





Global Government Policies on Climate Change: A Bibliometric Analysis

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ABSTRACT

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Climate change is a global challenge that is complex and has wide-reaching impacts. Governments play an essential role in tackling climate change through adaptive policies and promoting the development of environmentally friendly alternatives. In addition, global researchers are also required to contribute through research results on government policies on climate change issues. That encourages this study to analyze global research results related to government policies on climate change issues. This study uses bibliometric analysis with data from the Scopus database, chosen because of its high standards in global acceptance of journals and research documents. The analysis was primarily carried out using Vosviewer with a focus on co-occurrence, alongside manual visualization of the Scopus database, to provide a more complete picture of trends, collaboration patterns and research impact on government policy and climate change in the social sciences. The findings of this study indicate that research results provide an essential basis for the government to make more adaptive and effective policies for mitigation and adaptation actions related to climate change. This study also found several research gaps that other global researchers in the future could explore. Research gaps can guide further research in poorly understood areas, strengthening the understanding of climate change and broadening existing knowledge. It is also helpful in initiating an idea that stakeholders, especially the government, can study. However, this study also found an imbalance in the number of published documents by researchers outside American and European affiliates. This study encourages research results from other researchers, especially those affiliated with Asia and Africa. It can help find a new perspective.

1. INTRODUCTION

The issue of climate change is essential because it impacts many aspects of human life and the environment around the world [1]. Climate change occurs due to increased greenhouse gas emissions, caused mainly by human activities such as burning fossil fuels and deforestation [2]. The impacts of climate change include rising global temperatures [3], rising sea levels [4], increased occurrence of natural disasters such as floods and droughts [5], and loss of natural habitats for various living species [6]. It can also impact food and water production [7], human health [8], and the global economy [9].

Overcoming climate change requires global and collaborative action involving government, the private sector, and civil society [10]. It helps reduce greenhouse gas emissions [11], promotes renewable energy [12], conserves natural resources [13], and develops technologies that are more environmentally friendly [14]. If no action is taken, the impacts of climate change may become more severe and difficult to correct in the future [15]. Therefore, it is essential to take action to protect and improve the quality of human life. It requires a serious response from the government, especially in adaptive policies [16].

Government policies are elemental in dealing with various environmental issues, including the issue of climate change. Government policies play an essential role in establishing the legal, regulatory, and incentive frameworks to promote behavior change and more sustainable societal practices [17]. Governments can also promote greener technologies [18], provide funding for research and development initiatives [19], and strengthen the infrastructure that supports sustainable practices, such as renewable energy [20], public transport [21], and recycling [22].

Many previous researchers have carried out studies on climate change and related policies. However, there are still very few critical studies on global policy aspects. There still needs to be more research that concentrates on evaluating and mapping the available research documents, especially on bibliometric analysis. However, several other studies are considered relevant to support this study. *First*, effective and sustainable government policies are the key to addressing various climate change challenges [23]. *Second*, the problem of climate change policies not working optimally can be caused by several factors, such as the inability to create a practical, integrated, and adaptive policy framework for rapid changes [24], lack of support from the public [25] and the

private sector [26]. *Third*, bibliometric analysis helps map research results and identify trends and gaps in research on environmental policies and issues [27], including the issue of climate change [28].

Overall, efforts to overcome climate change require global cooperation and adaptive policies from governments. Government policies are essential in establishing legal, regulatory and incentive frameworks to encourage behavioral change and more sustainable social practices. Natural and sustainable action is needed from all sectors of society to protect and improve the quality of human life and mitigate the increasingly debilitating impacts of climate change. Bibliometric analysis can help map research trends, identify knowledge gaps, and guide more focused research directions to support effective and sustainable development policies in facing the challenges of climate change.

The aim of research on government policies and climate change is to increase understanding of how governments can respond to climate change challenges and develop effective policies through the results of searching global research documents on policies on climate change issues. The research questions are mapped as follows. (a) How is the mapping of the development of research trends on government policies related to climate change on a global scale? (b) What are the relationships between the different research topics, and what are the gaps for future research? Both of these questions are useful for helping and understanding the main issues being debated and the latest research trends, as well as assisting in determining the direction of further research. It can also be a consideration for the government in formulating a policy.

