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Article

Green Economic Development: A Systematic Literature Review

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Abstract: This article explores the development of green economy research topics and issues. Using the Systematic Literature Review (SLR) method and data analysis using the VOSviewer application on 482 articles from Scopus, the study found that Wang J. is the most prolific researcher contributing to the issue of environmental pollution, carbon emissions, and green tourism. Companies facing financial performance bottlenecks due to green innovation can address this issue by increasing executive equity incentives and reducing the pay gap between management and employees. New researchers such as Ozturk I., Ullah S., Li X., and Wu H. contribute to green innovation and agriculture, finding that reduced pesticide use does not lower agricultural productivity. Globally, China successfully implemented a green economy through strict environmental regulations and large investments in renewable energy. Topic cluster analysis revealed that Economic Growth and Circular Economy are the main issues, while Price, Barrier, Green Practice, Financial Inclusion, and Green Development are the focus of recent studies, especially in the application of green bonds and financial inclusion. These developments form a strong basis for the implementation of green economy concepts globally.

Keywords: Green Economy, Systematic Literature Review, Development, Vosviewer, Database Scopus

1. Introduction

The green economy is a concept that is gaining increasing global attention as a response to the environmental and economic challenges facing the world today. This concept is increasingly becoming a fundamental policy in sustainable development (Kinda, 2021). In an era of climate change uncertainty and concerns over the sustainability of natural resources, the green economy has become an attractive solution (Arin Setiyowati et al., 2023). It represents a new economic paradigm that focuses on sustainable growth, a clean environment, and efficiency in natural resource utilization.

The certainty of its policies will always have a good impact on the country's economy, and vice versa (Ma et al., 2022). It should also be understood that the complexity of economic problems between dynamic economic growth and preserving the natural environment in the long term has not been able to be overcome by any country (Steblyanskaya et al., 2021). So in practice, there are often conflicts between policies and regulations from the government such as environmental licensing and permits, and agricultural regulations and pesticide use. As a result, the sustainability values of the green economy are difficult to achieve. As happened in the UK, which needs to review policies regarding the green growth potential of carbon capture and storage (CCS) because it triggers job losses (Turner et al., 2022).

In recent decades various countries and companies have initiated steps towards a green economy by incorporating sustainable economic practices and green technologies into their economic strategies. A number of previous studies have examined various topics and issues related to the Green Economy. Pliavskyiy (2021), revealed that some countries

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are concerned and believe that shifting the economy towards a green economy may hinder the development of the country due to the different instruments and principles of the green economy of each country (Pliavskyiy et al., 2021). Research by Liu (2022) in China, that the expansion of financial inclusion can contribute to the improvement of green economy skills (Z. Liu et al., 2022). Furthermore, research conducted by Kinda (2021), that green economy indicators have a controversial impact on food security (food availability and proportion of malnourished population) in 35 African countries. Biofuels contribute to a decrease in food security, while renewable energy increases food security and carbon dioxide emissions have no effect on food security (Kinda, 2021). Mazina's research (2022), the challenge of implementing policies towards zero carbon emissions and renewable energy is to overcome status quo obstacles to build a new geo-political and economic system in Kazakhstan. Political and economic challenges remain despite a vision for 2050 influenced by the Green Economy (Mazina et al., 2022). Morris' (2022) research analyzing industrial policy failures in South Africa concluded that green strategies should be mainstreamed in industrial policy (Morris et al., 2022). Although the green economy has many positive contributions such as the financial inclusion program, some countries also have concerns about the presence of the green economy with its various consequences such as biofuels. Against this concern, the government needs to evaluate every program that puts forward green economy principles so that this concept remains in line with the value of its presence in the midst of a country's political and economic challenges.

Although many previous studies have reviewed the green economy, not many have adopted the Systematic Literature Review (SLR) approach and the VOSviewer application in analyzing it. Therefore, this research focuses on exploring the green economy by using the SLR approach through data analysis of the VOSviewer application. The SLR approach is an approach to collecting and evaluating related studies on a particular topic (Triandini et al., 2019), which enables a more systematic understanding of research topics and themes.

