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LEGAL GOVERNANCE OF SUSTAINABLE GOVERNMENT FOR ACHIEVING THE SUSTAINABLE DEVELOPMENT GOALS: A BIBLIOMETRIC ANALYSIS

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ABSTRACT

This study maps the intellectual structure, thematic evolution, and knowledge production of sustainable government research related to the Sustainable Development Goals (SDGs), with particular attention to legal governance. Using a bibliometric and science-mapping approach, this study analyzes 347 English-language journal articles indexed in Scopus and published between 2016 and 2025. The analysis was conducted using Biblioshiny/Bibliometrix and VOSviewer to examine publication trends, citation impact, leading contributors, institutional and country networks, keyword co-occurrence, and thematic evolution. The findings show rapid growth in sustainable government research after 2020, indicating increasing academic attention to SDG-oriented governance. Earlier publications received higher citation impact, reflecting their foundational role in the development of the field. Knowledge production is concentrated in China, Indonesia, the Netherlands, the United States, and Australia, with substantial contributions from universities and sustainability research institutions in Asia and Europe. The thematic analysis identifies governance integration, SDGs, and climate change as prominent themes, while sustainability functions as a foundational theme connecting governance, accountability, policy implementation, and institutional capacity. Legal and regulatory dimensions emerge through themes related to governance, accountability, institutional frameworks, and policy implementation, indicating the importance of legal governance in translating SDG commitments into sustainable government practices. The study contributes to legal and governance scholarship by consolidating fragmented literature and identifying the evolving role of legal governance in SDG-oriented sustainable government research.

1. Introduction

Sustainable government has become an important agenda in public administration as governments are increasingly expected to operationalize the Sustainable Development Goals (SDGs) through coherent governance, policy coherence, and accountable implementation across levels of government.[1] However, research connecting sustainable government with SDG-oriented public sector sustainability remains dispersed across governance, public policy, environmental economics, and corporate sustainability literature.[2] This fragmentation makes it difficult to identify the development of the field, its leading contributors, and its dominant and evolving themes.

Sustainable government commonly refers to the capacity of public institutions to integrate sustainability principles into governance, policy coherence, administrative accountability, and multi-level implementation.[3] The SDGs provide a policy architecture for aligning public planning, budgeting, monitoring, and reporting with sustainability targets.[4] Nevertheless, SDG integration remains uneven across sectors and administrative levels, requiring greater understanding of how sustainability, governance, accountability, and implementation are connected.[5] Bibliometric analysis provides an appropriate approach because it enables systematic examination of publication growth, citation impact, influential contributors, institutional and geographical patterns, conceptual structures, and thematic evolution through publication metadata and science-mapping techniques.[6]

From a legal-governance perspective, SDG commitments must ultimately be translated into domestic rules, administrative procedures, and institutional

[1] OECD., *Better Policies for Sustainable Development 2016*, Paris, OECD Publishing, 2016, page.22.

[2] Muhammad Salman Shabbir., Corporate sustainability reimagined: A bibliometric–systematic literature review of governance, technology, and stakeholder-driven strategies for SDG impact, *Business Strategy and the Environment,* Vol.34, no.7, 2025, page.9206.

[3] David V. Ogunkan, Achieving sustainable environmental governance in Nigeria: A review for policy consideration, *Urban Governance,* Vol.2, no.1, 2022, page.216. See too, Anna Sanina, Evgeny Styrin, Eran Vigoda-Gadot, Maria Yudina, and Anna Semenova., Digital government transformation and sustainable development goals: To what extent are they interconnected? Bibliometric analysis results, *Sustainability,* Vol.16, no.22, 2024, page.9761.

[4] Diamantina Amélia Parckings Tauro Cumbana, and José Biléu Ventura., Sustainability reporting and sustainable development goals: bibliometric analysis, *Cogent Business & Management,* Vol.12, no.1, 2025, page.24547.

[5] Sarah George Lauwo, John De-Clerk Azure, and Trevor Hopper., Accountability and governance in implementing the Sustainable Development Goals in a developing country context: evidence from Tanzania, *Accounting, Auditing & Accountability Journal,* Vol.35, no.6, 2022, page.1435. See too, Ana Filipa Silva, M. Isabel Sánchez-Hernández, and Luísa Cagica Carvalho., Local public administration in the process of implementing sustainable development goals, *Sustainability,* Vol.15, no.21, 2023, page.15263.

[6] Naveen Donthu, Satish Kumar, Debmalya Mukherjee, Nitesh Pandey, and Weng Marc Lim., How to conduct a bibliometric analysis: An overview and guidelines, *Journal of business research,* Vol.133, no.2, 2021, page.288. See too, Maryadi, Hamidah Nayati Utami, Arik Prasetya, and Benny Hutahayan., Mapping the intellectual landscape of employee performance research: A bibliometric and mapping analysis (2020–2025), *F1000Research,* Vol.14, 2025, page.633.

mandates that structure government action.[7] Fragmented legal and regulatory arrangements across sectors and administrative levels may weaken policy coherence and complicate accountability in SDG implementation.[8] Similar challenges arise in international and inter-organizational governance, where institutional fragmentation and coordination gaps may limit the capacity of SDG frameworks to function as an integrating mechanism.[9] SDG implementation therefore involves not only policy integration but also coordination among public institutions, administrative levels, and stakeholders.[10] Collaborative governance is consequently relevant to understanding how fragmented institutions develop coordination, shared accountability, and collective capacity to translate SDG commitments into sustainable government practices.[11] Because the SDGs are interconnected, progress toward one goal may create synergies or trade-offs with others, making policy integration a central governance challenge.[12]

The relevance of these issues is also reflected in previous bibliometric research. Almeida and Guaraldo,[13] through a scientometric and systematic literature review of urban green equity research, mapped research fields, collaboration patterns, and topic development, but treated the SDGs mainly as a contextual driver rather than as the central analytical framework. Siao et al.[14] identified major trends, contributors, and keyword hotspots in ESG management using bibliometrix, VOSviewer, and CiteSpace, yet the SDGs were not the organizing lens and thematic evolution was not systematically examined from a public-sector perspective.

[7] Jiakun Huo, and Yashu Zhao., Bridging the legal divide: evaluating stakeholder awareness, regulatory effectiveness, and governance gaps in sustainable development across urban and rural China, *Humanities and Social Sciences Communications,* Vol.12, no.1, 2025, page.1939.

[8] Jana Birner, Basil Bornemann, and Frank Biermann., Policy integration through the sustainable development goals? The case of the German Federal Government, *Sustainable Development,* Vol.32, no.4, 2024, page.3879.

[9] Maya Bogers, Frank Biermann, Agni Kalfagianni, and Rakhyun E. Kim., The SDGs as integrating force in global governance? Challenges and opportunities, *International Environmental Agreements: Politics, Law and Economics,* Vol.23, no.2, 2023, page.159.

[10] Venus Krantz, and Sara Gustafsson., Regional collaboration for the sustainable development goals: Experiences from developing a multi-actor platform in Sweden, *Sustainable Development,* Vol.31, no.6, 2023, page.4009. See too, Mattia Casula., How different multilevel and multi-actor arrangements impact policy implementation: Evidence from EU regional policy, *Territory, Politics, Governance,* Vol.12, no.7, 2024, page.1049.

[11] Cameron Allen, Shirin Malekpour, and Michael Mintrom., Cross-scale, cross-level and multi-actor governance of transformations toward the sustainable development goals: A review of common challenges and solutions, *Sustainable Development,* Vol.31, no.3, 2023, page.1254. See too, Lisa-Maria Glass, Jens Newig, and Simon Ruf., MSPs for the SDGs–Assessing the collaborative governance architecture of multi-stakeholder partnerships for implementing the Sustainable Development Goals, *Earth System Governance,* Vol.17, 2023, page.10182.

[12] Oscar Widerberg, Cornelia Fast, Montserrat Koloffon Rosas, and Philipp Pattberg., Governing synergies and trade-offs between the SDGs: The potential and limitations for multistakeholderism in the context of prioritization, *International Environmental Agreements: Politics, Law and Economics,* Vol.3, no.3, 2026, page.11.

[13] Wanda Maira Muniz Almeida, and Eliane Guaraldo., Urban Green Equity: OVERVIEW of Scientific Research from 1992 to 2021, *Journal of Interdisciplinary Lifestyle Studies,* Vol.8, no.2, 2021, page.68.

[14] Hung-Jung Siao, Sue-Huai Gau, Jen-Hwa Kuo, Ming-Guo Li, and Chang-Jung Sun., Bibliometric analysis of environmental, social, and governance management research from 2002 to 2021, *Sustainability,* Vol.14, no.23, 2022, page.16121.

Sanina et al.[15] found that explicit connections between digital government transformation and the SDGs remained limited, particularly in public administration research, while their analysis was confined to digital government rather than the broader sustainable government domain.

Other studies have similarly examined specific sustainability-related sectors. Jing and Alias[16] identified sixteen factors supporting BIM implementation under ESG and SDG frameworks, but their analysis was limited to construction and did not address government sustainability or longitudinal thematic development. Shabbir[17] mapped corporate sustainability research and identified an evolution from emergence to consolidation and institutionalization, with governance, technology, and stakeholder themes becoming increasingly important; however, the study remained focused on corporate rather than public-sector sustainability. Galkin et al.[18] examined digital twins in logistics through citation, keyword co-occurrence, and thematic clustering, but treated SDGs primarily as an application-level alignment rather than as the central analytical framework for government sustainability. Similarly, Nedungadi et al.[19] used topic modelling, keyword co-occurrence, and SDG mapping to examine interdisciplinary sustainable development research in Africa, identifying governance and policy clusters but maintaining a regional and interdisciplinary focus rather than a sustainable government perspective.

Research on sustainability reporting also demonstrates the importance of governance and accountability. Cumbana and Ventura[20] identified major themes involving sustainability reporting, corporate social responsibility, governance, GRI, and accountability, but their analysis was largely associated with firm-level reporting and did not provide thematic evolution focused on public-sector sustainability. Secinaro et al.[21] similarly identified transparency, governance, regulation, blockchain, and artificial intelligence as important themes in research

[15] Anna Sanina, Evgeny Styrin, Eran Vigoda-Gadot, Maria Yudina, and Anna Semenova., Digital government transformation and sustainable development goals: To what extent are they interconnected? Bibliometric analysis results, *Sustainability,* Vol.16, no.22, 2024, page.9763.