2. METHOD

This study uses bibliometric analysis. The data source comes from the Scopus database. Scopus was chosen because it is one of the most popular indexers globally and has high standards in accepting research journals and documents. Data was collected using filtering techniques based on keywords, year of publication, and subject area. The keywords used are (government policy) and (climate change). The publication year limitation is (2018-2022). Focus on a particular subject area (social sciences). The author chose the 2018-2022 range because this period covers the most recent period, which is relevant to government policy issues and climate change. This period makes it possible to capture relevant trends, policies and recent research in the social science domain, which is the focus of this study. The results of the filtering found 1,925 documents. This number is then analyzed in this study. The analysis of this study maximizes analyzing search results from the Scopus website. It helps to visualize the collected data.

This study also maximizes and relies on analysis tools such as Vosviewer. Vosviewer is used to host 1,925 documents. The use of Vosviewer is maximized by using the type of analysis, namely Co-occurrence with the unit of analysis, namely All-keywords. Co-occurrence focuses on word pairs that appear together in documents. Co-occurrence within Vosviewer helps discover and model networks with nodes representing words and edges (lines). Meanwhile, an analysis unit such as All-keywords treats all words in a document as the essential elements of analysis. The types and units of analysis function to build networks with nodes representing words and edges that connect nodes representing pairs of words appearing in the same document.

Data visualization does not only rely on analysis results from Vosviewer but also utilizes manual visualization available in the Scopus database. This includes information such as the number of documents per year, the distribution of documents by author affiliation, and the number of citations each document received. Combining this visualization provides a more comprehensive picture of publication trends, collaboration patterns, and the impact of scientific work in the scope of research on government policy and climate change in the social sciences. Data visualization from Scopus and Vosviewer helps map the development of research trends related to government policies in dealing with global climate change. It also reveals connections between various research topics and identifies gaps for future research in government policy and climate change in the social sciences.

3. RESULTS AND DISCUSSION

3.1 Research trends on government policies related to global climate change

It is essential to see research trends on government policies related to climate change on a global scale. This is because climate change is one of the most critical issues facing humanity in this century. Its broad and severe impact on human life, nature, and the economy urgently requires proper and effective attention and action from the government. This section explicitly describes research development trends based on the number of documents by year of publication and the number of citations by authors. The trend of published documents based on the year of publication is observed as follows:

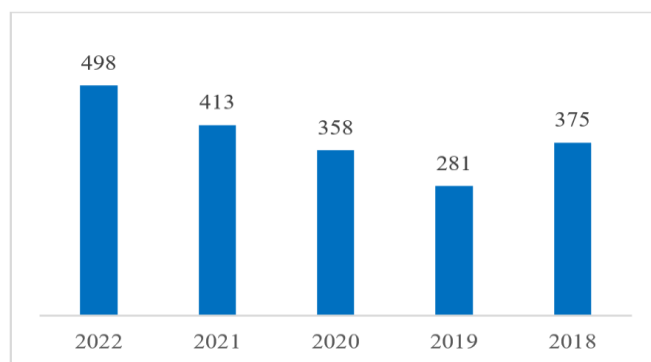


Figure 1. Trends in the number of published documents

Figure 1 shows that the publication of government policies related to climate change has experienced a significant trend in the number of published documents. Since 2018, 375 published documents have been found, but the number decreased in 2019, namely 281 documents. After that, 2020 experienced a positive publication trend, marked by 358 published documents. This will continue in 2021, namely the addition of publication documents to 413 documents.

In recent years, the issue of climate change has increasingly become a global concern, especially for researchers. The issue of climate change has become a global concern in recent years, which is reflected in researchers' awareness of this issue. Many researchers from various disciplines, especially in the social sciences, have studied the impacts of climate change and how to deal with these impacts. By increasing the number of

published documents related to climate change issues and government policies, the public can better understand climate change and the actions that must be taken to address its impacts. Apart from that, these documents can also help the government to evaluate its policies and determine the next steps in addressing the issue of climate change.