The focus in this research study leads to efforts to answer the question of how the development of topics and research issues on Green Economy. The research method is Systematic Literature Review (SLR) with VOSviewer Data Analysis Software. The study category consists of several categories which are standard in writing articles using VOSviewer, namely researchers (Author), Country, topic cluster (Network Visualization), topic discussion time (Overlay Visualization), and dominant topics (Density Visualization). This research contributes to the direction of green economy research development such as determining topics and issues. In addition, it can also be used as a reference for the development and government policies related to the economic transition to a green economy such as analyzing the impact of environmental policies.

2. Materials and Methods

This research uses the Systematic Literature Review method. The Systematic Literature Review (SLR) research method is a scientific methodological approach that summarizes the results of primary research systematically to present more comprehensive and balanced facts. This method was used because in this study researchers sought to reveal how the development of green economy topics and issues based on the results of research systematically.

The research phase began with determining the research topic. The data was centralized in the Scopus database with two keywords, namely "Development" and "Green Economy", which are intended to select articles based on the concept of green economy as a sustainable economic paradigm. After the data was obtained, the data was then selected based on the years 2013 to 2022, so that 482 documents were obtained (table 1). The last 10 years were taken so that they could be analyzed in depth and breadth.

Table 1. Document Selection

2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
0	0	0	4	11	30	52	54	110	221
482									

Source: Database Scopus

Data as many as 482 documents were exported in the form of ris and CSV, then analyzed using the VOSviewer application. The VOSviewer application analysis focuses on 5 stages, namely Researcher (Author), Country (Countrie), Topic Cluster (Network Visualization), Recent Topics (Overlay Visualization), and Dominant and Non-Dominant Topics (Density Visualization). Researcher analysis to see the involvement and contribution of researchers to the topic of green economy, Country analysis to see the magnitude of the country's attention to the topic of green economy. While the Latest Topic analysis to analyze the novelty of the topic and the oldest topic, and the analysis of dominant and non-dominant topics to see the most frequently discussed topics and research issues. After that, it is described in the form of results and discussion, then given a conclusion (chart 1).

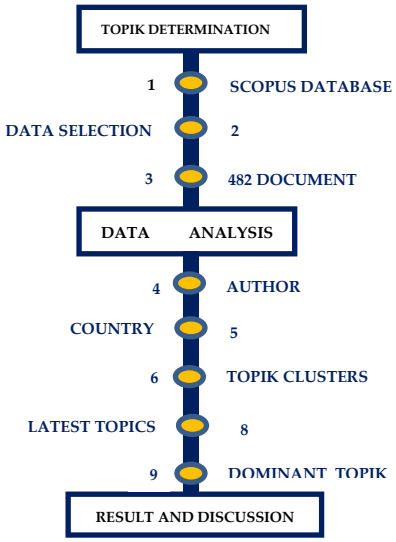

Chart 1. Research Stages

3. Results

a. Author

Researchers included in this research count are researchers who have at least 3 articles on the Green Economy in the Scopus database. VOSviewer data processing results show that there are 9 clusters with a total of 18 researchers. The highest number of articles is 7 documents owned by Tsai, sang-bing. The second most is owned by wang, jiangtao with 5 articles. The rest vary, some have 4 to 3 articles. The highest number of citations is owned by Liu, nana with 139 citations. The majority of authors are only connected to internal clusters and none are interconnected between clusters (Table 2). The author

relationship can be caused by co-authoring a scientific article published in the Scopus database.