[16] Wu Jing, and Aidi Hizami Alias., Key factors for building information modelling implementation in the context of environmental, social, and governance and sustainable development goals integration: a systematic literature review, *Sustainability,* Vol.16, no.21, 2024, page.9504.

[17] Muhammad Salman Shabbir., Corporate sustainability reimagined: A bibliometric–systematic literature review of governance, technology, and stakeholder-driven strategies for SDG impact, *Business Strategy and the Environment,* Vol.34, no.7, 2025, page.9207.

[18] Andrii Galkin, Ganna Samchuk, Denys Kopytkov, and Russell G. Thompson., Digital twins in logistics: a comprehensive bibliometric analysis for advancing smart cities and sustainable development, *Discover Sustainability,* Vol.6, no.1, 2025, page.853.

[19] Prema Nedungadi, Omwoyo Bosire Onyancha, Walter Leal Filho, and Raghu Raman., Exploring systems analysis and interdisciplinary research approaches for sustainable development in Africa, *Discover Sustainability,* Vol.6, no.1, 2025, page.885.

[20] Diamantina Amélia Parckings Tauro Cumbana, and José Biléu Ventura., Sustainability reporting and sustainable development goals: bibliometric analysis, *Cogent Business & Management,* Vol.12, no.1, 2025, page.24548.

[21] Silvana Secinaro, Federico Lanzalonga, Michele Oppioli, and Elbano De Nuccio., The effects of disruptive technologies on accountability in fintech industry: Using bibliometric analysis to develop a research agenda, *Research in International Business and Finance,* Vol.76, 2025, page.102816.

on disruptive technologies and fintech accountability, although the SDGs were not operationalized as the central analytical framework. Ricciardelli et al.[22] mapped research linking social innovation, participatory governance, and urban regeneration, but treated the SDGs primarily as a background motivation rather than as an analytical structure for sustainable government.

Taken together, these studies demonstrate that sustainability research is expanding and increasingly interdisciplinary, with governance, accountability, transparency, stakeholder engagement, regulation, institutional capacity, and technology emerging across different research streams.[23] However, existing bibliometric studies remain fragmented by sector, such as corporate sustainability, sustainability reporting, digital government, construction, logistics, fintech, urban regeneration, or regional sustainability. None of these studies provides a comprehensive bibliometric mapping of sustainable government as an SDG-oriented public-sector knowledge domain covering publication development, leading contributors, and thematic evolution over 2016–2025. Moreover, although governance and regulatory dimensions appear across several adjacent research streams, their position within the broader development of sustainable government research has not been systematically consolidated. This gap is particularly relevant from a legal-governance perspective because the implementation of SDG commitments depends on rules, institutional mandates, regulatory arrangements, and accountability mechanisms that translate sustainability objectives into government practice.[24]

This study responds to the fragmentation of SDG-oriented sustainable government research by offering an SDG-centered bibliometric mapping of the field. Therefore, this study aims to map the intellectual structure, thematic evolution, and knowledge production landscape of SDG-oriented sustainable government research using bibliometric performance indicators and science-mapping techniques. Specifically, this study addresses the following research objectives: (1) to identify publication trends and citation patterns in sustainable government and SDG-related research from 2016 to 2025; (2) to examine the leading authors, institutions, countries, and collaboration networks contributing to the field; (3) to

[22] Alessandra Ricciardelli, Paola Amoruso, and Felicia Di Liddo., Urban regeneration: from design to social innovation—does organizational aesthetics matter? *Urban Science* Vol.9, no.3, 2025, page.79.

[23] Diamantina Amélia Parckings Tauro Cumbana, and José Biléu Ventura., Sustainability reporting and sustainable development goals: bibliometric analysis, *Cogent Business & Management,* Vol.12, no.1, 2025, page.24549. See too, Hung-Jung Siao, Sue-Huai Gau, Jen-Hwa Kuo, Ming-Guo Li, and Chang-Jung Sun., Bibliometric analysis of environmental, social, and governance management research from 2002 to 2021, *Sustainability,* Vol.14, no.23, 2022, page.16123; Silvana Secinaro, Federico Lanzalonga, Michele Oppioli, and Elbano De Nuccio., The effects of disruptive technologies on accountability in fintech industry: Using bibliometric analysis to develop a research agenda, *Research in International Business and Finance,* Vol.76, 2025, page.102819.

[24] Jiakun Huo, and Yashu Zhao., Bridging the legal divide: evaluating stakeholder awareness, regulatory effectiveness, and governance gaps in sustainable development across urban and rural China, *Humanities and Social Sciences Communications,* Vol.12, no.1, 2025, page.1940. See too, Jana Birner, Basil Bornemann, and Frank Biermann., Policy integration through the sustainable development goals? The case of the German Federal Government, *Sustainable Development,* Vol.32, no.4, 2024, page.3880.

analyze the conceptual structure and dominant themes through keyword co-occurrence and thematic mapping; and (4) to explain how legal-governance dimensions are reflected in the development of sustainable government research and SDG implementation. The novelty of this study lies in positioning the SDGs as the organizing analytical lens for sustainable government research by integrating governance and accountability themes across adjacent applied domains into a single SDG-centered bibliometric synthesis.

2. Research Methods

This study employs a bibliometric science-mapping approach to systematically examine the development, intellectual structure, and thematic evolution of sustainable government research related to the Sustainable Development Goals (SDGs). The research follows established bibliometric review and science-mapping procedures to ensure transparent dataset construction, reproducibility, and systematic interpretation of bibliographic networks.[25]

2.1. Search Strategy and Data Collection

Data were retrieved from the Scopus database, selected for its broad multidisciplinary coverage and structured metadata suitable for bibliometric analysis.[26] The search used a Title–Abstract–Keyword query combining terms related to sustainability, government/public sector, and the SDGs/Agenda 2030. The search was restricted to English-language journal articles, published in the final stage between 2016 and 2025, within relevant subject areas, including social sciences, business and management, and economics and accounting. The search, screening logic, database, filters, and extraction date (30 January 2026) are reported in Figure 1. The final dataset comprised 347 records.

2.2. Data Screening and Harmonization

The retrieved records were screened according to the study scope, namely sustainable government and SDGs in the public sector. Bibliographic data were checked for duplicates and harmonized by normalizing keywords, author names, and institutional affiliations to reduce noise and improve network interpretation.[27] Two reviewers independently checked the dataset and resolved discrepancies through cross-checking. No records were removed during cleaning because the Scopus export contained no duplicates and all records satisfied the predefined eligibility filters.

2.3. Bibliometric Analysis

The analysis examined annual publication and citation trends, leading authors,

[25] Naveen Donthu, Satish Kumar, Debmalya Mukherjee, Nitesh Pandey, and Weng Marc Lim., How to conduct a bibliometric analysis: An overview and guidelines, *Journal of business research,* Vol.133, no.2, 2021, page.289. See too, Massimo Aria, and Corrado Cuccurullo., Bibliometrix: An R-tool for comprehensive science mapping analysis, *Journal of informetrics,* Vol.11, no.4, 2017, 959.

[26] Naveen Donthu, Satish Kumar, Debmalya Mukherjee, Nitesh Pandey, and Weng Marc Lim., How to conduct a bibliometric analysis: An overview and guidelines, *Journal of business research,* Vol.133, no.2, 2021, page.290.

[27] Ivan Zupic, and Tomaž Čater., Bibliometric methods in management and organization, *Organizational research methods,* Vol.18, no.3, 2015, page.431.

institutions, and countries, together with collaboration and conceptual structures. Bibliometrix/Biblioshiny in R was used for descriptive bibliometric indicators, thematic mapping, and thematic evolution, while VOSviewer was used to construct and visualize keyword co-occurrence and network structures.[28] Thematic mapping was interpreted using centrality and density to distinguish motor, basic, niche, and emerging or declining themes.[29] These analyses were used to identify the dominant and evolving themes within sustainable government and SDG research.

The thematic findings are further interpreted through a legal-governance lens. Themes relating to regulation, institutional frameworks, accountability, policy implementation, and governance are examined to identify how legal and regulatory dimensions are reflected in the development of SDG-oriented sustainable government research. This interpretive step does not treat the bibliometric corpus as a body of legal doctrine; rather, it identifies the position and evolution of legal-governance dimensions within the broader public-sector sustainability literature.

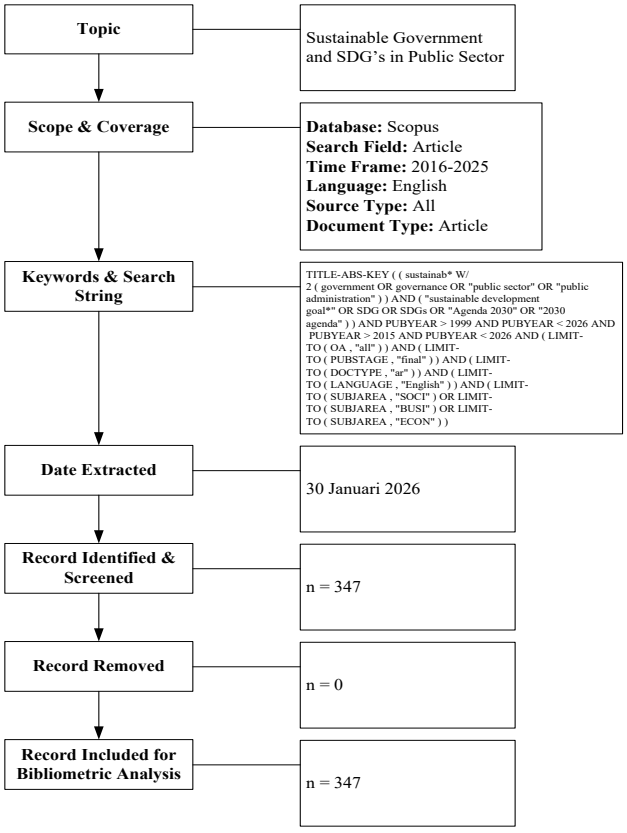

Figure 1. Flow Diagram of Data Collection and Screening

[28] Massimo Aria, and Corrado Cuccurullo., Bibliometrix: An R-tool for comprehensive science mapping analysis, *Journal of informetrics,* Vol.11, no.4, 2017, 960. See too, Nees Jan Van Eck, and Ludo Waltman., Software survey: VOSviewer, a computer program for bibliometric mapping, *scientometrics,* Vol.84, no.2, 2010, page.525.