Some examples of actions taken by global researchers regarding climate change issues include publishing reports and studies on the impacts of climate change and researching renewable and innovative technologies to reduce greenhouse gas emissions. Global researchers have developed and tested renewable technologies, such as solar power, wind power, and hydrogen fuel cells, and identified new ways to reduce emissions from industry, transportation, and other sectors. In addition, the actions taken by global researchers are by assessing government responses and policies related to climate change [29]. Global researchers have evaluated government policies and analyzed the impacts of these policies on society and the environment. It also provides recommendations for improving those policies.

Actions taken by global researchers are also carried out by identifying and analyzing challenges and opportunities related to climate change. Global researchers have identified challenges society and the environment face, particularly government responses in formulating adaptive policies. It helps reduce risk and increase resilience. In addition, encouraging dialogue and collaboration between researchers, government, and civil society is also a rational choice [30]. Global researchers are essential in facilitating dialogue and collaboration between various parties to resolve climate change issues.

Global researchers' awareness of climate change is essential in understanding and dealing with its impacts. Research conducted by global researchers can make a significant contribution to determining the steps to be taken to tackle climate change and protect the environment and society. Many governments worldwide have started to take action to address the impacts of climate change, including by implementing policies related to this matter [31]. Increasing the number of published documents related to climate change issues and government policies can provide a better understanding of how the government is dealing with this issue and how these policies can affect society and the environment.

Overall, research trends on global government policies related to climate change show a significant increase in researchers' awareness and engagement with these issues. From an overview of the number of published documents, it can be seen that since 2018, interest in climate change issues and related government policies has increased substantially, reflected in the number of publications. Global researchers from various disciplines, especially in the social sciences, have contributed to understanding the impacts of climate change and efforts to address them. These actions include preparing reports, researching renewable technologies, evaluating government policies, and identifying challenges and opportunities related to climate change. The active participation of global researchers is essential in encouraging dialogue and cooperation between governments, civil society and various related parties to overcome the challenges of climate change. By increasing the number of publications related to these issues, society and governments can better understand the strategies and policies that can be taken to deal effectively with the impacts of climate change.

In addition to the trend of increasing the number of

published documents based on the year of publication, another trend is affiliation by country.

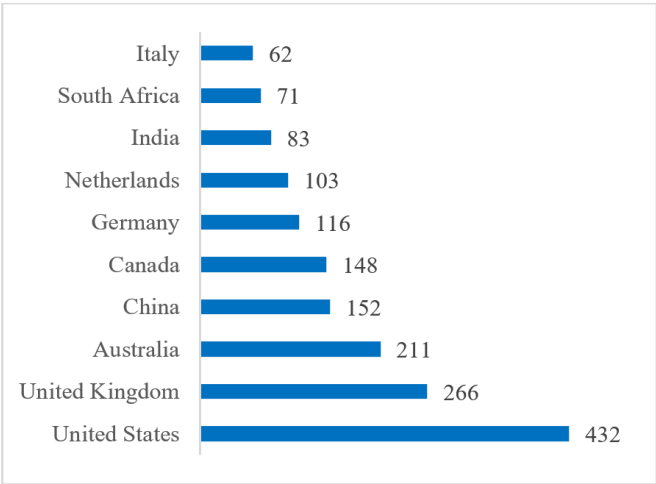


Figure 2. Publication trends by country affiliation

Figure 2 shows that the trend of affiliation by country is the most active in producing scientific publications on climate change issues and government policies, namely the United States and several other countries. Based on Scopus data, the United States has produced 432 published documents during the 2018-2022 period. That makes the United States dominant in analyzing climate change issues and government policies. This significant contribution certainly greatly influenced the responses and perspectives of other global researchers. It also provides a better understanding of how the government is addressing this issue and how these policies may affect society and the environment.

Apart from the United States, several affiliated countries have contributed and are actively producing scientific publications on climate change issues and government policies during the 2018-2023 period, namely the United Kingdom with 266 document contributions, Australia with 211 documents, and China with 152 documents, Canada with 148 documents, Germany with 116 documents, Netherlands with 103 documents, India with 83 documents, South Africa with 71 documents, and Italy with 62 documents. This data also found that there was a lack of published documents from researchers affiliated with countries in the Asian and African Regions. This study suggests expanding the reach of publications, particularly in Asia and Africa. It may influence future publication trends, particularly global perspectives on climate change issues and government policies.