Table 2. Number of Articles, Citations, and Researcher Relationships

Author	Document	Citations	Total Link Strenght	Klaster	Writing Relationship	
					Internal Klaster	Eksternal Klaster
Bilgaev, alexey	4	45	16	1	Dong, suocheng; Sadykova, erzhena; Li, fujia; Mikheeva, anna	-
Dong, suocheng	4	45	16	1	Bilgaev, alexey; Sadykova, erzhena; Li, fujia; Mikheeva, anna	-
Li, fujia	4	45	16	1	Bilgaev, alexey; Sadykova, erzhena; Dong, suocheng; Mikheeva, anna	-
Mikheeva, anna	4	45	16	1	Bilgaev, alexey; Sadykova, erzhena; Dong, suocheng; Li, fujia	-
Sadykova, erzhena	4	45	16	1	Bilgaev, alexey; Mikheeva, anna; Dong, suocheng; Li, fujia	-
Tsai, sang-bing	7	86	14	2	Wang, jiangtao; Liu, aijun; Lu, hui; Li, guodong	-
Wang, jiangtao	5	60	12	2	Tsai, sang-bing; Liu, aijun; Lu, hui; Li, guodong	-
Liu, aijun	3	38	9	2	Tsai, sang-bing; Wang, jiangtao; Lu, hui; Li, guodong	-
Lu, hui	3	38	9	2	Tsai, sang-bing; Wang, jiangtao; Liu, aijun; Li, guodong	-
Li, guodong	3	26	8	2	Tsai, sang-bing; Wang, jiangtao; Liu, aijun; Lu, hui	-
Liu, chuanzhe	4	137	2	3	Liu, nana	-
Liu, nana	3	139	2	3	Liu, chuanzhe	-
Fang, zhong	3	71	0	4	-	-
Liu, weijiang	4	47	0	5	-	-
Liu, yanhong	3	93	0	6	-	-
Sun, huaping	3	57	0	7	-	-

Wang, wei	3	57	0	8	-	-
Zhu, yue	3	67	0	9	-	-

Source: VOSviewer data processing

At the next stage is about the novelty of the researcher. Researcher novelty is intended to analyze the latest researchers based on the results of VOSviewer data processing. Based on the results of the analysis that the researcher on behalf of Ozturk i., Ullah s., Li x., Wu h., is classified as the latest researcher in 2022. The focus of the topics they raise is on agriculture and CO2 emissions (Zhou et al., 2022), and environmentally friendly innovation (L. Liu et al., 2022). Other researchers who are relatively new are Li y. and Liu y. with a focus on the digital economy (Li et al., 2022) (Figure 1).

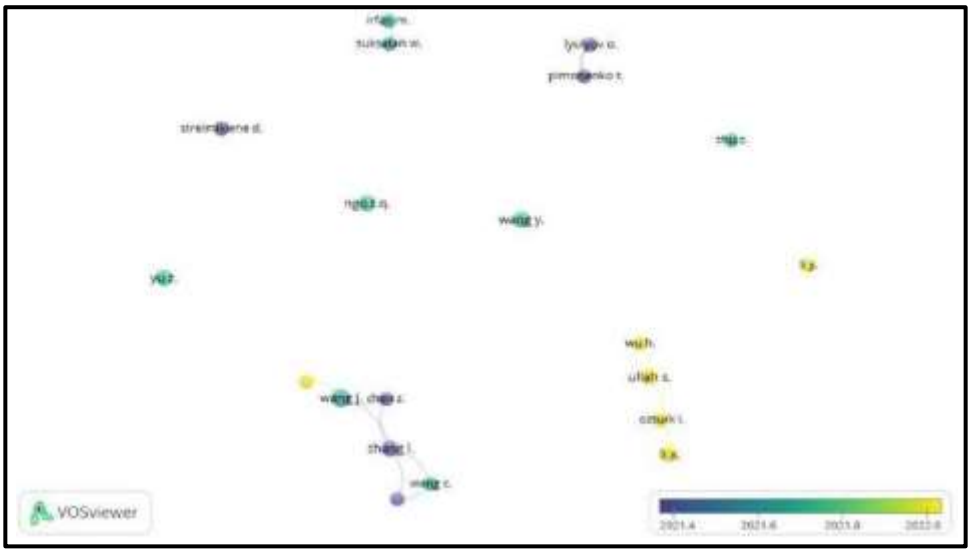

Figure 1. Recent Researchers

Most of these researchers are also not only classified as recent researchers but also consistently as dominant researchers, except that Li y. is categorized as a non-dominant researcher. Besides Li y. Other researchers who are not dominant include Zhu z., and Streimikiene d. (Figure 2).