[29] Manuel J. Cobo, Antonio Gabriel López-Herrera, Enrique Herrera-Viedma, and Francisco Herrera., Science mapping software tools: Review, analysis, and cooperative study among tools, *Journal of the American Society for information Science and Technology,* Vol.62, no.7, 2011, page.1388.

The complete data retrieval and screening workflow is presented in Figure 1, including the database, search scope, eligibility filters, dataset size, and extraction date. The explicit reporting of these procedures supports auditability and reproducibility of the bibliometric dataset.[30]

3. Results and Discussion

3.1. Development of Sustainable Government Research Related to the Sustainable Development Goals

Annual publication output demonstrates a clear expansion of research on sustainable government and the Sustainable Development Goals (SDGs) during 2016–2025. The dataset contains only 3 articles in 2016, increasing to 7 in 2017, 2 in 2018, 13 in 2019, 20 in 2020, 28 in 2021, 37 in 2022, 43 in 2023, 59 in 2024, and 135 in 2025. The most substantial increase occurred during 2023–2025, when annual production more than tripled from 43 to 135 publications. This pattern indicates that sustainable government has developed from a relatively limited research area into a rapidly expanding field of scholarly inquiry.

The acceleration after 2019 is consistent with the increasing emphasis on translating SDG commitments into public-sector institutions, local administration, policy implementation, and governance arrangements. Research on local public administration, for example, emphasizes the role of government institutions in implementing the SDGs, while studies of green government and digital transformation demonstrate the growing connection between sustainability objectives and public-sector performance.[31] The increasing research output therefore reflects not only broader interest in sustainability but also a shift toward examining how governments operationalize sustainability through institutional and administrative mechanisms.

This expansion also has a legal-governance dimension. The implementation of sustainability objectives increasingly requires institutional rules, regulatory arrangements, and clearly defined governmental responsibilities. Recent legal scholarship has highlighted the institutionalization of collaborative governance within legal systems and the importance of legal frameworks in supporting cross-

[30] Naveen Donthu, Satish Kumar, Debmalya Mukherjee, Nitesh Pandey, and Weng Marc Lim., How to conduct a bibliometric analysis: An overview and guidelines, *Journal of business research,* Vol.133, no.2, 2021, page.291. See too, Ivan Zupic, and Tomaž Čater., Bibliometric methods in management and organization, *Organizational research methods,* Vol.18, no.3, 2015, page.432.

[31] Gatot Hery Djatmiko, Obsatar Sinaga, and Suharno Pawirosumarto., Digital transformation and social inclusion in public services: A qualitative analysis of e-government adoption for marginalized communities in sustainable governance, *Sustainability,* Vol.17, no.7, 2025, page.2908. See too, Suci Megawati, Muhammad Alfarizi, and Muhammad Rezky Syamsul., Key Advantages of the Green Government Initiative in Achieving Local Public Service Performance and Sustainable Development, *International Journal of Sustainable Development & Planning,* Vol.19, no.11, 2024, page.4361; Ana Filipa Silva, M. Isabel Sánchez-Hernández, and Luísa Cagica Carvalho., Local public administration in the process of implementing sustainable development goals, *Sustainability,* Vol.15, no.21, 2023, page.15266.

sector governance.[32] Similarly, socio-legal research on digital transformation demonstrates how collaborative governance can operate through policy implementation and institutional arrangements.[33] These developments are consistent with the broader expansion of sustainable government research, in which governance is increasingly examined not merely as an administrative process but as an institutional framework for coordinating public action.

The sharp increase to 135 publications in 2025 should nevertheless be interpreted cautiously. A high publication count indicates increased scholarly activity, but it does not by itself establish greater intellectual maturity or research quality. Rather, it indicates substantial expansion of the knowledge base and suggests that sustainable government and SDG implementation have become increasingly established areas of interdisciplinary research.

Citation patterns show a different temporal trajectory from publication production. As presented in Table 1, the highest mean total citations per article were recorded in 2016 (135.00), followed by 2018 (81.50), while the values were substantially lower in subsequent years. Mean total citations per article declined to 31.54 in 2021, 18.49 in 2022, 20.16 in 2023, 7.97 in 2024, and 1.87 in 2025. Mean citations per year per article similarly reached their highest levels in 2016 (12.27) and 2018 (9.06), compared with 0.94 in 2025.

Table 1. Average Citation by Year

Year	Mean Total Citations per Article	N	Mean Total Citations per Year per Article	Citable Years
2016	135.00	3	12.27	11
2017	29.14	7	2.91	10
2018	81.50	2	9.06	9
2019	28.00	13	3.50	8
2020	29.10	20	4.16	7
2021	31.54	28	5.26	6
2022	18.49	37	3.70	5
2023	20.16	43	5.04	4
2024	7.97	59	2.66	3
2025	1.87	135	0.94	2

The apparent inverse relationship between publication volume and average citation impact should not be interpreted as declining scholarly relevance. Earlier publications have had substantially longer periods in which citations can accumulate. The particularly high citation impact of publications from 2016–2018

[32] Gidion Arif Setyawan, and Andy Fefta Wijaya., Urgency of institutionalizing collaborative governance in the legal system for the protection of children in conflict with the law, *Jurnal Hukum Unissula,* Vol.41, no.2, 2025, page.347.

[33] Sigit Wijatmoko, B. Akbar, Ika Sartika, and Rosmery Elsye., Collaborative governance in digital transformation policy implementation for MSMEs in Jakarta: A socio-legal perspective, *Jurnal Hukum Unissula,* Vol.41, no.2, 2025, page.367.

therefore indicates the foundational position of early research in establishing the conceptual relationship between sustainable development, governance, policy integration, and public-sector implementation. The adoption of the SDGs in 2015 created an important point of departure for scholarship examining how governments could integrate multiple sustainability objectives into existing governance and policy systems.[34]

The subsequent decline in average citations occurs alongside a substantial expansion in publication volume. This suggests that the field is moving from a relatively concentrated foundational literature toward a broader and more diversified research base. As the number of studies increases, research attention becomes distributed across more specific issues, including local governance, digital transformation, accountability, collaborative governance, regulatory capacity, and institutional implementation. The literature on accountability and governance in SDG implementation demonstrates, for example, that translating global commitments into government practice requires institutional accountability mechanisms and governance arrangements.[35] Similarly, cross-scale and multi-actor governance research emphasizes the institutional complexity involved in implementing transformations toward the SDGs.[36]

The growing institutional and regulatory orientation of the field is also reflected in recent legal-governance scholarship. Research on regional governance has examined institutional arrangements for implementing public policy across multiple levels, while recent legal research has emphasized the need for institutionalized collaborative governance and participatory public policy in addressing complex public problems.[37] Research in *Lex Publica* likewise demonstrates the emergence of regulatory and institutional concerns within public-sector governance, particularly through studies of rural governance and artificial intelligence governance and risk management.[38] These studies do not directly determine the

[34] Måns Nilsson, Dave Griggs, and Martin Visbeck., Policy: map the interactions between sustainable development goals, *Nature,* Vol.534, no.7607, 2016, page.322. See too, OECD., *Better Policies for Sustainable Development 2016*, Paris, OECD Publishing, 2016, page.23.

[35] Sarah George Lauwo, John De-Clerk Azure, and Trevor Hopper., Accountability and governance in implementing the Sustainable Development Goals in a developing country context: evidence from Tanzania, *Accounting, Auditing & Accountability Journal,* Vol.35, no.6, 2022, page.1436.

[36] Cameron Allen, Shirin Malekpour, and Michael Mintrom., Cross-scale, cross-level and multi-actor governance of transformations toward the sustainable development goals: A review of common challenges and solutions, *Sustainable Development,* Vol.31, no.3, 2023, page.1256.

[37] Yulian Y. Akbar, Hadi Warsono, Teguh Yuwono, and Bangkit Aditya Wiryawan., Legal Governance for Extreme Poverty Reduction: Advancing Justice through Participatory Public Policy, *Jurnal Hukum Unissula,* Vol.42, no.2, 2026, page.453. See too, Mattia Casula., How different multilevel and multi-actor arrangements impact policy implementation: Evidence from EU regional policy, *Territory, Politics, Governance,* Vol.12, no.7, 2024, page.1050; Gidion Arif Setyawan, and Andy Fefta Wijaya., Urgency of institutionalizing collaborative governance in the legal system for the protection of children in conflict with the law, *Jurnal Hukum Unissula,* Vol.41, no.2, 2025, page.348.

[38] Gandung Troy Sulistyantoro, Akhsanul Khaq, Md Zubair Kasem Khan, Al Amin, and Abdullah-Al-Monzur Hussain., Shaping artificial intelligence governance and risk management in the public sector: Regulatory insights, *Lex Publica,* Vol.11, no.1, 2024, page.163. See too, Yandri Susanto, Suwarno Suwarno, and Benny Hutahayan., Emerging Trends in Rural Governance: A Bibliometric

bibliometric trend observed here, but they illustrate the broader movement from general sustainability objectives toward concrete institutional, regulatory, and governance mechanisms.

The same development can be observed in research addressing changes in public administration and governance structures. The relationship between SDGs and local self-government highlights the importance of governmental capacity and institutional strategies for achieving sustainability objectives, while studies of policy integration show that the SDGs can function as an integrating framework for government policy when institutional coordination is sufficiently developed.[39] At the international level, however, the integrating role of the SDGs remains constrained by institutional fragmentation and coordination challenges.[40] These findings help explain why recent sustainable government scholarship increasingly addresses implementation, coordination, accountability, and institutional capacity rather than sustainability as a purely normative objective.