Figure 2 also highlights the active involvement of various countries, notably the United States, in producing scientific publications concerning climate change issues and government policies. The dominance of the United States in this area, evidenced by its substantial contribution of 432 published documents from 2018 to 2022, underscores its pivotal role in shaping global perspectives and responses to climate change challenges. However, the study also identifies a notable lack of published documents from researchers affiliated with Asian and African countries, indicating an imbalance in representation. To address this gap, the study recommends expanding the reach of publications, particularly in regions such as Asia and Africa. By encouraging more productive contributions from diverse geographical affiliates, the research community can explore new perspectives and

stimulate responses to climate change and government policies on a global scale. Nonetheless, the study acknowledges limitations, including reliance on specific databases and centralized data filtering, suggesting avenues for further research to broaden perspectives and insights in this critical field.

Research trends on government policies related to climate change on a global scale can provide a better understanding of the efforts made by governments around the world in tackling climate change. This research can help identify the successes and weaknesses of the implemented policies and help formulate more effective and efficient policies in the future. Research trends can also direct attention to issues most important in climate change policy, such as mitigation and adaptation to climate change impacts. Thus, research trends can provide a broader and deeper view of the issue of climate change and make an essential contribution to public policy in the future.

Table 1 overviews the ten most frequently cited documents in the analyzed literature. The table aims to highlight works that have significantly impacted government policy and climate change research in the social sciences. The selection of these ten articles could be due to several factors, including the relevance of the topic, contribution to the understanding of critical issues, novelty of the ideas or findings presented, and recognition of the superiority of the methodology or analysis used. For example, articles discussing land use policy adaptation strategies, urban flood management in China, and farmers' risk perceptions and adaptation to climate change in Pakistan demonstrate the diversity of issues relevant in global and regional contexts. Thus, the table provides valuable initial insight into the focus and essential contributions of the leading literature in the research area being studied.

Table 1 shows several publication documents published in 2018-2022 that are most frequently cited in studies on climate change and government policies. Publication documents on climate change and government policies are essential to be cited by other documents. There are several reasons why a published document is essential to be cited by other documents, namely that the document has the results of in-depth research and analysis, becomes a reliable reference, helps increase visibility and recognition, and can strengthen policy support and influence. Document citation is an assessment of the development of the study or topic discussed in the document [32].

Publication documents on climate change and government policies often provide in-depth research and analysis. The document contains research results that can form the basis for

further research and policy development. Quality published documents have a strict peer review process so that they can be used as reliable references in research and policy development [33]. Therefore, the citation of relevant published documents can provide trust and credibility to the research and policies developed.

The more frequently a published document is cited by other documents, the higher the visibility and recognition it will get for the author and related institutions [34]. This can enhance the academic and professional reputation of the authors and the institutions involved. Widely cited published documents can help strengthen the support and influence of policies proposed by governments. Citation by relevant published documents can provide a solid basis for formulating and implementing effective policies in tackling climate change.

3.2 The relationship between the different research topics and how future research gaps

Each research topic is related and can influence the development of further research [35]. Some of the relationships or links between different research topics are as follows:

Figure 3 shows that there are research topics that are incorporated in each topic cluster that are interrelated in the study of climate change and government policy. In the *first cluster* there are several topics that are strongly interrelated including; Climate change, decision making, policy making, governance approach, local government, climate effect, climate change adaptation, adaptive management, vulnerability, and resilience. In the *second cluster* there are several topics that are strongly interrelated including; Environmental policy, mitigation, greenhouse gas, and carbon emission. In the *third cluster* there are several topics that are strongly interrelated including; Sustainable development, alternative energy, renewable energy, energy policy, innovation, and stakeholders.

