The Es Economics and Entrepreneurship
Vol. 3, No. 03, April 2025, pp. 302 – 316
ISSN: 2964-8920, DOI: 10.58812/esee.v3i03

Blue Economy and Ocean Sustainability: A Bibliometric Review of Global Research

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Article Info

Article history:

Received Mar, 2025
Revised Apr, 2025
Accepted Apr, 2025

Keywords:

Blue Economy;
Environmental Economics;
Governance;
Marine Policy;
Ocean Sustainability

ABSTRACT

The blue economy has emerged as a crucial framework for balancing economic development and marine sustainability. This study employs a bibliometric analysis using data from Scopus and VOSviewer to examine global research trends in the blue economy and ocean sustainability. The findings reveal a rapid increase in scholarly interest, particularly in governance, marine policy, environmental economics, and climate change adaptation. Key contributing countries include the United States, United Kingdom, and Australia, while financial instruments such as blue bonds and sustainable investment funds are gaining prominence as emerging research themes. The study also highlights a shift towards equity and inclusivity in blue economy discussions, addressing socio-economic challenges in marine industries. Despite significant advancements, knowledge gaps persist regarding the effectiveness of governance frameworks, accessibility of financial mechanisms, and social equity. This study contributes to the literature by providing a comprehensive analysis of research trajectories, identifying future research directions, and emphasizing the need for interdisciplinary approaches in achieving a sustainable and inclusive blue economy.

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1. INTRODUCTION

The concept of the blue economy has gained significant global attention as an innovative framework for sustainable ocean resource management and economic growth. Defined by the Group (2017) as the sustainable use of ocean resources for economic development, improved livelihoods, and ocean ecosystem health, the blue economy encompasses various sectors, including fisheries, aquaculture, marine biotechnology, coastal tourism, and renewable ocean energy. Given the increasing pressures on marine environments due to overfishing, pollution, and climate change, the need to balance economic activities with environmental sustainability has become a central concern for policymakers and researchers worldwide [2]. This has led to a surge in research focused on understanding and implementing sustainable ocean-based economies that promote economic prosperity while preserving marine biodiversity.

With over three billion people relying on the ocean for their livelihoods, the sustainable management of marine resources is paramount [3]. The blue economy provides a pathway for achieving the United Nations Sustainable Development Goals (SDGs),

particularly SDG 14, which aims to conserve and sustainably use oceans, seas, and marine resources. Many nations have begun incorporating blue economy strategies into their national policies, focusing on marine spatial planning, ecosystem-based management, and innovations in sustainable marine industries [4]. These strategies seek to foster economic resilience while mitigating environmental degradation, thus ensuring long-term ocean sustainability.

Despite its growing popularity, the blue economy is not a universally agreed-upon concept, and different interpretations exist across countries and institutions. While some view it as an economic paradigm centered on maximizing economic benefits from the ocean, others emphasize ecological sustainability and social equity [5]. This divergence in perspectives has led to variations in policy implementations, research priorities, and institutional frameworks governing ocean sustainability. Understanding these diverse viewpoints is essential for developing a comprehensive and inclusive approach to the blue economy that aligns economic, social, and environmental goals.

Research on the blue economy has expanded in the past two decades, driven by increased global awareness of ocean sustainability and the threats posed by anthropogenic activities. Bibliometric studies have emerged as a valuable tool to analyze the evolution of this research field, identifying key themes, influential studies, and knowledge gaps. By examining scientific literature on the blue economy, researchers can assess trends in publications, collaborations, and policy influences that shape global discourse on ocean sustainability [6]. Such analyses help policymakers and stakeholders understand the trajectory of blue economy research and identify areas where further investigation is needed.

Given the interdisciplinary nature of the blue economy, research has spanned multiple fields, including marine ecology, economics, governance, and technology. This diversity highlights the complexity of achieving ocean sustainability, requiring integrative approaches that bridge scientific, economic, and policy dimensions [7]. The increasing availability of big data, artificial intelligence, and remote sensing technologies has also transformed how ocean resources are monitored and managed, offering new avenues for enhancing sustainable blue economy practices. Understanding the evolution of global research on the blue economy through a bibliometric lens provides valuable insights into the state of knowledge and emerging frontiers in this critical field.

While the blue economy has gained prominence in academic and policy discussions, there remains a lack of comprehensive understanding of its research landscape. The rapid expansion of literature on ocean sustainability presents challenges in identifying dominant themes, influential research, and existing gaps in knowledge. Although various studies have examined specific aspects of the blue economy, there is a need for a systematic bibliometric review to synthesize global research trends. Without such an analysis, it is difficult to assess the progression of scientific discourse, the impact of policy initiatives, and the effectiveness of current sustainability strategies. A bibliometric approach can address this gap by mapping the intellectual structure of blue economy research, highlighting influential contributions, and guiding future investigations. This study aims to conduct a bibliometric analysis of global research on the blue economy and ocean sustainability to identify key trends, influential authors, major research themes, and emerging areas of interest.