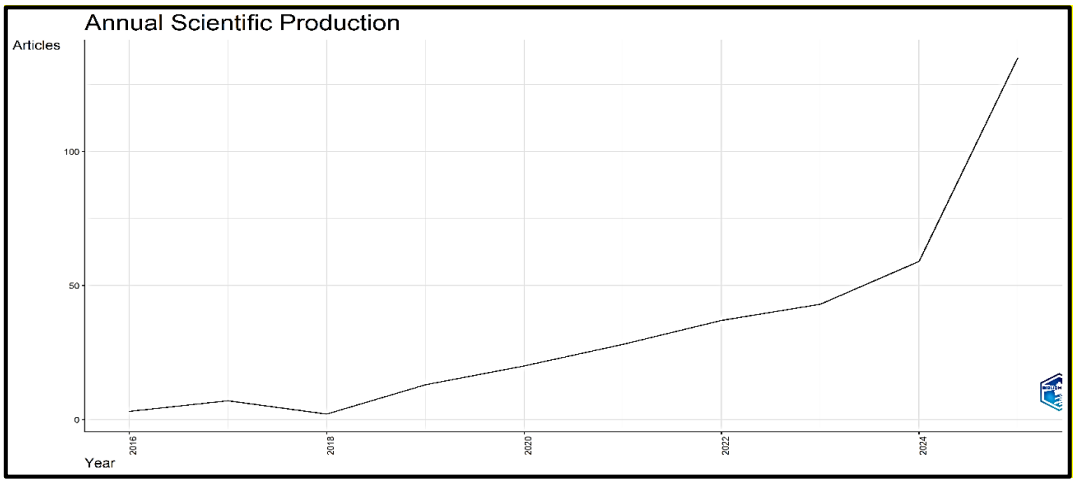

Figure 2. Annual Production by Year

Overall, the temporal pattern reveals two complementary developments. First, scientific production has expanded rapidly, particularly after 2020 and most sharply in 2025, indicating increasing scholarly attention to sustainable government and SDG implementation. Second, citation influence remains concentrated among

Analysis of Policies and Strategies for Developing Underprivileged Villages, *Lex Publica,* Vol.11, no.2, 2024, page.249.

[39] Ying Li, and Yating Huang., Sustainable Development Goals (SDGs) and Local Self-Government: Approaches and Strategies for Sustainable Education, *Lex Localis-Journal Of Local Self-Government,* Vol.22, no.2, 2024, page.289. See too, Jana Birner, Basil Bornemann, and Frank Biermann., Policy integration through the sustainable development goals? The case of the German Federal Government, *Sustainable Development,* Vol.32, no.4, 2024, page.3879.

[40] Maya Bogers, Frank Biermann, Agni Kalfagianni, and Rakhyun E. Kim., The SDGs as integrating force in global governance? Challenges and opportunities, *International Environmental Agreements: Politics, Law and Economics,* Vol.23, no.2, 2023, page.158. See too, Maya Bogers, Frank Biermann, Agni Kalfagianni, Rakhyun E. Kim, Jelle Treep, and Martine G. De Vos., The impact of the Sustainable Development Goals on a network of 276 international organizations, *Global Environmental Change,* Vol.76, 2022, page.10256.

earlier publications, reflecting the foundational role of early studies and the shorter citation window available to recent publications. The field can therefore be characterized as moving from an initial conceptual and foundational phase toward a broader implementation-oriented phase in which governance, institutional coordination, accountability, digital transformation, and regulatory arrangements receive increasing attention. This development is particularly significant for legal governance because achieving the SDGs requires the translation of broad sustainability commitments into institutional mandates, administrative procedures, regulatory mechanisms, and accountable public-sector practices.[41]

3.2. Leading Contributors to Sustainable Government Research

The analysis of leading contributors identifies the scholars, institutions, and countries that have made the largest contributions to SDG-oriented sustainable government research. These indicators provide an empirical basis for identifying the intellectual and institutional centres that have shaped knowledge production in the field, as well as the geographic distribution of research activity.

Table 2. Most Relevant Authors

No	Author	Documents
1	Biermann, F. H. B	7
2	Li Y.	4
3	Bilawal Khaskheli M.	3
4	Bornemann B.	3
5	Kalfagianni A. K.	3
6	Kim R. E.	3
7	Lai Z.	3
8	Liu J.	3
9	Ma Y.	3

Table 2 shows that Biermann, F. H. B. is the most productive author with seven publications, followed by Li, Y. with four, while seven other authors each contributed three publications. The distribution indicates distributed intellectual leadership, with research activity spread across governance integration, institutional coordination, sustainability policy, and governance innovation rather than dominated by a single author.

The leading authors' contributions emphasize the governance and institutional dimensions of SDG implementation. Biermann and collaborators highlight policy integration, institutional coordination, and persistent governance fragmentation, including evidence that the SDGs have improved sectoral integration without fundamentally transforming system-wide governance.[42] Li and colleagues

[41] Muhammad Bilawal Khaskheli, Yongchen Zhao, and Zhuiwen Lai., Sustainable maritime governance of digital technologies for marine economic development and for managing challenges in shipping risk: Legal policy and marine environmental management, *Sustainability,* Vol.17, no.21, 2025, page.9526.

[42] Jana Birner, Basil Bornemann, and Frank Biermann., Policy integration through the sustainable development goals? The case of the German Federal Government, *Sustainable*

contribute research on governance efficiency, institutional restructuring, ESG, industrial transformation, and resource governance capacity, while Khaskheli et al.[43] emphasize regulatory frameworks and digital innovation governance. Collectively, these contributions reinforce the growing intersection of institutional capacity, regulatory governance, and technological transformation in sustainable government research.

Table 3. Most Productive Institution

No	Institution	Articles
1	Copernicus Institute of Sustainable Development	10
2	Universitas Negeri Surabaya	5
3	Universitas Padjadjaran	5
4	University of Bern	5
5	University of Johannesburg	5
6	Fudan University	4
7	Kyungpook National University (KNU)	4
8	L.N. Gumilyov Eurasian National University	4
9	Politechnika Warszawska	4
10	Queensland University of Technology	4

At the institutional level, Table 3 shows that the Copernicus Institute of Sustainable Development leads with 10 publications, followed by Universitas Negeri Surabaya, Universitas Padjadjaran, the University of Bern, and the University of Johannesburg with five each. Five other institutions contributed four publications each. This distribution indicates geographically diverse research capacity across Europe, Asia, Africa, and Australia.

The Copernicus Institute's contribution highlights the importance of institutional structures, leadership capacity, and policy alignment in translating SDGs into coordinated governance practices, including the management of trade-offs and co-

Development, Vol.32, no.4, 2024, page.3881. See too, Ying Li, and Yating Huang., Sustainable Development Goals (SDGs) and Local Self-Government: Approaches and Strategies for Sustainable Education, *Lex Localis-Journal Of Local Self-Government,* Vol.22, no.2, 2024, page.279; Yucui Li, Piyapatr Busababodhin, and Supawadee Wichitchan., Dependency and Risk Spillover of China's Industrial Structure Under the Environmental, Social, and Governance Sustainable Development Framework, *Sustainability,* Vol.17, no.10, 2025, page.4660; Maya Bogers, Frank Biermann, Agni Kalfagianni, and Rakhyun E. Kim., The SDGs as integrating force in global governance? Challenges and opportunities, *International Environmental Agreements: Politics, Law and Economics,* Vol.23, no.2, 2023, page.158; Maya Bogers, Frank Biermann, Agni Kalfagianni, Rakhyun E. Kim, Jelle Treep, and Martine G. De Vos., The impact of the Sustainable Development Goals on a network of 276 international organizations, *Global Environmental Change,* Vol.76, 2022, page.102567; Carole-Anne Sénit, and Frank Biermann., In whose name are you speaking? The marginalization of the poor in global civil society, *Global Policy,* Vol.12, no.5, 2021, page.583.

[43] Muhammad Bilawal Khaskheli, Yongchen Zhao, and Zhuiwen Lai., Sustainable maritime governance of digital technologies for marine economic development and for managing challenges in shipping risk: Legal policy and marine environmental management, *Sustainability,* Vol.17, no.21, 2025, page.9526.

benefits in sustainable transitions.[44] Indonesian institutions also make substantial contributions: research from Universitas Negeri Surabaya links green government, organizational culture, and digital transformation with public-sector performance and SDG implementation, while Universitas Padjadjaran emphasizes digital governance, social inclusion, and institutional capacity in sustainable public services.[45] Overall, leading institutions increasingly connect governance reform, institutional capacity, digital transformation, and sustainability.

Table 4. Top 15 Countries Contributed to the Publication

No	Country/Territory	Documents
1	China	45
2	Indonesia	28
3	Netherlands	27
4	United States	27
5	Australia	26
6	India	22
7	Italy	22
8	Malaysia	22
9	United Kingdom	21
10	Spain	20
11	South Africa	17
12	Germany	16
13	Sweden	12
14	Saudi Arabia	11
15	Brazil	9

[44] Gabriela Ileana Iacobuţă, Niklas Höhne, Heleen Laura van Soest, and Rik Leemans., Transitioning to low-carbon economies under the 2030 agenda: Minimizing trade-offs and enhancing co-benefits of climate-change action for the sdgs. *Sustainability,* Vol.13, no.19, 2021, page.10774. See too, Jana Birner, Basil Bornemann, and Frank Biermann., Policy integration through the sustainable development goals? The case of the German Federal Government, *Sustainable Development,* Vol.32, no.4, 2024, page.3882.