In the *first cluster*, climate change and decision-making have a close relationship because climate change that occurs requires appropriate and effective decisions to deal with the impacts that arise [36]. For example, when an area is affected by climate change, such as extreme floods or droughts, the government needs to decide to deal with the problem [36]. For example, when an area is affected by climate change, such as extreme floods or droughts, the government needs to decide to deal with the problem [37]. The existence of climate change requires effective policies and regulations to reduce its impact. Policies and regulations can be in the form of regulations [38].

Table 1. Top 10 frequently cited publication documents

Document Title (Year)	Cited
Strategic adjustment of land use policy under the economic transformation (2018)	304
Urban pluvial flooding and stormwater management: A contemporary review of China's challenges and "sponge cities" strategy (2018)	223
Seven lessons for planning nature-based solutions in cities (2019)	214
Renewable energy for sustainable development in India: Current status, future prospects, challenges, employment, and investment opportunities (2020)	191
Decarbonizing Bitcoin: Law and policy choices for reducing the energy consumption of Blockchain technologies and digital currencies (2018)	161
The role of green and blue hydrogen in the energy transition-a technological and geopolitical perspective (2021)	145
Farmers' risk perception, vulnerability, and adaptation to climate change in rural Pakistan (2018)	143
The threat of political bargaining to climate mitigation in Brazil (2018)	136
Karst landscapes of China: patterns, ecosystem processes and services (2019)	135

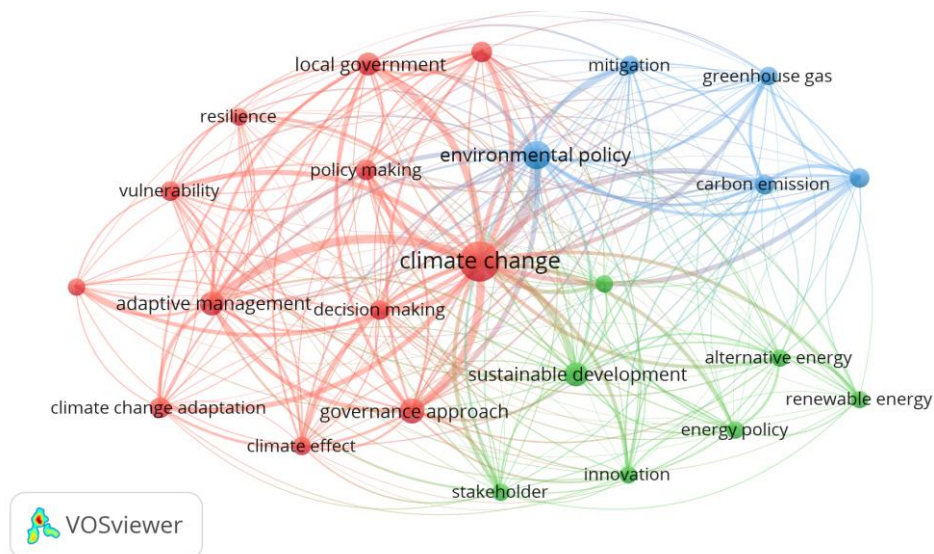


Figure 3. The relationship between the different research topics

The relationship between climate change and the governance approach is closely related because climate change requires an appropriate and effective governance approach to deal with its impacts [39]. The governance approach refers to how policies and decisions are made and implemented by governments and other organizations [40]. In the context of climate change, a governance approach can involve various sectors, including government, the private sector, and civil society [41]. This requires close involvement and collaboration between various parties to develop effective policies and programs. In addition, a governance approach can also include cross-sectoral collaboration to develop new technologies and innovations in increasing adaptation to climate change [42]. With the right governance approach, it is hoped that adequate policies and programs will be created to address the impacts of climate change holistically and sustainably.

Climate change and local government have a close relationship because climate change impacts occur at the local level and require local action to reduce their impacts [43]. Local governments can develop policies and programs that focus on increasing energy efficiency [44], using renewable energy, reducing greenhouse gas emissions from vehicles, and waste and waste management [45]. In addition, local governments can also promote the development of sustainable transportation, such as public transportation that is more environmentally friendly. However, it urgently requires policy coherence across governance levels [46]. Thus, local governments have an essential role to play in reducing the impact of climate change and ensuring environmental sustainability and social welfare at the local level.