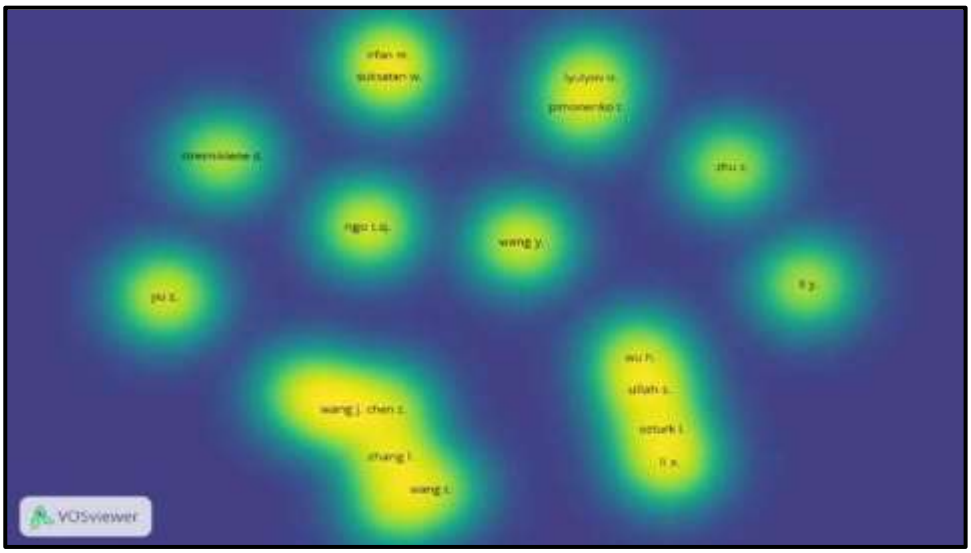

Figure 2. Dominant Researcher

b. Country

Determination of countries is determined by the criteria of having at least 3 articles. Based on VOSviewer data processing, the country with the highest number of studies is China with 96 article documents, followed by the United Kingdom with 52 documents, Germany and Pakistan with 35 documents each. Meanwhile, the countries with the least number of studies are Nigeria, Croatia, South Korea, and New Zealand, each with 3 article documents (Figure 3). China has indeed become one of the leaders in research on the Green Economy. China has invested heavily in efforts to reduce the environmental impact of its economic growth and develop green technologies. China's successful economic transition has encouraged other countries to take part in the green economy. In the Overlay Visualization section of VOSviewer, countries that are starting to implement the latest green economy include Pakistan, Malaysia, Turkey, Vietnam, Taiwan, Saudi Arabia, and Brazil. While countries that have long adopted the concept of green economy are Sweden, France, Ukraine, and Indonesia. The implementation of the green economy in these countries is not as massive as China.

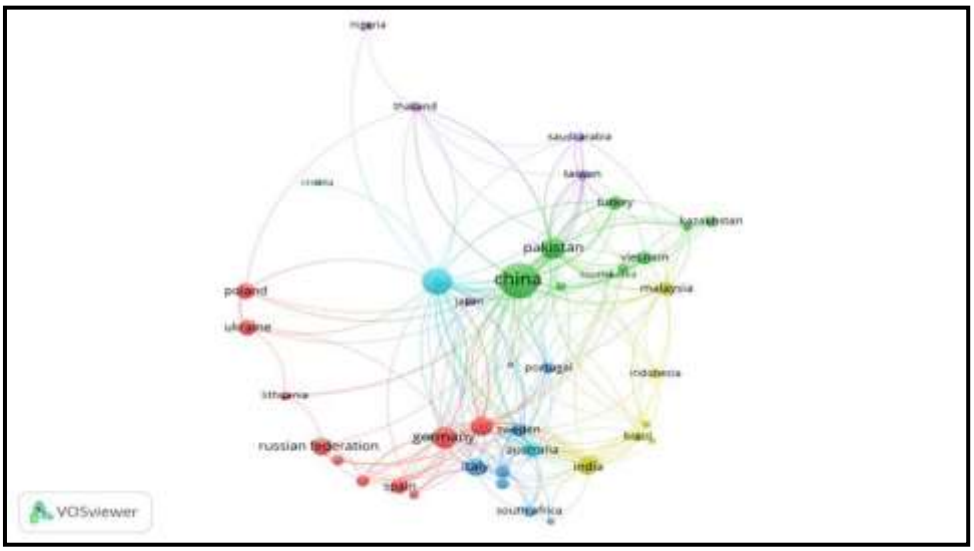

Figure 3. Country Distribution

c. Research Topic Cluster (Network Visualization

Network Visualization is one part of the VOSviewer application to determine the distribution of topic clusters. Based on the analysis results, the topic of "Green Economy" is spread into 6 research topic clusters (Figure 4).