[45] Gatot Hery Djatmiko, Obsatar Sinaga, and Suharno Pawirosumarto., Digital transformation and social inclusion in public services: A qualitative analysis of e-government adoption for marginalized communities in sustainable governance, *Sustainability,* Vol.17, no.7, 2025, page.2909. See too, Mexsasai Indra, Geofani Milthree Saragih, Dessy Artina, Mohd. Yusuf DM, Ahmad Gelora Mahardika., The Idea of the Bottom-Up Paradigm to Top-Down in Regional Arrangement in Indonesia, *Jurnal Hukum Unissula,* Vol.40, no.2, 2024, page.343; Suci Megawati, Muhammad Alfarizi, and Muhammad Rezky Syamsul., Key Advantages of the Green Government Initiative in Achieving Local Public Service Performance and Sustainable Development, *International Journal of Sustainable Development & Planning,* Vol.19, no.11, 2024, pagea.4361; I. Prabawati, W. S. Utami, H. Harmanto, M. Meirinawati, S. Megawati, A. Indrasetianingsih, and S. Sudirman., Fostering achievement of sustainable development goals through green culture and digital transformation: Empirical evidence from an Indonesian education human resources university, *Problems and Perspectives in Management,* Vol.23, no.3, 2025, page.112. See too, Arie Widyastuti, Sudarso Kaderi Wiryono, and Yunieta Anny Nainggolan., Political Connections and M&As Outcomes: Bibliometric Analysis and Research Agenda, *Scientific Annals of Economics and Business,* Vol.72, no.3, 2025, page.378.

At the country level, Table 4 shows broad but uneven geographic participation. China leads with 45 publications, followed by Indonesia (28), the Netherlands and United States (27 each), and Australia (26). India, Italy, and Malaysia contribute 22 publications each, followed by the United Kingdom (21), Spain (20), South Africa (17), Germany (16), Sweden (12), Saudi Arabia (11), and Brazil (9). This distribution confirms the global character of sustainable government research, involving both established and emerging research systems.

China's leading position reflects strong research attention to sustainability governance, institutional reform, resource management, and policy implementation. Meanwhile, European contributions reflect established capacity in sustainability governance and policy integration, while Indonesia, India, Malaysia, and South Africa demonstrate the growing relevance of emerging-economy contexts where institutional reform and public-sector capacity are closely linked to SDG implementation. Overall, the geographic pattern represents a multi-regional research network addressing shared governance challenges across diverse institutional contexts.

The combined author, institutional, and country-level findings provide a more comprehensive picture of intellectual and geographic leadership in SDG-oriented sustainable government research. At the author level, leadership is distributed among several productive scholars, with Biermann, F. H. B. occupying the strongest position in terms of publication output. At the institutional level, the Copernicus Institute of Sustainable Development emerges as the principal research hub, while several institutions in Asia, Europe, Africa, and Australia make substantial contributions. At the country level, China leads publication production, followed by Indonesia, the Netherlands, the United States, and Australia, indicating that knowledge production is geographically broad but concentrated in several major research systems.

Beyond publication counts, the substantive contribution of these leading actors reveals a recurring intellectual emphasis on policy integration, institutional coordination, governance fragmentation, regulatory capacity, digital transformation, and accountability. This pattern is particularly relevant to the legal and institutional dimension of sustainable government because the implementation of SDGs requires more than policy commitments; it requires administrative mandates and coordination rules capable of overcoming siloed decision-making across sectors and levels of government.[46] Persistent institutional fragmentation and coordination difficulties identified in SDG governance research further demonstrate that these challenges extend across national contexts rather than being confined to a particular administrative system.[47] The geographic

[46] Jana Birner, Basil Bornemann, and Frank Biermann., Policy integration through the sustainable development goals? The case of the German Federal Government, *Sustainable Development,* Vol.32, no.4, 2024, page.3883.

[47] Maya Bogers, Frank Biermann, Agni Kalfagianni, and Rakhyun E. Kim., The SDGs as integrating force in global governance? Challenges and opportunities, *International Environmental Agreements: Politics, Law and Economics,* Vol.23, no.2, 2023, page.160. See too, Maya Bogers, Frank Biermann, Agni Kalfagianni, Rakhyun E. Kim, Jelle Treep, and Martine G. De Vos., The impact of the Sustainable Development Goals on a network of 276 international organizations, *Global Environmental Change,* Vol.76, 2022, page.102568; Carole-Anne Sénit, and

diversity of the literature therefore reinforces the view that regulatory capacity, multi-level coordination, and accountability constitute recurring institutional challenges in SDG implementation.

Overall, the findings demonstrate that the leading contributors to SDG-oriented sustainable government research comprise a distributed network of authors, institutions, and countries, rather than a single dominant intellectual center. The most productive authors have contributed foundational perspectives on governance integration and institutional capacity, while leading institutions have expanded the field through research on policy coherence, sustainability transitions, digital governance, and institutional innovation. Meanwhile, the country-level distribution demonstrates the global character of the research agenda, with both developed and emerging economies actively contributing to its development. Importantly, the contribution structure also reveals that the intellectual evolution of sustainable government research is increasingly connected to legal and institutional questions concerning regulatory coherence, administrative coordination, institutional capacity, and accountability, which are central to translating SDG commitments into effective and implementable governance arrangements.

3.3. Thematic Structure of Sustainable Government Research

The thematic structure of SDG-oriented sustainable government research was examined through keyword co-occurrence analysis using VOSviewer. This analysis identifies conceptual relationships among frequently occurring keywords and reveals the major thematic domains structuring the literature. A thematic map based on centrality and density was also used to assess the structural importance and development of individual themes. Figure 3, Table 5, and Figure 4 collectively illustrate the conceptual organization and thematic evolution of the field.

Frank Biermann., In whose name are you speaking? The marginalization of the poor in global civil society, *Global Policy,* Vol.12, no.5, 2021, page.584.

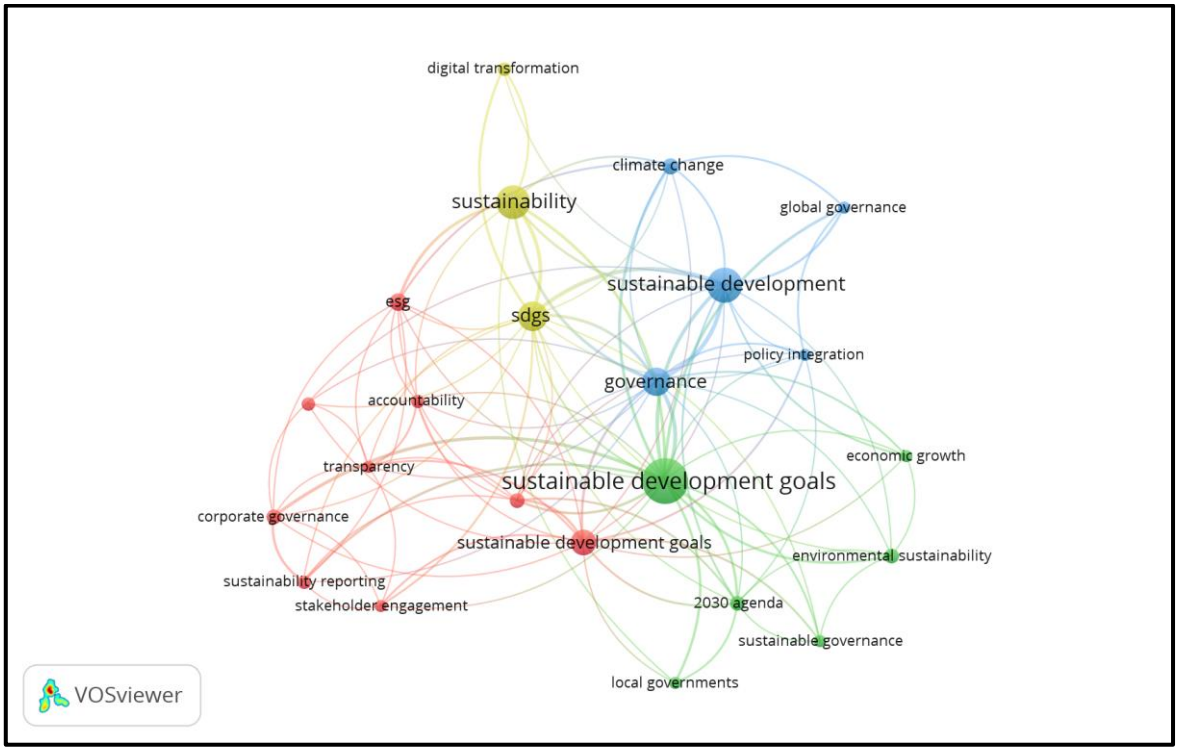

Figure 3. Co-occurrence Network of SDG-Oriented Sustainable Government Research

Table 5. Keyword Clusters in SDG-Oriented Sustainable Government Research

Cluster	Core Theme	Keywords
Cluster 1 (Red)	Accountability and Governance Transparency	accountability, circular economy, corporate governance, ESG, stakeholder engagement, sustainability governance, sustainability reporting, sustainable development, transparency
Cluster 2 (Green)	Public Sector Implementation and Sustainable Governance	2030 agenda, economic growth, environmental sustainability, local governments, sustainable development, sustainable governance
Cluster 3 (Blue)	Governance Integration and Policy Coordination	climate change, global governance, governance, policy integration, sustainable development
Cluster 4 (Yellow)	Digital Transformation and Sustainability Innovation	digital transformation, SDGs, sustainability

The co-occurrence network identifies four interconnected thematic clusters. Cluster 3, *Governance Integration and Policy Coordination*, forms the central

conceptual domain, encompassing governance, policy integration, global governance, and sustainable development. Cluster 1, Accountability and Governance Transparency, focuses on accountability, ESG, transparency, sustainability reporting, stakeholder engagement, and corporate governance. Cluster 2, Public Sector Implementation and Sustainable Governance, connects the 2030 Agenda, local governments, economic growth, environmental sustainability, and sustainable governance, while Cluster 4, Digital Transformation and Sustainability Innovation, links digital transformation with SDGs and sustainability.

