strategic leadership enables environmental performance to serve as a measurable outcome, strengthening stakeholder trust and contributing to financial success [5]. By prioritizing sustainable practices alongside economic goals, leaders demonstrate that environmental responsibility can complement profitability rather than hinder it. Sustainable growth, in this perspective, is not seen as a limitation on business expansion but rather as a catalyst for innovation, competitive advantage, and organizational resilience.

4.3 Cluster 3: Strategic alignment with global goals

Cluster 3 examines the strategic and institutional alignment of leadership with global sustainability frameworks, particularly emphasizing the United Nations (UN) SDGs. This research stream demonstrates how sustainability is systematically embedded into organizational decision-making through multi-stakeholder engagement, ethical deliberation, and systems thinking [52]. Leaders operating within this paradigm are not only focused on immediate organizational outcomes but also on broader societal and ecological impacts, ensuring decisions account for complex social, environmental, and economic interdependencies.

The concept of environmental sustainability is expanded to encompass global ecosystem stewardship and the long-term well-being of humanity. Sustainable leaders are expected to make choices that respect planetary boundaries, promote intergenerational equity, and protect natural resources and ecosystems [53]. By aligning organizational strategies with the SDGs, firms institutionalize sustainability in leadership practices, positioning themselves as active contributors to solving global environmental and social challenges. This alignment transforms sustainability from a voluntary or symbolic initiative into a core principle of strategic governance, embedding ethical considerations and accountability across all levels of decision-making.

Ultimately, this cluster frames sustainable leadership as a form of ethical governance oriented toward planetary-scale objectives, extending beyond narrow internal performance metrics. Leaders who embrace this approach not only enhance their organization's legitimacy and credibility but also foster a culture of responsibility and long-term vision that addresses sustainability imperatives at both local and global levels.

4.4 Cluster 4: External drivers and knowledge integration

Cluster 4 emphasizes the intersection between external environmental challenges and internal knowledge capabilities within the sustainable leadership paradigm. Climate change, as one of the most urgent global risks, increasingly shapes business strategies and redefines leadership responsibilities. In this context, sustainable leaders are expected to demonstrate adaptive capacity, implement proactive risk management, and foster climate-resilient innovation [54]. Such leadership requires the ability to anticipate environmental disruptions, make strategic decisions under uncertainty, and guide organizations toward long-term sustainability.

At the same time, knowledge management emerges as a crucial enabler for sustainable leadership. By facilitating knowledge sharing, promoting organizational learning, and integrating sustainability expertise across operations, organizations can build internal capabilities that complement their external responsiveness. This approach aligns closely with dynamic capabilities theory, which emphasizes the importance of continuously reconfiguring organizational competencies to respond effectively to rapidly evolving environmental and market conditions [55, 56].

5. CONCLUSIONS

This study provides a comprehensive overview of the intellectual landscape at the intersection of sustainable leadership and sustainable business performance. By analyzing 260 publications from 2010 to 2025, the study reveals a growing scholarly interest in this domain, marked by a significant rise in publications since 2023. The results confirm that sustainable leadership has evolved from a theoretical concept to a strategic imperative aligned with organizational performance, green innovation, and SDGs.

Four thematic clusters were identified: (1) organizational foundations of sustainability, emphasizing CSR, ethical leadership, and culture; (2) green innovation and economic sustainability, highlighting the role of leadership in driving innovation and competitiveness; (3) strategic alignment with global frameworks such as the SDGs; and (4) integration of external environmental challenges and internal knowledge capabilities. These clusters reflect a multi-dimensional understanding of how leadership fosters long-term value creation across environmental, social, and economic pillars.

The findings underscore the increasing influence of authors and institutions from Southeast Asia, particularly Mahidol University and Macquarie University, as well as the expansion of collaborative networks that span both developed and emerging economies. Journals like *Sustainability (Switzerland)* and *Journal of Cleaner Production* serve as key platforms for disseminating impactful research in this field.

Practically, the findings offer valuable guidance for policymakers, business leaders, and educators. Organizations can leverage the insights to embed sustainability principles into leadership development programs, emphasizing long-term thinking, stakeholder engagement, and innovation capabilities. The alignment of leadership practices with global frameworks like the UN SDGs underscores the need for businesses to move beyond compliance and adopt transformative strategies that create shared value. For practitioners in emerging economies, the strong representation of Asian contexts suggests that sustainable leadership is both context-sensitive and globally relevant. Additionally, institutions and training providers can use this study to inform curriculum design, prioritizing sustainability-oriented leadership competencies that prepare future leaders to navigate complex environmental and social challenges.

This study is not without limitations. First, reliance on a single database (Scopus) may have excluded relevant works indexed in other sources, such as Web of Science, Google Scholar, or regional repositories, thereby narrowing the scope of coverage. Second, the keyword strategy, while systematic, may not have fully captured related concepts such as responsible leadership, eco-leadership, or corporate sustainability performance, which may have led to gaps in the dataset. Third, citation-based indicators are subject to distortion through self-citation practices, journal visibility, and disciplinary norms, which may inflate the apparent influence of certain authors or institutions. Fourth, bibliometric methods, while powerful for mapping structural patterns, cannot provide qualitative insights into how sustainable leadership drives business performance. Finally, the temporal coverage ending in August 2025 excludes emerging works still under review or in the early stages of dissemination.

Future research can address these limitations by broadening data collection to include multiple databases and adopting more diverse keyword strategies, thereby ensuring wider coverage of relevant literature. Employing normalized citation metrics could reduce distortions caused by self-citation and disciplinary norms, while qualitative and mixed-method approaches may offer deeper insights into how sustainable leadership translates into performance outcomes. Comparative and cross-cultural studies could enrich understanding of contextual influences, while longitudinal analyses may capture the field's dynamic evolution. Such efforts would strengthen theoretical integration and provide more robust evidence of the pathways linking sustainable leadership with sustainable business performance.

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APPENDIX

Search Strategy

To ensure comprehensive coverage of the literature, a full Boolean search query was developed and applied to the Scopus database, incorporating synonyms, related terms, and variations of both sustainable leadership and sustainable business performance.

Full Boolean Query

(TITLE-ABS-KEY("sustainable leadership"
OR "green leadership"
OR "eco-leadership"
OR " environmental leadership AND sustainability")
AND
TITLE-ABS-KEY("sustainable business performance"
OR "sustainable performance"
OR "corporate sustainability performance"
OR "sustainable organizational performance"
OR "ESG performance"
OR "economic social environmental performance"))

Justification of Keywords

1) Leadership dimension
   - *Sustainable leadership* (core term of interest).
   - *Green leadership* and *eco-leadership*: often used interchangeably with sustainability-focused leadership.
   - *Environmental leadership AND sustainability*: environmental leadership is frequently linked to sustainability practices.

2) Performance dimension
   - *Sustainable business performance* (core concept).
   - *Corporate sustainability performance* and *sustainable organizational performance*: common variants in literature.
   - *ESG performance*: captures the widely adopted environmental, social, and governance measurement framework.

Economic social environmental performance: used in measurement and reporting contexts.