Climate change, climate effect, and climate change adaptation are closely related topics related to the impact of human activities on the earth's climate [47]. Climate change and adaptive management are related topics because adaptive management is a strategy used to address the impacts of climate change [48]. Adaptive management is an iterative process that involves monitoring the impact of management actions and adjusting the approach as new information becomes available [49]. This approach is used in natural resource management to address complex and uncertain environmental problems, including climate change [50].

Climate change and other topics, such as vulnerability and

resilience, are closely related [51]. Vulnerability refers to the extent to which a system or community is vulnerable to hazards from climate change [52]. Vulnerability is influenced by various factors, including social, economic, and political conditions, as well as geographic location and environmental conditions [53]. For example, low-income communities and communities located in coastal areas or areas prone to drought or flooding may be especially vulnerable to the impacts of climate change [54]. Resilience, on the other hand, refers to the capacity of a system or community to adapt and recover from the impacts of climate change [55]. Building resilience involves implementing strategies and actions that help communities become better prepared to deal with the impacts of climate change and recover quickly from extreme events [56].

In the *second cluster*, several topics are strongly interrelated, including; Environmental policy, mitigation, greenhouse gas, and carbon emission. Climate change is primarily caused by releasing greenhouse gases, such as carbon dioxide, methane, and nitrous oxide, into the atmosphere. These gases trap heat from the sun and cause the earth's temperature to increase, leading to various environmental impacts, including rising sea levels, more frequent and severe weather events, and changes in ecosystems, impacting agricultural production [57].

Environmental policy refers to laws, regulations, and other measures enacted by governments and other organizations to address environmental problems, including climate change [58]. Mitigation refers to actions taken to reduce or prevent greenhouse gas emissions and includes strategies such as increasing energy efficiency, switching to renewable energy sources, and adopting sustainable land use practices [59]. Greenhouse gases, particularly carbon dioxide, are a significant driver of climate change, and efforts to reduce emissions are critical to mitigating their impact. Carbon emissions release carbon dioxide and other greenhouse gases into the atmosphere, mainly by burning fossil fuels for energy and transportation [60]. Effective policies are essential to tackling climate change and reducing carbon emissions. Governments and other organizations can adopt more adaptive policies to support this.

In the *third cluster*, several topics are strongly interrelated, including; Sustainable development, alternative energy, renewable energy, energy policy, innovation, and stakeholders.

Climate change and sustainable development are closely related because both are global issues requiring various parties' attention and action. Sustainable development is needed to overcome climate change and promote survival [61]. This includes various aspects, such as economic, environmental, and social [62]. Therefore, to achieve sustainable development goals, it is necessary to develop alternative energy and energy policies that are innovative and environmentally friendly. Alternative energy or alternative energy refers to energy sources different from fossil fuels, such as solar energy, wind, and water [63]. The development of alternative energy can help reduce greenhouse gas emissions and overcome climate change [64].

An appropriate and innovative energy policy is needed to achieve the effective development of alternative and renewable energy. Energy policy or energy policy includes various policies and actions to regulate the production, distribution, and consumption of energy [65]. Good energy policies can encourage the development of alternative and renewable energy and reduce greenhouse gas emissions [66]. Innovation is also essential in achieving sustainable development and tackling climate change [67].

Topics such as stakeholders are also considered essential in sustainable development and addressing climate change. Stakeholders include various groups, such as governments, companies, civil society, and international organizations. All stakeholders must work together to achieve sustainable development goals and tackle climate change [68].

Of the three clusters (Figure 3), several different but related topics exist. From each of these clusters, several topics are rarely researched. These topics still require more exploration from researchers in linking studies on climate change with government policies. Some of these future research gaps are seen in Figure 4.

Figure 4 shows that among interrelated research topics,

there are still some topics that are still relatively new. Research topics continue to experience development trends. Some topics have often been studied in other cases, but when it comes to climate change and government policies, it is considered that they have yet to be explored much by global researchers. It became a gap for future research. Some new research topics have been identified, including Vulnerability, resilience, local government, alternative energy, and renewable energy. It is known that this topic has been researched recently and is not popular in climate change studies with government policies.