2. LITERATURE REVIEW

2.1 Conceptual Foundations of the Blue Economy

The blue economy has emerged as a critical framework for sustainable ocean resource utilization, combining economic growth with marine conservation [8]. The term gained prominence following the 2012 Rio+20 Conference, where it was positioned as an essential strategy for sustainable development, particularly for coastal

nations and small island developing states [9]. While the concept is closely related to the green economy, it focuses specifically on ocean-based industries, including fisheries, aquaculture, marine biotechnology, coastal tourism, and offshore renewable energy [10]. Despite its broad scope, scholars have debated its precise definition, with some emphasizing economic gains and others stressing environmental sustainability and social equity [11]. This ongoing discourse highlights the interdisciplinary nature of the blue economy and the need for holistic approaches to policy formulation and implementation.

2.2 *Evolution of Research in the Blue Economy*

The expansion of academic interest in the blue economy has led to diverse research trajectories. Bibliometric studies have revealed an exponential increase in publications over the last two decades, reflecting growing global concerns about ocean sustainability [12]. Early research primarily focused on fisheries and marine conservation, while contemporary studies increasingly examine integrated governance approaches, sustainable financing mechanisms, and technological innovations [13]. Thematic analyses indicate that research clusters around three main domains: (1) ecological sustainability, (2) economic potential, and (3) governance frameworks. Studies on ecological sustainability assess marine biodiversity conservation, ecosystem-based management, and the impacts of climate change on ocean resources [14]. Meanwhile, economic studies evaluate the financial viability of marine industries, exploring blue finance, natural capital accounting, and sustainable supply chains [15]. Governance research examines international regulatory frameworks, policy effectiveness, and stakeholder engagement in blue economy initiatives [16]. These interconnected research strands demonstrate the complexity of achieving a sustainable blue economy.

2.3 *Policy and Governance Approaches*

Governance structures play a crucial role in shaping the implementation of blue economy initiatives. Many countries have adopted national and regional policies to harness the economic potential of ocean resources while ensuring environmental sustainability [17]. The European Union's Blue Growth Strategy, the African Union's Blue Economy Strategy, and various national ocean policies illustrate the diverse approaches taken to operationalize blue economy principles [18]. However, governance challenges persist, including jurisdictional conflicts, policy fragmentation, and enforcement limitations [19]. Scholars emphasize the need for adaptive governance frameworks that integrate scientific knowledge, traditional ecological insights, and participatory decision-making [20]. Multi-level governance, which involves cooperation between local, national, and international stakeholders, has been proposed as a mechanism to enhance policy coherence and implementation effectiveness [21]. Furthermore, emerging research highlights the significance of inclusive governance, ensuring that marginalized communities, including small-scale fishers and indigenous groups, are involved in decision-making processes [22].

2.4 *Economic Potential and Sustainable Finance*

The economic prospects of the blue economy are substantial, with the global ocean economy projected to reach USD 3 trillion by 2030. Sustainable finance mechanisms, including blue bonds, impact investments, and carbon credits, have gained traction as tools to fund marine conservation and sustainable industry practices [23]. Natural capital accounting frameworks help assess the economic value of marine ecosystems, promoting investment in ecosystem

services and sustainable business models [24]. However, concerns persist regarding the equitable distribution of economic benefits and the risks of blue economy initiatives exacerbating social inequalities. Scholars argue that sustainability assessments should incorporate social indicators, including labor rights, gender equality, and community resilience [25]. Addressing these concerns requires balancing economic growth with social and environmental safeguards, ensuring that blue economy initiatives contribute to inclusive development.

2.5 Technological Innovations in the Blue Economy

Technological advancements have significantly influenced the evolution of the blue economy, particularly in ocean monitoring, marine resource management, and offshore energy development. Remote sensing, artificial intelligence, and blockchain technology have transformed data collection, improving the accuracy of marine spatial planning and ecosystem assessments [26]. Innovations in offshore renewable energy, such as floating wind farms and wave energy converters, contribute to the transition toward sustainable energy sources [27]. Furthermore, advancements in aquaculture, including precision feeding, genetic improvements, and automated monitoring systems, have enhanced productivity while minimizing environmental impacts. Digitalization and automation in maritime industries also improve efficiency and sustainability, reducing carbon emissions and enhancing supply chain transparency. However, technological adoption requires regulatory frameworks to address ethical, environmental, and economic implications, ensuring that innovations align with sustainability goals [28].

2.6 Social and Environmental Challenges

Despite its potential, the blue economy faces significant social and environmental challenges that must be addressed to ensure long-term sustainability. Climate change poses a severe threat to marine ecosystems, with rising sea levels, ocean acidification, and extreme weather events affecting coastal communities and industries [29]. Overfishing, habitat destruction, and marine pollution further undermine the resilience of ocean ecosystems, necessitating stringent conservation measures [30]. Social justice concerns also arise in blue economy initiatives, as industrialization of ocean resources may marginalize traditional and small-scale fisheries. Ensuring equitable access to marine resources and fair compensation for local communities remains a priority for sustainable development. Additionally, gender disparities in marine industries highlight the need for inclusive policies that promote gender equity and social well-being [31].