This structure shows that sustainable government research increasingly approaches sustainability through governance arrangements, institutional coordination, accountability, implementation capacity, and technological infrastructure rather than as an exclusively environmental concern. Such a governance-centered orientation supports the need for institutional mechanisms that translate sustainability objectives into coordinated public-sector action.[48] The prominence of governance integration is consistent with evidence that the SDGs promote integrative policymaking across sectors and governance levels, although institutional fragmentation continues to constrain systemic policy integration.[49]

From a legal-governance perspective, these patterns indicate increasing attention to how legal and institutional arrangements allocate authority, define administrative responsibilities, coordinate policies, and establish accountability for SDG implementation. Accountability and transparency connect these arrangements with measurable sustainability outcomes, particularly through monitoring, reporting, and responsibility mechanisms.[50] Green government initiatives and institutional reforms further demonstrate the contribution of transparency, organizational culture, and accountability to public-sector performance and sustainable development.[51]

The implementation cluster highlights the translation of global SDG objectives into national and subnational governance, requiring policy coherence and institutional

[48] Diamantina Amélia Parckings Tauro Cumbana, and José Biléu Ventura., Sustainability reporting and sustainable development goals: bibliometric analysis, *Cogent Business & Management,* Vol.12, no.1, 2025, page.24550.

[49] Jana Birner, Basil Bornemann, and Frank Biermann., Policy integration through the sustainable development goals? The case of the German Federal Government, *Sustainable Development,* Vol.32, no.4, 2024, page.3884. See too, Maya Bogers, Frank Biermann, Agni Kalfagianni, and Rakhyun E. Kim., The SDGs as integrating force in global governance? Challenges and opportunities, *International Environmental Agreements: Politics, Law and Economics,* Vol.23, no.2, 2023, page.162; Carole-Anne Sénit, and Frank Biermann., In whose name are you speaking? The marginalization of the poor in global civil society, *Global Policy,* Vol.12, no.5, 2021, page.587.

[50] Gabriela Ileana Iacobuţă, Niklas Höhne, Heleen Laura van Soest, and Rik Leemans., Transitioning to low-carbon economies under the 2030 agenda: Minimizing trade-offs and enhancing co-benefits of climate-change action for the sdgs. *Sustainability,* Vol.13, no.19, 2021, page.10775.

[51] I. Prabawati, W. S. Utami, H. Harmanto, M. Meirinawati, S. Megawati, A. Indrasetianingsih, and S. Sudirman., Fostering achievement of sustainable development goals through green culture and digital transformation: Empirical evidence from an Indonesian education human resources university, *Problems and Perspectives in Management,* Vol.23, no.3, 2025, page.113.

adaptation across governance levels.[52] Meanwhile, digital transformation represents an emerging governance mechanism that can improve efficiency, public service delivery, and inclusion, while digital technologies, policy innovation, and institutional capacity increasingly support sustainability-policy implementation.[53] Collectively, the four clusters indicate that SDG-oriented sustainable government is increasingly structured around policy integration, accountability, multi-level implementation, and digital governance, with legal and institutional arrangements providing an underlying framework for translating SDG commitments into coordinated and implementable government action.

Furthermore, the thematic map (Figure 4) positions keywords according to centrality and density, allowing the identification of motor, basic, niche, and declining themes.

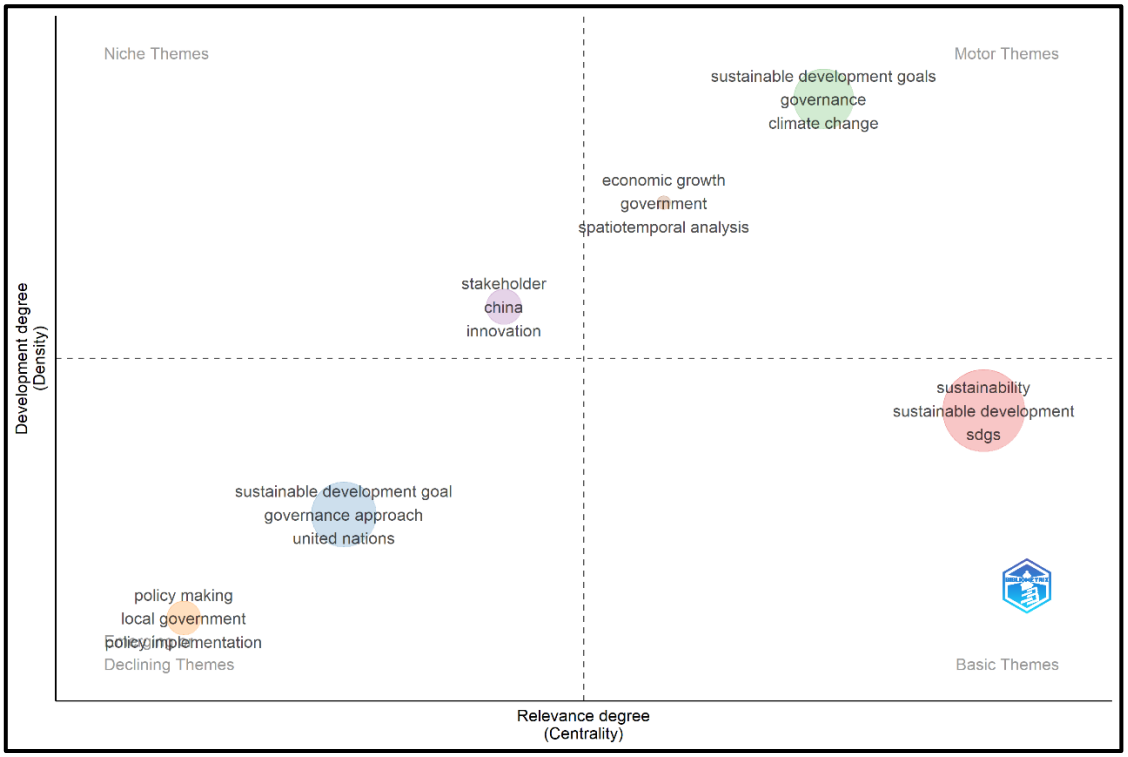

Figure 4. Thematic Map of SDG-Oriented Sustainable Government Research

[52] Nikki JJ Theeuwes, Marjanneke J. Vijge, and Koen Beumer., Is policy coherence leaving no one behind? Analyzing gender inequality in the governance of the sustainable development goals in India, *Environmental Policy and Governance,* Vol.35, no.3, 2025, page.473.

[53] Gatot Hery Djatmiko, Obsatar Sinaga, and Suharno Pawirosumarto., Digital transformation and social inclusion in public services: A qualitative analysis of e-government adoption for marginalized communities in sustainable governance, *Sustainability,* Vol.17, no.7, 2025, page.2910. See too, Muhammad Bilawal Khaskheli, Yongchen Zhao, and Zhuiwen Lai., Sustainable maritime governance of digital technologies for marine economic development and for managing challenges in shipping risk: Legal policy and marine environmental management, *Sustainability,* Vol.17, no.21, 2025, page.9528; Ying Li, and Yating Huang., Sustainable Development Goals (SDGs) and Local Self-Government: Approaches and Strategies for Sustainable Education, *Lex Localis-Journal Of Local Self-Government,* Vol.22, no.2, 2024, page.280; Ying Li, Liu Du, and Yung-Ho Chiu., Energy poverty impact on sustainable development of water resources in China: The study of an entropy recycling dynamic two-stage SBM model, *Water* Vol.16, no.6, 2024, page.876.

The map shows that sustainable development goals, governance, and climate change occupy the motor-theme quadrant, indicating high centrality and density. These themes are both conceptually developed and strongly connected to the wider research structure. Their position confirms their role as major intellectual drivers of sustainable government research. Empirical evidence demonstrates that the SDGs promote policy integration across government sectors while structural and institutional barriers continue to limit system-wide transformation.[54] Global governance research similarly shows that shared SDG frameworks can strengthen coordination through common objectives, monitoring arrangements, and institutional incentives, although fragmentation remains a persistent challenge.[55]

The motor position of governance and SDGs is particularly relevant to legal governance because it indicates that the literature increasingly treats SDGs not simply as development targets but as a framework requiring institutional coordination, policy coherence, regulatory capacity, and accountability. The effectiveness of SDG implementation therefore depends on the legal and institutional architecture through which public authorities exercise powers and coordinate responsibilities.

In contrast, sustainability, sustainable development, and SDGs appear as basic themes. Their high centrality but comparatively lower density indicates that they provide foundational concepts connecting multiple research areas while continuing to evolve. Sustainability governance requires integrated frameworks capable of balancing environmental, economic, and social objectives while managing policy trade-offs.[56] Institutional transformation, digital governance, and organizational innovation further support sustainable government by strengthening policy coordination, transparency, and operational capacity.[57]

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[54] Jana Birner, Basil Bornemann, and Frank Biermann., Policy integration through the sustainable development goals? The case of the German Federal Government, *Sustainable Development,* Vol.32, no.4, 2024, page.3886.

[55] Maya Bogers, Frank Biermann, Agni Kalfagianni, and Rakhyun E. Kim., The SDGs as integrating force in global governance? Challenges and opportunities, *International Environmental Agreements: Politics, Law and Economics,* Vol.23, no.2, 2023, page.165. See too, Maya Bogers, Frank Biermann, Agni Kalfagianni, Rakhyun E. Kim, Jelle Treep, and Martine G. De Vos., The impact of the Sustainable Development Goals on a network of 276 international organizations, *Global Environmental Change,* Vol.76, 2022, page.102569; Carole-Anne Sénit, and Frank Biermann., In whose name are you speaking? The marginalization of the poor in global civil society, *Global Policy,* Vol.12, no.5, 2021, page.587.

[56] Gabriela Ileana Iacobuţă, Niklas Höhne, Heleen Laura van Soest, and Rik Leemans., Transitioning to low-carbon economies under the 2030 agenda: Minimizing trade-offs and enhancing co-benefits of climate-change action for the sdgs. *Sustainability,* Vol.13, no.19, 2021, page.10776.