Government policies on climate change can be linked to vulnerability and resilience in several ways. *First*, the government can encourage communities to build resilience to the impacts of climate change through various programs and policies such as the provision of clean water [69], education about disasters [70], and sustainable spatial planning [71]. *Second*, governments can design and implement policies that strengthen infrastructure resilience to climate change's impacts, such as floods, strong winds, or drought [72].

Third, governments can reduce people's vulnerability to climate change through various policies such as sustainable agricultural development [73], safer housing [74], or increased access to health services [75]. This policy can help strengthen people's ability to cope with natural disasters and the effects of climate change. *Fourth*, the government can design policies to reduce greenhouse gas emissions, clean energy, and reduce the use of fossil fuels by switching to electric vehicles [76] or implementing green technology [77]. Resilience and vulnerability are essential in government policies related to climate change because the impact on society and the environment is enormous. By promoting resilience and reducing vulnerability, governments can help societies cope with the impacts of climate change and create a more sustainable future.

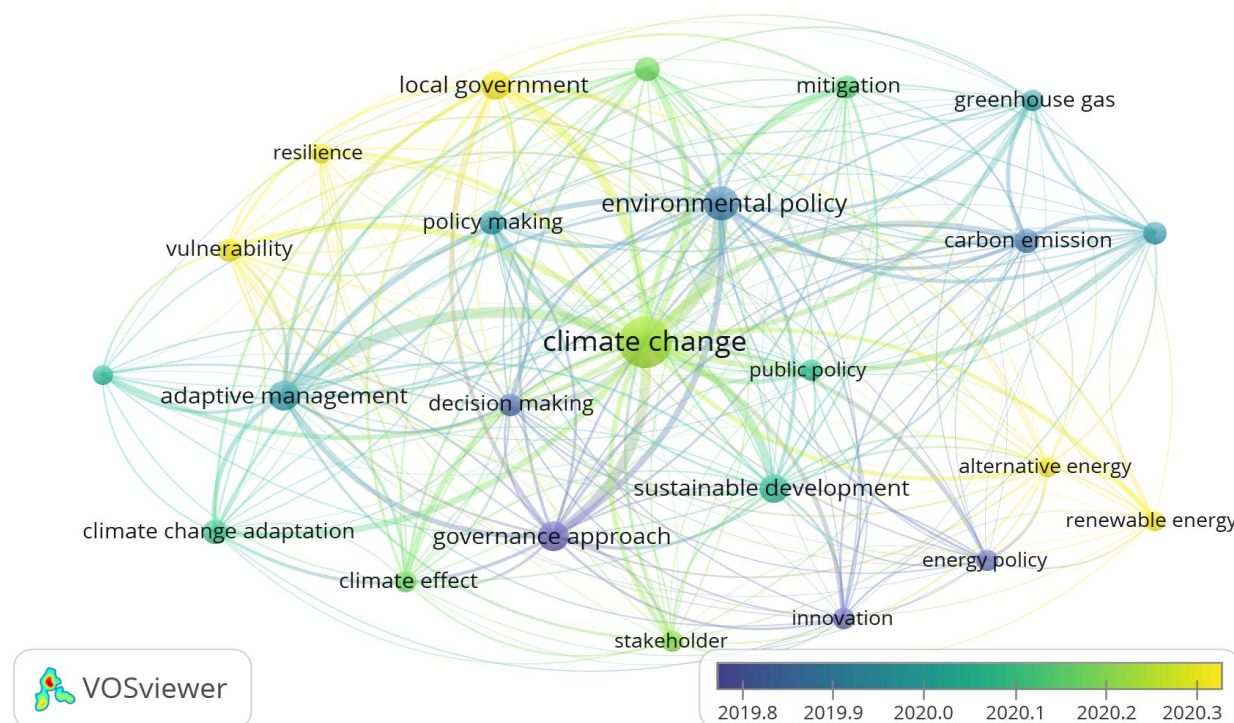


Figure 4. Future research gaps

Government policies related to climate change can be linked to the role of local government. Some examples of government policies in this regard include: Education and community participation, building green infrastructure, and reducing vulnerability to natural disasters [78]. The government can increase public awareness about climate change and invite the public to participate in programs aimed at reducing the impact of climate change. Governments can also build green infrastructure in their areas, such as urban forests [79] and drainage systems [80]. Local governments should also think about ideas about alternative energy and renewable energy. It is beneficial to encourage the use of renewable energy [81].