3. METHOD

This study employs a bibliometric analysis approach to examine global research trends in the blue economy and ocean sustainability. Data is collected exclusively from Scopus using relevant keywords such as "blue economy," "ocean sustainability," and "marine resource management." The retrieved dataset is analyzed using the bibliometric tool VOSviewer to map research trends, co-authorship networks, citation patterns, and thematic clusters. Descriptive statistics are used to assess publication growth over time, while network analysis identifies influential authors, institutions, and collaborations. Furthermore, thematic mapping techniques are applied to categorize research topics and highlight emerging areas in the field. The study follows PRISMA guidelines to ensure systematic data selection, screening, and inclusion criteria.

4. RESULT AND DISCUSSION

4.1 Results

a. Descriptive Analysis

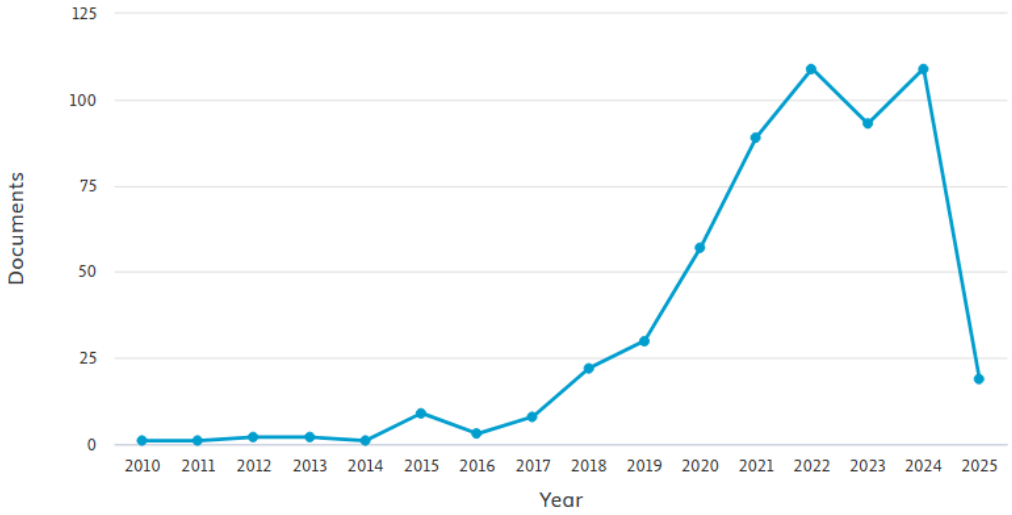

Figure 1. Documents by Year
Source: Scopus, 2025

The line graph depicts the number of published documents related to the blue economy and ocean sustainability from 2010 to 2025. The data shows a gradual increase in publications from 2010 to 2016, followed by a more noticeable growth from 2017 onwards. A significant rise in research output is observed between 2019 and 2021, indicating a surge in academic interest, likely driven by increasing global awareness of marine sustainability and policy initiatives. The number of publications peaked in 2022, experienced a slight decline in 2023, and rebounded in 2024. However, a sharp drop is noticeable in 2025, which may be due to incomplete data collection for the current year.

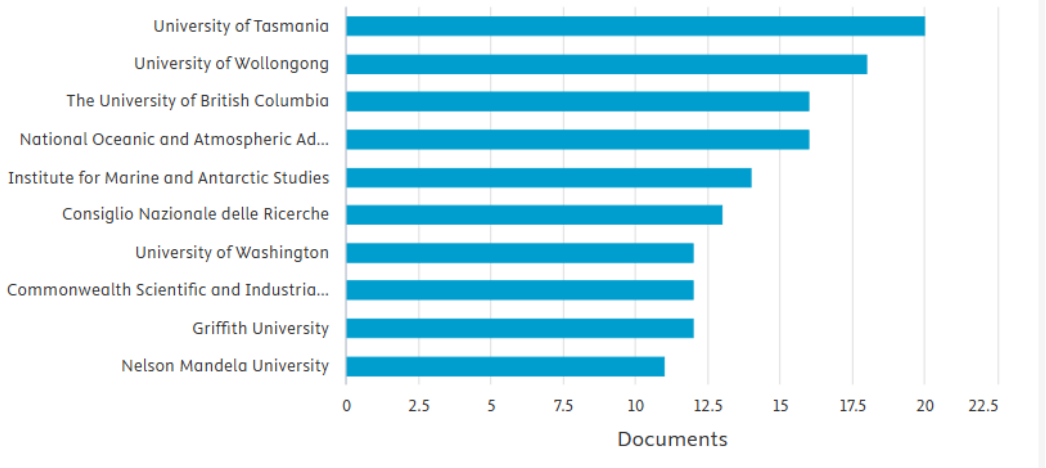

Figure 2. Documents by Affiliation
Source: Scopus, 2025

The horizontal bar chart presents the top institutions contributing to research on the blue economy and ocean sustainability based on the number of published documents. The University of

Tasmania leads with the highest number of publications, followed closely by the University of Wollongong. Other notable institutions include The University of British Columbia, National Oceanic and Atmospheric Administration (NOAA), and the Institute for Marine and Antarctic Studies, indicating a strong research focus from institutions based in Australia, North America, and Europe. The presence of Consiglio Nazionale delle Ricerche (Italy) and Nelson Mandela University (South Africa) highlights the global nature of research efforts. The data suggests that institutions with a strong focus on marine science, environmental sustainability, and policy research play a significant role in advancing knowledge on the blue economy, with Australian universities being particularly dominant in this field.