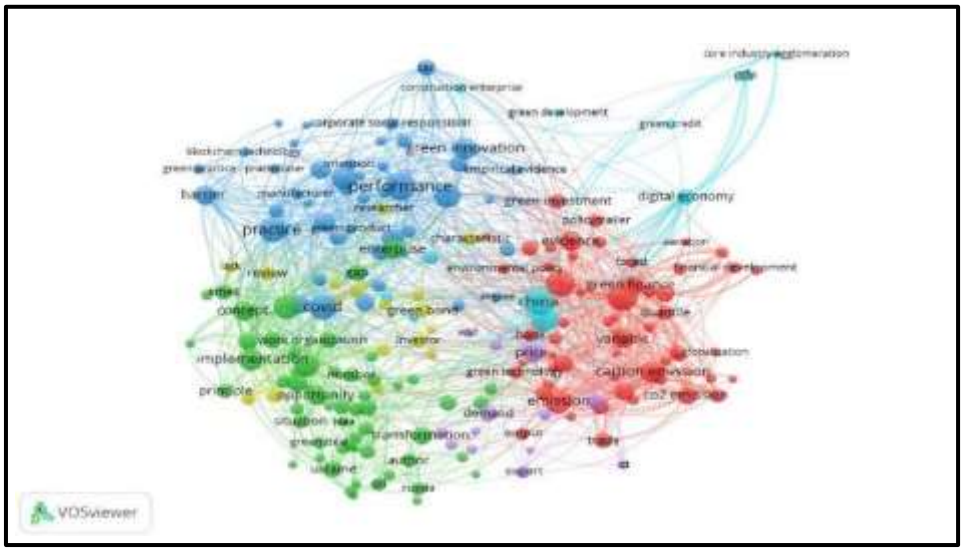

Figure 4. Topic Cluster

first cluster: In the first cluster, the topic of Economic Growth is the central topic that is connected not only to its own cluster but also to topics in other clusters. Within the cluster, the topic of Economic Growth is connected to the study of other topics including Relationship, Emission, Evidence, Carbon Emission, and Energy Efficiency. These topics are classified as topics that are widely studied by researchers. For topics that are classified as less studied by researchers quite a lot, namely Variation, Globalization, Energy Use, Financial Development, Environmental Sustainability, and Short Run. While Economic Growth studies are connected to other topic clusters including China, Region, Innovation, Covid, Circular Economy, Implementation, Pandemic, and Energy Consumption (Figure 5). Economic Growth is the center of the study topic in Green Economy research. This is because Green Economy is an economic concept that offers environmentally friendly development. Many countries have succeeded in making this concept a new alternative to development that directly impacts economic growth, such as China. Causing the topic of Economic Growth to be central and directly related to many other topics across clusters.