[57] Gatot Hery Djatmiko, Obsatar Sinaga, and Suharno Pawirosumarto., Digital transformation and social inclusion in public services: A qualitative analysis of e-government adoption for marginalized communities in sustainable governance, *Sustainability,* Vol.17, no.7, 2025, page.2912. See too, Muhammad Bilawal Khaskheli, Yongchen Zhao, and Zhuiwen Lai., Sustainable maritime governance of digital technologies for marine economic development and for managing challenges in shipping risk: Legal policy and marine environmental management, *Sustainability,* Vol.17, no.21, 2025, page.9529; Ying Li, and Yating Huang., Sustainable Development Goals (SDGs) and Local Self-Government: Approaches and Strategies

The niche-theme quadrant contains stakeholder, innovation, and China, representing specialized areas with relatively strong internal development but weaker integration with the broader conceptual structure. Meanwhile, policy making, local government, and policy implementation appear in the declining-theme quadrant. This position should not be interpreted as substantive irrelevance. Rather, it suggests that conventional administrative themes are increasingly being incorporated into broader governance frameworks. Local governments and institutional actors remain important for sustainability implementation through governance innovation, digital transformation, and organizational change.[58]

Overall, the thematic results demonstrate that SDG-oriented sustainable government research is evolving toward a governance-centered model of sustainability implementation. Governance integration functions as the principal structural hub; accountability and transparency provide mechanisms for responsibility and monitoring; public-sector implementation connects global SDG commitments with national and local action; and digital transformation provides emerging infrastructure for coordination and service delivery. The thematic map further confirms that governance, SDGs, and climate change are relatively mature and central themes, while sustainability and sustainable development provide the conceptual foundation of the field.

This thematic structure also reveals an increasingly important legal-governance dimension. The recurring connections among governance, policy integration, accountability, institutional capacity, local government, and SDG implementation indicate that a central challenge concerns how legal and administrative systems translate SDG commitments into coherent, coordinated, accountable, and implementable government action. This interpretation is consistent with the OECD's emphasis on policy coherence as a condition for SDG implementation across government systems (OECD, 2016) and with evidence that institutional fragmentation, limited coordination, and uneven governance capacity constrain the transformative potential of the SDGs.[59] Thus, the thematic evolution

for Sustainable Education, *Lex Localis-Journal Of Local Self-Government,* Vol.22, no.2, 2024, page.281.

[58] Suci Megawati, Muhammad Alfarizi, and Muhammad Rezky Syamsul., Key Advantages of the Green Government Initiative in Achieving Local Public Service Performance and Sustainable Development, *International Journal of Sustainable Development & Planning,* Vol.19, no.11, 2024, pagea.4365. See too, I. Prabawati, W. S. Utami, H. Harmanto, M. Meirinawati, S. Megawati, A. Indrasetianingsih, and S. Sudirman., Fostering achievement of sustainable development goals through green culture and digital transformation: Empirical evidence from an Indonesian education human resources university, *Problems and Perspectives in Management,* Vol.23, no.3, 2025, page.115; Nikki JJ Theeuwes, Marjanneke J. Vijge, and Koen Beumer., Is policy coherence leaving no one behind? Analyzing gender inequality in the governance of the sustainable development goals in India, *Environmental Policy and Governance,* Vol.35, no.3, 2025, page.475.

[59] Jana Birner, Basil Bornemann, and Frank Biermann., Policy integration through the sustainable development goals? The case of the German Federal Government, *Sustainable Development,* Vol.32, no.4, 2024, page.3887. See too, Maya Bogers, Frank Biermann, Agni Kalfagianni, and Rakhyun E. Kim., The SDGs as integrating force in global governance? Challenges and opportunities, *International Environmental Agreements: Politics, Law and Economics,* Vol.23, no.2, 2023, page.167; Maya Bogers, Frank Biermann, Agni Kalfagianni, Rakhyun E. Kim, Jelle Treep, and Martine G. De Vos., The impact of the Sustainable Development Goals on a network of 276 international organizations, *Global Environmental Change,* Vol.76,

demonstrates a shift from a predominantly normative understanding of sustainability toward a more institutional and legal-governance-oriented research agenda, centered on regulatory coherence, administrative coordination, accountability, and implementation capacity.

3.4. Legal-Governance Dimensions Emerging from the Thematic Structure

The thematic structure reveals four interconnected legal-governance dimensions: governance integration and policy coordination, accountability and transparency, public-sector implementation, and digital transformation. Although collaborative governance is not a standalone cluster, its core elements are embedded across these themes through coordination, accountability, implementation, and digital governance.[60]

Governance integration and policy coordination constitute the most central and developed theme. Governance, policy integration, global governance, sustainable development, and climate change occupy the motor-theme quadrant, indicating high centrality and density. This finding supports evidence that the SDGs function as an integrating framework across government sectors and levels, although institutional fragmentation and structural barriers continue to constrain systemic integration.[61] The motor position also suggests that the literature increasingly conceptualizes SDGs as a governance framework, rather than merely development targets, requiring coordination across institutions and governance levels.[62] Multistakeholder research similarly shows that SDG implementation depends on governance arrangements connecting public authorities, private actors, and civil

2022, page.102572; Carole-Anne Sénit, and Frank Biermann., In whose name are you speaking? The marginalization of the poor in global civil society, *Global Policy,* Vol.12, no.5, 2021, page.588.

[60] Gidion Arif Setyawan, and Andy Fefta Wijaya., Urgency of institutionalizing collaborative governance in the legal system for the protection of children in conflict with the law, *Jurnal Hukum Unissula,* Vol.41, no.2, 2025, page.349. See too, Gandung Troy Sulistyantoro, Akhsanul Khaq, Md Zubair Kasem Khan, Al Amin, and Abdullah-Al-Monzur Hussain., Shaping artificial intelligence governance and risk management in the public sector: Regulatory insights, *Lex Publica,* Vol.11, no.1, 2024, page.165; Sigit Wijatmoko, B. Akbar, Ika Sartika, and Rosmery Elsye., Collaborative governance in digital transformation policy implementation for MSMEs in Jakarta: A socio-legal perspective, *Jurnal Hukum Unissula,* Vol.41, no.2, 2025, page.369.

[61] Jana Birner, Basil Bornemann, and Frank Biermann., Policy integration through the sustainable development goals? The case of the German Federal Government, *Sustainable Development,* Vol.32, no.4, 2024, page.3888. See too, Maya Bogers, Frank Biermann, Agni Kalfagianni, and Rakhyun E. Kim., The SDGs as integrating force in global governance? Challenges and opportunities, *International Environmental Agreements: Politics, Law and Economics,* Vol.23, no.2, 2023, page.168; Maya Bogers, Frank Biermann, Agni Kalfagianni, Rakhyun E. Kim, Jelle Treep, and Martine G. De Vos., The impact of the Sustainable Development Goals on a network of 276 international organizations, *Global Environmental Change,* Vol.76, 2022, page.102575; Carole-Anne Sénit, and Frank Biermann., In whose name are you speaking? The marginalization of the poor in global civil society, *Global Policy,* Vol.12, no.5, 2021, page.589.

[62] Cameron Allen, Shirin Malekpour, and Michael Mintrom., Cross-scale, cross-level and multi-actor governance of transformations toward the sustainable development goals: A review of common challenges and solutions, *Sustainable Development,* Vol.31, no.3, 2023, page.1258.

society.[63] Thus, institutional coordination emerges as a central feature of sustainable government research.

This governance integration has a direct legal-governance dimension because coordination requires formal institutional arrangements concerning authority, responsibility, mandates, and inter-organizational relationships. The literature's emphasis on policy integration suggests that sustainable government increasingly involves questions concerning how different regulatory and administrative instruments can be aligned to achieve cross-sectoral SDG objectives. The SDGs require governments to coordinate policies that may otherwise be implemented through separate administrative structures. Accordingly, the thematic prominence of policy integration indicates a growing concern with the institutional and regulatory conditions necessary to reduce fragmented decision-making. The OECD (2016) similarly identifies policy coherence as an important condition for achieving sustainable development across government systems.[64]

The second dimension is accountability and governance transparency. Cluster 1 links accountability, transparency, ESG, sustainability reporting, stakeholder engagement, and corporate governance, indicating that SDG implementation is increasingly associated with monitoring, reporting, and responsibility mechanisms. Sustainability reporting research similarly highlights its growing role in supporting SDG implementation, while evidence from developing countries emphasizes accountability arrangements in translating sustainability commitments into public-sector action.[65] From a legal-governance perspective, accountability provides the institutional basis for monitoring government commitments and evaluating implementation. The association between accountability and sustainability reporting therefore points to the need for defined institutional responsibilities, reporting obligations, monitoring mechanisms, and performance assessment. This orientation is also consistent with ESG research linking governance, transparency, stakeholder engagement, and accountability to sustainability performance.[66]

The third dimension concerns public-sector implementation and multi-level governance. Cluster 2 links the 2030 Agenda, local governments, economic growth, environmental sustainability, and sustainable governance, indicating increasing attention to translating global SDG commitments into national and

[63] Lisa-Maria Glass, Jens Newig, and Simon Ruf., MSPs for the SDGs–Assessing the collaborative governance architecture of multi-stakeholder partnerships for implementing the Sustainable Development Goals, *Earth System Governance,* Vol.17, 2023, 10183.

[64] OECD., *Better Policies for Sustainable Development 2016*, Paris, OECD Publishing, 2016, page.25.

[65] Diamantina Amélia Parckings Tauro Cumbana, and José Biléu Ventura., Sustainability reporting and sustainable development goals: bibliometric analysis, *Cogent Business & Management,* Vol.12, no.1, 2025, page.24551. See too, Sarah George Lauwo, John De-Clerk Azure, and Trevor Hopper., Accountability and governance in implementing the Sustainable Development Goals in a developing country context: evidence from Tanzania, *Accounting, Auditing & Accountability Journal,* Vol.35, no.6, 2022, page.1439.