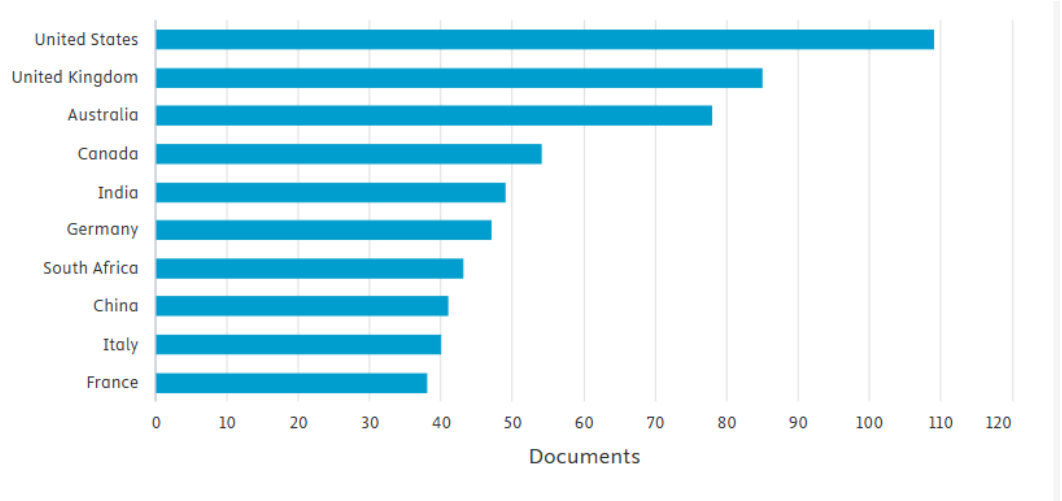

Figure 3. Country by Documents
Source: Scopus, 2025

The horizontal bar chart illustrates the top contributing countries in research on the blue economy and ocean sustainability based on the number of published documents. The United States leads significantly, with over 110 publications, indicating its dominant role in this research field. The United Kingdom follows closely, along with Australia, both of which have strong academic and governmental initiatives focused on marine sustainability. Canada, India, and Germany also contribute substantially, reflecting their engagement in ocean-related research and policy development. The inclusion of South Africa, China, Italy, and France highlights the global interest in the blue economy, spanning multiple continents. The distribution suggests that developed nations, particularly those with extensive coastlines and marine resources, are at the forefront of blue economy research, while emerging economies are increasingly contributing to the discourse.

b. Keyword Co-Occurrence Network Visualization

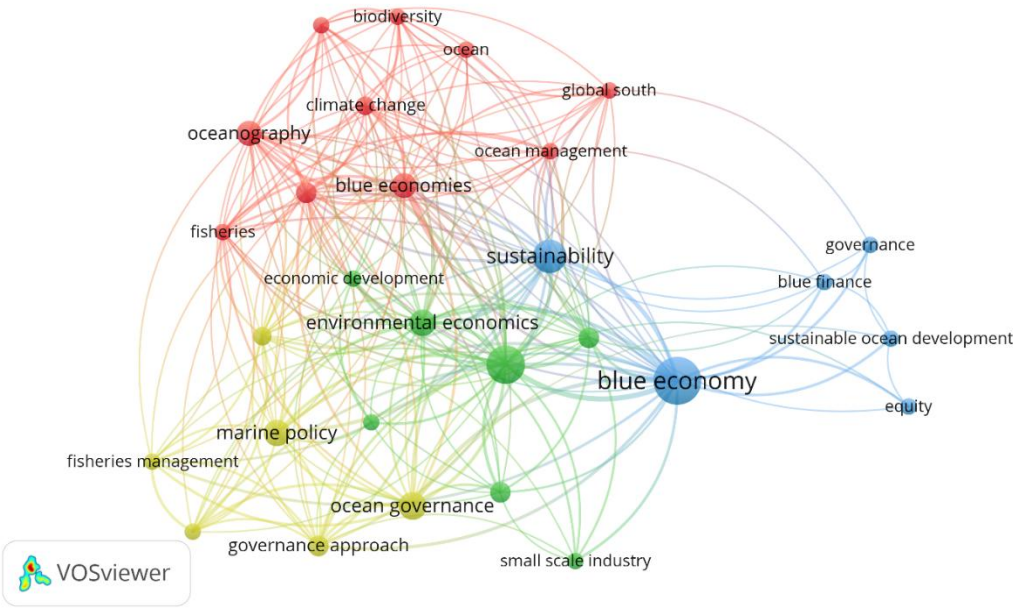

Figure 4. Network Visualization
Source: Data Processed, 2025

The network visualization generated by VOSviewer displays key research themes and their interconnections within the field of the blue economy and ocean sustainability. The size of the nodes represents the frequency of keyword occurrences, while the thickness of the links indicates the strength of co-occurrence between terms. The color clusters group related keywords, revealing distinct research areas within the broader blue economy discourse. The "blue economy" term appears as the most dominant node, connecting strongly with sustainability, ocean governance, and blue finance, highlighting its central role in research. The blue cluster represents governance and policy-related aspects of the blue economy. Keywords such as "governance," "blue finance," "sustainable ocean development," and "equity" indicate research focused on regulatory frameworks, financial mechanisms, and social inclusivity in sustainable ocean management. The presence of "equity" suggests an increasing focus on fair resource distribution and inclusive economic growth within blue economy strategies. This cluster highlights how governance structures shape sustainable development in ocean-related industries.