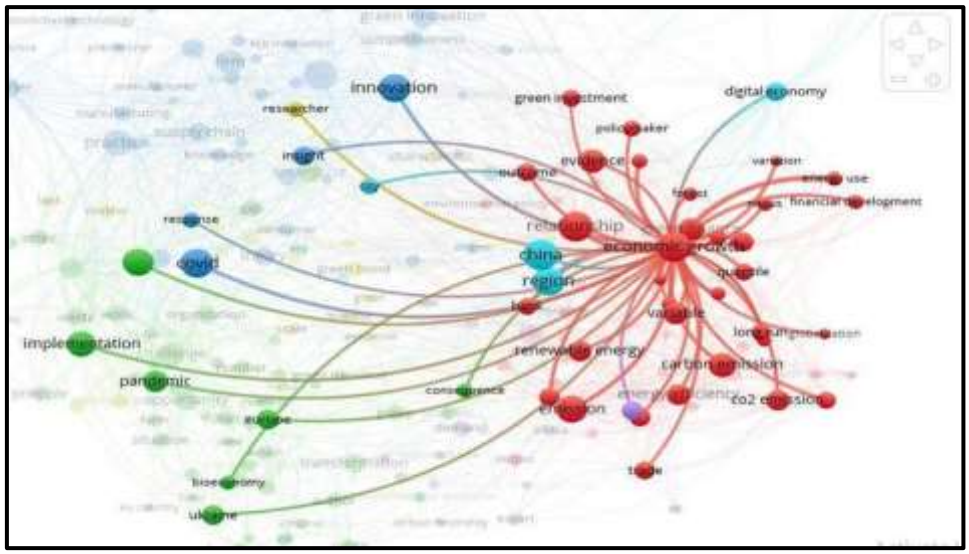

Figure 5: Topic Distribution of Cluster 1

second cluster: In the second cluster, the topic of Circular Economy is the largest and most studied by researchers. The distribution is connected to research in the internal cluster and the outer cluster. Internal cluster topics that are directly connected to the

Circular Economy and are of high interest to researchers include Implementation, Opportunity, Enterprise, Challenge, and Transformation. Those that are not of great interest are Green Logistics, Circularity, Account, Economic Activity, and SMes. Circular Economy topics are also directly connected to research studies outside the cluster, including Covid, Practice, Barrier, Firm, Performance, Supply Chain, and Innovation (Figure 6).

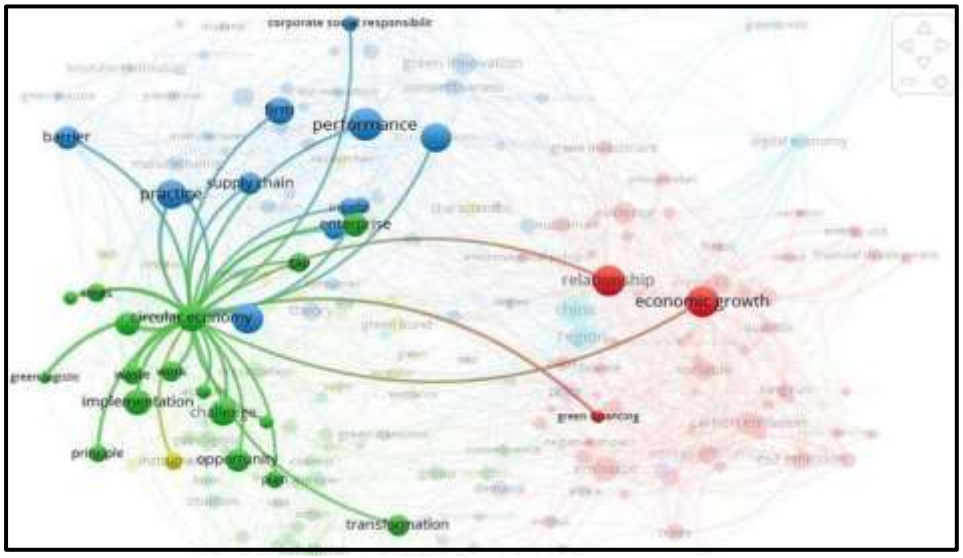

Figure 6: Topic Distribution of Cluster 2

third cluster: the most popular research topic by researchers in the third cluster is Performance. In the cluster itself, this topic is directly connected to several study topics including Innovation, Practice, Firm, Green Innovation, Covid, CSR, Barrier, and Theory. These topics are considered to be of great interest to researchers. Meanwhile, topics whose research interest is still lacking in this cluster include Green Performance, Green Practice, Blockchain Technology, Manufacturer, Policy Maker, and Environmental Concern. For cross-cluster topics, the Performance topic is directly connected to study topics that are classified as high interest, including Green Investment, Policymaker, Evidence, Relationship, Variable, Carbon Emission, Emission, China, Region, Implementation, and Circular Economy. While those that are relatively small in demand are the study topics on Carbon Neutrality, Construction Enterprise, Researcher, and Green Bond (Figure 7).