From the data trend and explanation above, it is known that these new research topics require more exploration. It also provides a strong argument that future research gaps are essential because they can form the basis for further research focusing on areas that have yet to be extensively researched or fully understood, especially when linking climate change issues to government policies. Identifying research gaps can help researchers define relevant research topics and pursue more specific and detailed research questions. In addition, findings from research that fill research gaps can significantly contribute to understanding a particular case and broaden the scope of existing knowledge. This can help strengthen mitigation and adaptation policies and actions related to climate change in the future.

Thus, analyzing the relationships between different research topics highlights the complexity of the challenges of climate change and government policy. The interconnectedness of these topics reveals that several topics need to be widely explored in global studies, such as vulnerability, resilience, local government, alternative energy, and renewable energy. Identifying these research gaps provides a strong foundation for more in-depth and comprehensive future research.

The recognition of the need for further exploration of these topics underscores the importance of future research in exploring the relationship between climate change and government policy. Identifying research gaps can help researchers determine relevant topics and pursue more specific research questions. Additionally, findings from research that fill these gaps can significantly contribute to understanding specific cases and expand the scope of existing knowledge. This can help strengthen mitigation and adaptation policies related to climate change in the future, hoping to prepare the world for increasingly pressing environmental challenges.

Identifying and filling research gaps in the relationship between climate change and government policy provides substantial benefits for future understanding and action. By exploring underexplored topics, future research can provide new insights and a deeper understanding of the complexity of environmental and public policy challenges. These findings can help formulate more effective mitigation policies and targeted adaptation strategies and strengthen holistic and sustainable policy frameworks. Additionally, a better understanding of the relationship between climate change and government action can spur technological innovation, motivate cross-sector cooperation, and accelerate the transition to a sustainable economy. As such, future research that addresses these gaps will hopefully play an important role in shaping a better future for our planet and future generations.

4. CONCLUSION

This study finds that the interest of global researchers is

currently trying to analyze several existing policies that can be the basis for policies or considerations of governments around the world. Climate change is a complex global challenge and broadly impacts various aspects of human life. Governments play an essential role in tackling climate change through adaptive policies and promoting the development of alternative and environmentally friendly policies. In this case, the results of research documents can provide an essential basis for the government to make more adaptive and effective policies for mitigation actions related to climate change. Identifying research gaps can also help direct further research into poorly understood areas, strengthening understanding of climate change and broadening the scope of existing knowledge.

This study also found an imbalance in the number of published documents outside American and European affiliates. These findings encourage research results from other affiliates, especially those affiliated with Asia and Africa, to be more productive. It could help find new perspectives and influence the response of other global researchers to develop future studies on climate change and government policies. The response of global researchers is needed to initiate the next research challenge. This could be an asset for stakeholders to study, especially the government. The limitation of this study lies in the use of specific databases and does not consider other databases. Another limitation also lies in centralized data filtering. This can be considered for further research to explore this matter further; it can help find new perspectives that are much broader.

In addition to the identified limitations, this study faces other noteworthy limitations. First, using a particular database in the analysis may limit the scope of the data and affect the geographic representation and variety of topics available. In future developments, research may consider including additional databases and more diverse approaches to data collection to achieve a more comprehensive understanding. Furthermore, although the research successfully identified gaps in the global literature on climate change and government policy, it needs to be acknowledged that understanding of this issue continues to evolve and is dynamic. Therefore, future research directions could broaden understanding of the social, economic, and environmental implications of government policies related to climate change. In addition, research can further explore innovative and collaborative solutions that involve various stakeholders in holistically addressing the challenge of climate change. Thus, a deeper understanding of the dynamics of interactions between government policy and climate change can provide a solid foundation for adaptive and effective policymaking in the future.

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