The green cluster is centered around environmental economics, ocean governance, and marine policy, showing the intersection of economic and environmental concerns in blue economy research. Keywords like "environmental economics," "economic development," and "small-scale industry" emphasize research on balancing economic growth with marine resource conservation. The connections to marine policy and fisheries management suggest that much of this discourse focuses on sustainable fishing practices, ecosystem services, and economic valuation of marine resources. The red cluster represents research linked to oceanography, biodiversity, and climate change, showing how environmental factors influence the blue economy. Terms like "climate change," "biodiversity," "ocean," and

"ocean management" indicate a strong connection between marine science and economic activities. This cluster suggests that a substantial body of research investigates how climate change affects marine biodiversity and, in turn, impacts sustainable economic development. The presence of "global south" suggests growing attention to the vulnerabilities of developing coastal nations in adapting to environmental challenges. The yellow cluster focuses on governance approaches and fisheries management, linking closely with marine policy and economic sustainability. The interconnections between clusters demonstrate the interdisciplinary nature of blue economy research, merging governance, economics, environmental science, and policy-making.

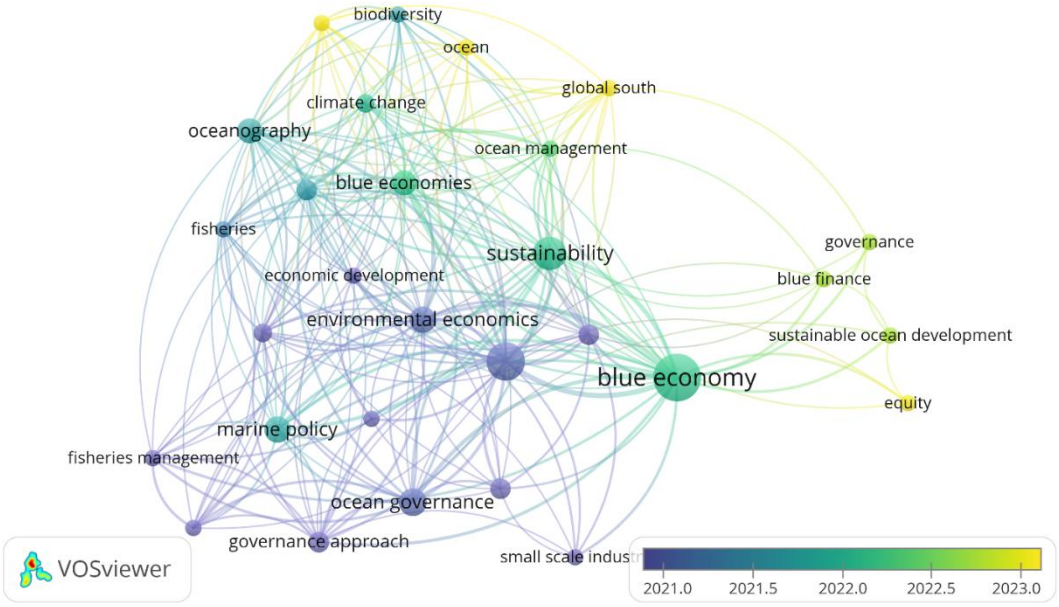

Figure 5. Overlay Visualization
Source: Data Processed, 2025

The overlay visualization generated by VOSviewer provides insights into the temporal evolution of research themes within the blue economy and ocean sustainability field. The color gradient (from blue to yellow) represents the average publication year of each keyword, with blue indicating older research topics (around 2021) and yellow highlighting more recent research trends (2023). The "blue economy" remains the most dominant node, reinforcing its central role in research. Keywords such as "ocean governance," "marine policy," and "environmental economics" appear in blue and green shades, indicating that they have been well-established areas of study since at least 2021. Emerging research trends are represented in yellow and light green shades, with terms such as "sustainable ocean development," "blue finance," "governance," and "equity" becoming more prominent in recent years. This suggests a shift towards exploring financial mechanisms and governance frameworks that support equitable and sustainable marine economic activities. The increased focus on "global south" also implies a growing interest in how developing nations are integrating blue economy principles into their economic policies, addressing socio-economic

disparities, and tackling climate change challenges. The interconnected clusters demonstrate the interdisciplinary nature of blue economy research, linking marine science, environmental policy, and economic development. The prominence of "climate change" and "biodiversity" in recent studies indicates an increasing awareness of the ecological implications of ocean-based industries. This suggests that contemporary research is moving towards a more holistic approach, integrating economic sustainability with environmental conservation and social equity.