[66] Hung-Jung Siao, Sue-Huai Gau, Jen-Hwa Kuo, Ming-Guo Li, and Chang-Jung Sun., Bibliometric analysis of environmental, social, and governance management research from 2002 to 2021, *Sustainability,* Vol.14, no.23, 2022, page.16125. See too, Muhammad Salman Shabbir., Corporate sustainability reimagined: A bibliometric–systematic literature review of governance, technology, and stakeholder-driven strategies for SDG impact, *Business Strategy and the Environment,* Vol.34, no.7, 2025, page.9207.

subnational action. Local governments are particularly important because they connect global objectives with local administrative capacities and practices, while policy coherence requires institutional adaptation across governance levels and attention to inclusivity.[67] Although policy making, policy implementation, and local government appear in the declining-theme quadrant, this does not necessarily indicate declining substantive importance. Rather, these conventional administrative themes appear increasingly embedded within broader frameworks of governance integration and institutional coordination. Evidence confirms the continuing role of local governments through green governance, organizational transformation, and digital innovation.[68] Moreover, multilevel and multi-actor arrangements can significantly shape policy implementation outcomes, reinforcing the importance of institutional alignment across governance levels.[69]

The fourth dimension concerns digital governance and technological transformation. Cluster 4 links digital transformation, SDGs, and sustainability, indicating the growing integration of technology into sustainable government research. Digital transformation can improve public service delivery, governance efficiency, and social inclusion, while its connection with SDG implementation is increasingly evident in the literature.[70] From a legal-governance perspective, digital government requires institutional arrangements governing data, information, transparency, administrative processes, and accountability. Thus, digital transformation involves not only technological efficiency but also the capacity of legal and administrative systems to regulate technology while maintaining inclusive and accountable governance. Socio-legal research highlights

[67] Ana Filipa Silva, M. Isabel Sánchez-Hernández, and Luísa Cagica Carvalho., Local public administration in the process of implementing sustainable development goals, *Sustainability,* Vol.15, no.21, 2023, page.15269. See too, Nikki JJ Theeuwes, Marjanneke J. Vijge, and Koen Beumer., Is policy coherence leaving no one behind? Analyzing gender inequality in the governance of the sustainable development goals in India, *Environmental Policy and Governance,* Vol.35, no.3, 2025, page.477.

[68] Suci Megawati, Muhammad Alfarizi, and Muhammad Rezky Syamsul., Key Advantages of the Green Government Initiative in Achieving Local Public Service Performance and Sustainable Development, *International Journal of Sustainable Development & Planning,* Vol.19, no.11, 2024, pagea.4366. See too, Suci Megawati, Muhammad Alfarizi, and Muhammad Rezky Syamsul., Key Advantages of the Green Government Initiative in Achieving Local Public Service Performance and Sustainable Development, *International Journal of Sustainable Development & Planning,* Vol.19, no.11, 2024, pagea.4368; I. Prabawati, W. S. Utami, H. Harmanto, M. Meirinawati, S. Megawati, A. Indrasetianingsih, and S. Sudirman., Fostering achievement of sustainable development goals through green culture and digital transformation: Empirical evidence from an Indonesian education human resources university, *Problems and Perspectives in Management,* Vol.23, no.3, 2025, page.117.

[69] Mattia Casula., How different multilevel and multi-actor arrangements impact policy implementation: Evidence from EU regional policy, *Territory, Politics, Governance,* Vol.12, no.7, 2024, page.1050.

[70] Gatot Hery Djatmiko, Obsatar Sinaga, and Suharno Pawirosumarto., Digital transformation and social inclusion in public services: A qualitative analysis of e-government adoption for marginalized communities in sustainable governance, *Sustainability,* Vol.17, no.7, 2025, page.2913. See too, Anna Sanina, Evgeny Styrin, Eran Vigoda-Gadot, Maria Yudina, and Anna Semenova., Digital government transformation and sustainable development goals: To what extent are they interconnected? Bibliometric analysis results, *Sustainability,* Vol.16, no.22, 2024, page.9765.

the importance of institutional coordination and regulatory arrangements in digital governance implementation, while research on public-sector digital technologies and sustainable maritime governance further demonstrates the relevance of regulatory frameworks, risk management, and legal policy.[71]

The thematic map further identifies sustainability, sustainable development, and SDGs as basic themes. Their high centrality but comparatively lower density indicates that these concepts form the foundational intellectual infrastructure connecting multiple research areas while continuing to develop through empirical and interdisciplinary applications. This position reflects the institutionalization of sustainability governance across policy, administrative, environmental, and technological domains. Research on sustainability transitions emphasizes the need to balance environmental, economic, and social objectives while minimizing policy trade-offs and enhancing co-benefits.[72] The SDGs therefore operate as a common conceptual framework connecting different governance problems rather than as an isolated thematic area.

Meanwhile, stakeholder, innovation, and China appear in the niche-theme quadrant. Their position indicates specialized themes with relatively strong internal development but weaker connections to the dominant conceptual structure. These themes can be interpreted as specialized research trajectories addressing stakeholder participation, technological innovation, and context-specific governance challenges. The stakeholder dimension is consistent with research emphasizing multi-actor and collaborative arrangements in SDG implementation.[73] The legal dimension of stakeholder participation is also increasingly visible in research examining regulatory effectiveness, stakeholder awareness, and governance gaps in sustainable development.[74]

Overall, the thematic structure shows a growing legal-governance orientation in sustainable government research. Governance integration forms the dominant

[71] Muhammad Bilawal Khaskheli, Yongchen Zhao, and Zhuiwen Lai., Sustainable maritime governance of digital technologies for marine economic development and for managing challenges in shipping risk: Legal policy and marine environmental management, *Sustainability,* Vol.17, no.21, 2025, page.9531. See too, Gandung Troy Sulistyantoro, Akhsanul Khaq, Md Zubair Kasem Khan, Al Amin, and Abdullah-Al-Monzur Hussain., Shaping artificial intelligence governance and risk management in the public sector: Regulatory insights, *Lex Publica,* Vol.11, no.1, 2024, page.167; Sigit Wijatmoko, B. Akbar, Ika Sartika, and Rosmery Elsye., Collaborative governance in digital transformation policy implementation for MSMEs in Jakarta: A socio-legal perspective, *Jurnal Hukum Unissula,* Vol.41, no.2, 2025, page.370.

[72] Gabriela Ileana Iacobuţă, Niklas Höhne, Heleen Laura van Soest, and Rik Leemans., Transitioning to low-carbon economies under the 2030 agenda: Minimizing trade-offs and enhancing co-benefits of climate-change action for the sdgs. *Sustainability,* Vol.13, no.19, 2021, page.10779.

[73] Cameron Allen, Shirin Malekpour, and Michael Mintrom., Cross-scale, cross-level and multi-actor governance of transformations toward the sustainable development goals: A review of common challenges and solutions, *Sustainable Development,* Vol.31, no.3, 2023, page.1259. See too, Lisa-Maria Glass, Jens Newig, and Simon Ruf., MSPs for the SDGs–Assessing the collaborative governance architecture of multi-stakeholder partnerships for implementing the Sustainable Development Goals, *Earth System Governance,* Vol.17, 2023, 10186.

[74] Jiakun Huo, and Yashu Zhao., Bridging the legal divide: evaluating stakeholder awareness, regulatory effectiveness, and governance gaps in sustainable development across urban and rural China, *Humanities and Social Sciences Communications,* Vol.12, no.1, 2025, page.1947.

theme, while accountability, multi-level implementation, and digital transformation address responsibility, coordination, and emerging institutional requirements. Although collaborative governance is not a separate dominant cluster, its elements are embedded across these themes through coordination, accountability, stakeholder participation, implementation, and digital governance.[75]

The findings indicate that SDG implementation increasingly depends on policy coherence, institutional coordination, accountability, multi-level governance, and regulatory capacity. The motor-theme position of governance, SDGs, and climate change confirms the maturity of governance integration, while sustainability and sustainable development provide the conceptual foundation. Digital transformation, innovation, and stakeholder governance represent continuing areas of development, demonstrating that legal governance is an increasingly embedded dimension of how sustainable government research conceptualizes SDG implementation.

4. Conclusion

This study provides a comprehensive bibliometric analysis of SDG-oriented sustainable government research, revealing its intellectual structure, thematic evolution, and knowledge production dynamics. The findings show that the field experiences rapid growth in scientific production, particularly after 2020, indicating increasing scholarly attention to sustainability governance and SDG implementation. Governance integration, sustainable development goals, and climate change emerge as motor themes, confirming that the literature increasingly focuses on how governments coordinate policies, institutions, and implementation mechanisms to achieve sustainability objectives. At the same time, sustainability and sustainable development function as foundational themes that support the broader conceptual structure, while digital transformation and institutional innovation emerge as critical enablers of sustainable governance.

From a theoretical perspective, this study integrates sustainability and public administration research into an SDG-centered governance framework, showing that governance integration, accountability, and institutional capacity constitute core dimensions of sustainable government research. The findings position the SDGs not merely as policy targets but as a framework for governance transformation. They further indicate that effective sustainable government requires inter-actor coordination, shared accountability, and collaborative implementation capacity. Practically, the findings highlight the need to strengthen governance coordination, digital transformation, institutional capacity, and accountability to support effective SDG implementation and improve sustainability outcomes. This study has several limitations. First, the analysis relies exclusively on Scopus-indexed journal articles, which may exclude relevant publications indexed in other databases. Second, bibliometric methods focus on structural and

[75] Gidion Arif Setyawan, and Andy Fefta Wijaya., Urgency of institutionalizing collaborative governance in the legal system for the protection of children in conflict with the law, *Jurnal Hukum Unissula,* Vol.41, no.2, 2025, page.350. See too, Sigit Wijatmoko, B. Akbar, Ika Sartika, and Rosmery Elsye., Collaborative governance in digital transformation policy implementation for MSMEs in Jakarta: A socio-legal perspective, *Jurnal Hukum Unissula,* Vol.41, no.2, 2025, page.372.

thematic patterns rather than evaluating policy effectiveness or implementation outcomes. Third, keyword-based analysis depends on author-provided terms, which may not fully capture all conceptual relationships.

Future research should expand the analysis by incorporating multiple databases, conducting longitudinal policy impact studies, and integrating qualitative and empirical approaches. In addition, future studies should examine how digital governance, institutional innovation, and multi-level governance mechanisms influence SDG implementation effectiveness, particularly in developing countries. Such research will further strengthen the theoretical and practical understanding of sustainable government in achieving long-term sustainability goals.

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