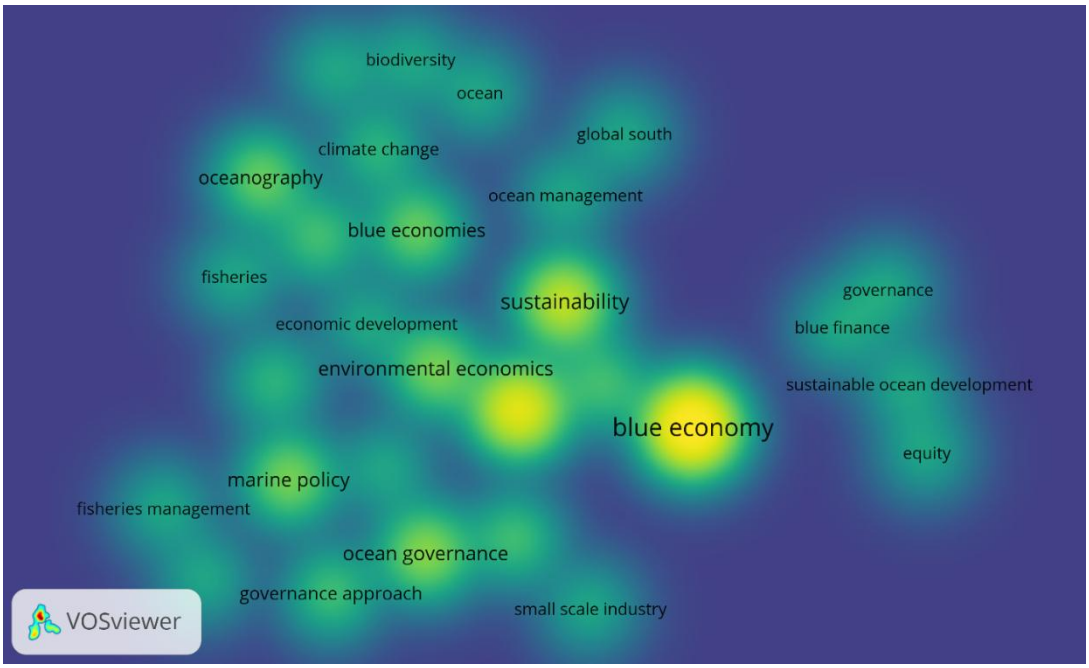

Figure 6. Density Visualization
Source: Data Processed, 2025

The density visualization generated by VOSviewer highlights the most prominent research topics in the field of the blue economy and ocean sustainability. The yellow regions indicate areas with high keyword occurrences, suggesting well-established and heavily studied topics, while green areas represent moderately researched themes. The "blue economy" is the most dominant term, appearing at the center with the highest density, reflecting its central role in scholarly discussions. Other high-density keywords include "sustainability", "environmental economics", and "marine policy", indicating a strong research focus on balancing economic growth with environmental conservation and policy-making. In contrast, the blue regions, which appear darker, indicate less frequent but emerging research topics. Keywords such as "blue finance," "equity," and "global south" are located in lower-density areas, suggesting that these themes are gaining attention but are not yet as extensively studied. The presence of "climate change" and "biodiversity" within moderate-density zones highlights the increasing integration of ecological concerns into blue economy research.

c. Co-Authorship Visualization

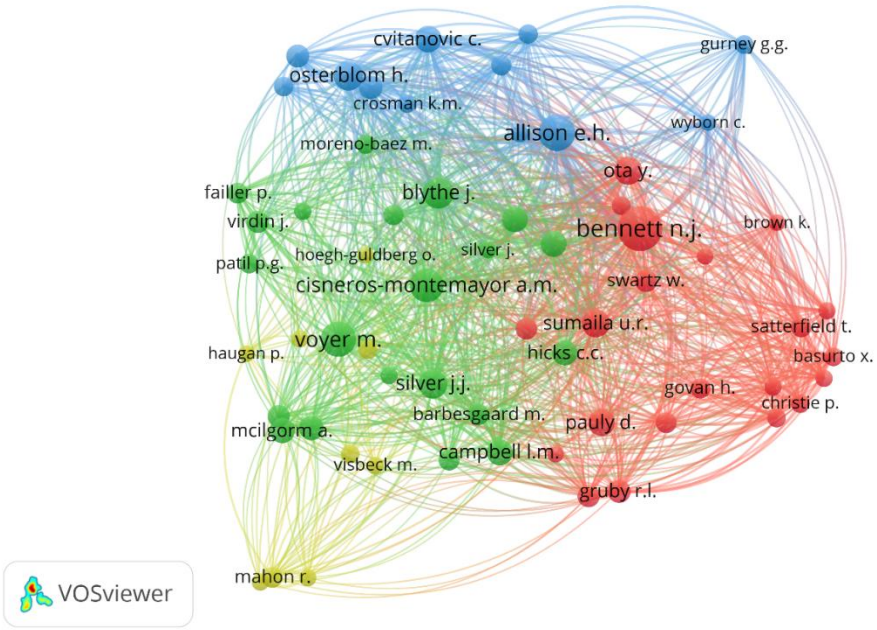

Figure 7. Author Visualization
Source: Data Processed, 2025

The co-authorship network visualization illustrates the collaboration patterns among researchers in the field of the blue economy and ocean sustainability. The nodes represent individual authors, with larger nodes indicating higher publication output or centrality in the network, while edges (connections) indicate co-authorship relationships. The color-coded clusters represent distinct research groups that frequently collaborate. The red cluster, centered around Bennett N.J. and Sumaila U.R., focuses on governance, economics, and policy aspects of the blue economy. The green cluster, led by authors like Voyer M. and Cisneros-Montemayor A.M., appears to emphasize marine policy and environmental sustainability. The blue cluster, featuring Allison E.H. and Gurney G.G., likely deals with conservation, fisheries, and interdisciplinary research. The dense interconnections suggest that research in this field is highly collaborative, with well-established networks among scholars contributing to the advancement of ocean sustainability knowledge.

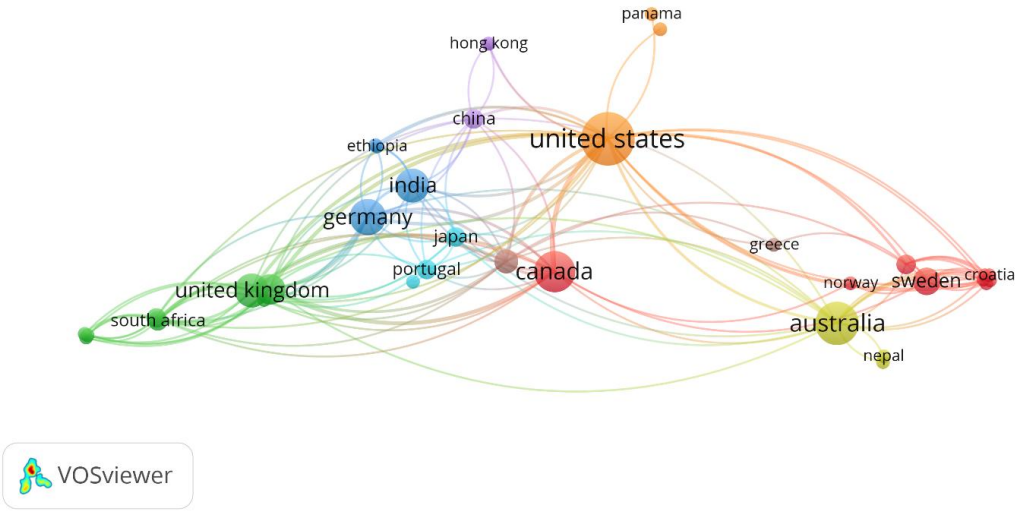

Figure 8. Country Visualization
Source: Data Processed, 2025

The country collaboration network visualization generated by VOSviewer illustrates international research partnerships in the blue economy and ocean sustainability fields. The nodes represent countries, with larger nodes indicating higher research output, while the connecting lines indicate co-authorship and collaboration strength between nations. The United States appears as the most dominant country, frequently collaborating with Canada, Australia, Germany, and the United Kingdom, highlighting its central role in global research networks. The United Kingdom and Germany form another strong collaborative group, engaging with India, Portugal, and South Africa, indicating European-led research efforts with developing nations. Similarly, Australia has strong links with Norway, Sweden, and Croatia, suggesting active research partnerships in marine and ocean sustainability. The presence of China, Hong Kong, and Ethiopia in the network reflects the expanding global participation in blue economy research.

4.2 Discussion

a. Key Trends in Blue Economy Research

The findings from the bibliometric analysis highlight a significant increase in research interest in the blue economy and ocean sustainability over the past decade. The rapid growth in the number of publications suggests a rising awareness of the economic and ecological potential of ocean-based industries. This trend aligns with global initiatives such as the United Nations Sustainable Development Goal 14, which aims to conserve and sustainably use ocean resources. The increase in research outputs is also reflective of the increasing policy discussions on marine resource management, ocean governance, and the economic valuation of marine ecosystems. The surge in scholarly attention suggests that the blue economy has evolved from a niche concept to a critical area of interdisciplinary research encompassing economics, environmental science, and governance.

b. Dominant Research Themes

The co-occurrence analysis revealed several key thematic clusters in blue economy research. The largest

cluster focuses on governance and policy, emphasizing how nations and institutions develop regulatory frameworks for sustainable ocean economies. Governance mechanisms such as marine spatial planning, integrated coastal management, and blue finance play a crucial role in ensuring that economic benefits do not come at the expense of environmental degradation. The prevalence of terms such as "sustainability," "governance," and "blue finance" suggests a growing recognition of the need for financial instruments to support sustainable marine industries. Furthermore, the presence of "equity" in recent studies indicates an emerging discourse on ensuring that blue economy benefits are distributed fairly, particularly among small-scale fishers and indigenous communities.

Another major research cluster revolves around marine policy and environmental economics. This area examines the economic valuation of marine ecosystem services and the trade-offs between economic development and conservation. Research in this domain highlights the importance of economic instruments such as carbon credits, blue bonds, and payment for ecosystem services in promoting ocean sustainability. Studies also discuss the role of technological advancements, such as remote sensing and artificial intelligence, in enhancing the efficiency of marine spatial planning and resource management. These findings indicate that the blue economy is increasingly being analyzed through an economic lens, where sustainability is seen as both an environmental necessity and an economic opportunity.

A third key research theme involves oceanography, biodiversity, and climate change. The presence of these terms in the analysis underscores the role of climate change as a major driver of blue economy discussions. Rising sea levels, ocean acidification, and habitat destruction pose significant threats to marine industries such as fisheries, aquaculture, and coastal tourism. As a result, researchers have focused on ecosystem-based approaches to mitigate these impacts, advocating for nature-based solutions such as marine protected areas, coral reef restoration, and mangrove conservation. These findings suggest that achieving a sustainable blue economy requires integrating ecological resilience into economic planning.

c. Country and Institutional Contributions

The country collaboration network highlights that blue economy research is highly concentrated in developed nations, with the United States, United Kingdom, and Australia leading the discourse. These countries have established strong research networks and collaborations, particularly in policy development, marine governance, and technological innovation. The dominance of Western nations in blue economy research may be attributed to their extensive coastlines, advanced research infrastructure, and economic capabilities to invest in marine sustainability projects. However, the presence of countries such as India, China, and South Africa in the network suggests a growing interest from emerging economies, particularly those with large coastal populations and significant reliance on marine resources.

The institutional analysis further supports this observation, with universities such as the University of Tasmania, University of Wollongong, and the University of British Columbia ranking among the

top contributors. The strong representation of Australian institutions indicates the country's leading role in blue economy research, likely driven by its vast marine resources and commitment to ocean governance initiatives. Additionally, the presence of international organizations such as the National Oceanic and Atmospheric Administration (NOAA) and Consiglio Nazionale delle Ricerche (Italy) highlights the role of government and intergovernmental agencies in shaping blue economy research agendas.

d. Emerging Research Directions

The overlay visualization provides insights into the temporal evolution of blue economy research. Older research topics (2021 and earlier) focused heavily on marine policy, environmental economics, and fisheries management, while more recent studies (2022–2023) have shifted towards themes such as blue finance, equity, and governance. This transition suggests that the research community is now exploring innovative financial mechanisms and governance models that promote sustainable and inclusive economic growth. The increasing focus on blue finance aligns with global efforts to integrate sustainability into economic planning. Financial instruments such as blue bonds and sustainable investment funds are gaining traction as viable tools to support marine conservation and responsible industry practices. The emergence of "equity" as a research theme highlights a growing recognition of the socio-economic dimensions of the blue economy, with scholars examining issues such as gender equality, labor rights, and indigenous participation in marine industries. Furthermore, climate resilience remains a major area of interest, with recent research exploring adaptive strategies for mitigating climate change impacts on marine industries. The integration of digital technologies, such as artificial intelligence, blockchain, and big data analytics, is also an emerging research frontier. These technologies have the potential to revolutionize ocean monitoring, fisheries management, and maritime logistics, enhancing the sustainability and efficiency of marine-based industries.

e. Challenges and Knowledge Gaps

Despite the rapid growth of blue economy research, several challenges and knowledge gaps remain. First, there is a need for more research on the effectiveness of existing governance frameworks. While many studies discuss marine policies and governance mechanisms, there is limited empirical evidence on their long-term impacts. Future research should focus on assessing the implementation and outcomes of blue economy policies, particularly in developing countries where regulatory enforcement may be weaker. Second, while the literature acknowledges the importance of financial instruments in supporting the blue economy, there is a lack of studies evaluating their scalability and accessibility. Many developing nations lack the financial infrastructure to implement blue bonds and other sustainable investment tools. Research should explore how these financial mechanisms can be adapted to different economic contexts and what policy interventions are needed to make them more inclusive. Third, the social dimensions of the blue economy require further investigation. The presence of "equity" as an emerging theme suggests that scholars are beginning to explore issues of social justice and inclusivity. However, more research

is needed to understand the socio-economic impacts of blue economy initiatives on marginalized communities. This includes examining gender disparities in marine industries, the rights of small-scale fishers, and the distribution of economic benefits among different stakeholders.

f. Citation Analysis

Table 1 . Top Cited Literature

Title and Author	Citations
The Blue Acceleration: The Trajectory of Human Expansion into the Ocean [32]	401
Blue Economy and Competing Discourses in International Oceans Governance [17]	315
Shades of blue: what do competing interpretations of the Blue Economy mean for oceans governance? [29]	254
The Blue Economy and the United Nations' sustainable development goals: Challenges and opportunities [6]	220
Global observing needs in the deep ocean [33]	208

Source: Scopus, 2025

5. CONCLUSION

The findings from this bibliometric analysis provide a comprehensive overview of global research trends in the blue economy. The rapid growth in scholarly output reflects the increasing recognition of the blue economy as a critical framework for sustainable development. Key research themes include governance and policy, marine policy and environmental economics, and climate change resilience. Developed nations dominate the research landscape, but emerging economies are becoming more involved in blue economy discussions. Recent studies suggest a shift towards blue finance, equity, and digital innovations, indicating new directions for future research. However, challenges remain, particularly regarding the effectiveness of governance mechanisms, the accessibility of financial instruments, and the social dimensions of the blue economy. Addressing these gaps will require interdisciplinary approaches that integrate economic, environmental, and social perspectives. By building on these insights, future research can contribute to the development of more sustainable, inclusive, and resilient ocean economies.

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