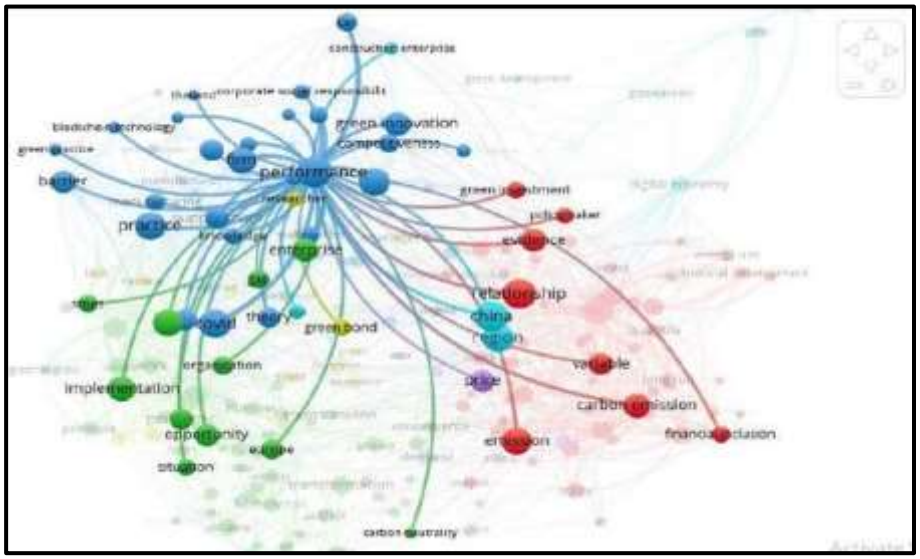

Figure 7: Topic Distribution of Cluster 3

fourth cluster: Research interest in the fourth cluster is minimal, with no prominent research topics within the cluster, except in other clusters linked to this cluster. Within the cluster, the Green Bond research topic is the most researched topic and is directly related to the study topics of Instrument, Investor, Green Bond Market, Economic Benefit, Green, and Low Carbon Economy. As for cross-cluster, this research topic is directly connected to Performance, Price, Evidence, Oil, and China, and is classified as a relatively large research interest (Figure 8).

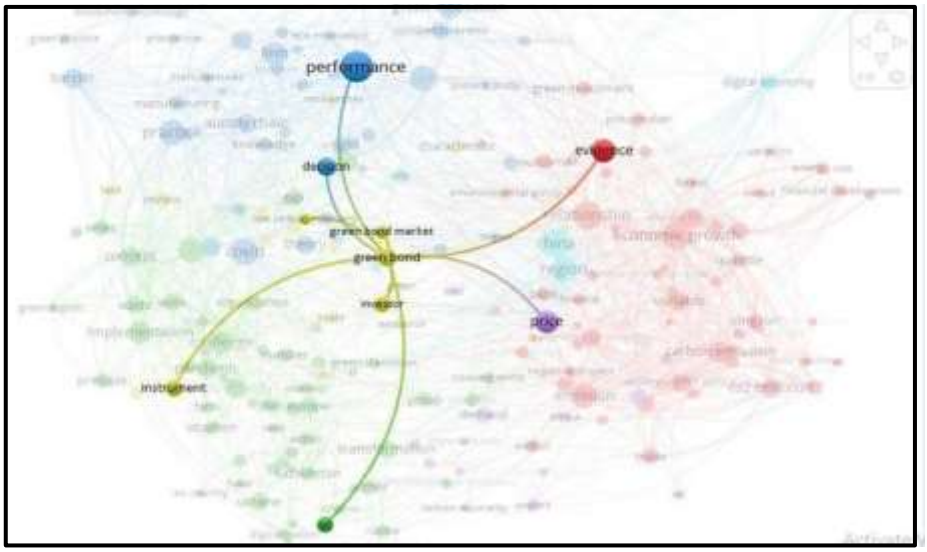

Figure 8: Topic Distribution of Cluster 4

fifth cluster: Internally, this cluster shows that none of the topics are overly dominant, and are relative. The topic of Price is the only topic that is most directly connected to other topic studies. The topic of Price is directly connected to the topics of Demand, Climate Policy, Significant Impact, and Energy Consumtion. Meanwhile, cross-cluster topics with a lot of interest include Covid, Supply Chain, Relationship, Evidence, Variable, and Carbon Emission. Topics with less interest from researchers include GDP, Short Run, and Foreign Direct Investment (Figure 9).

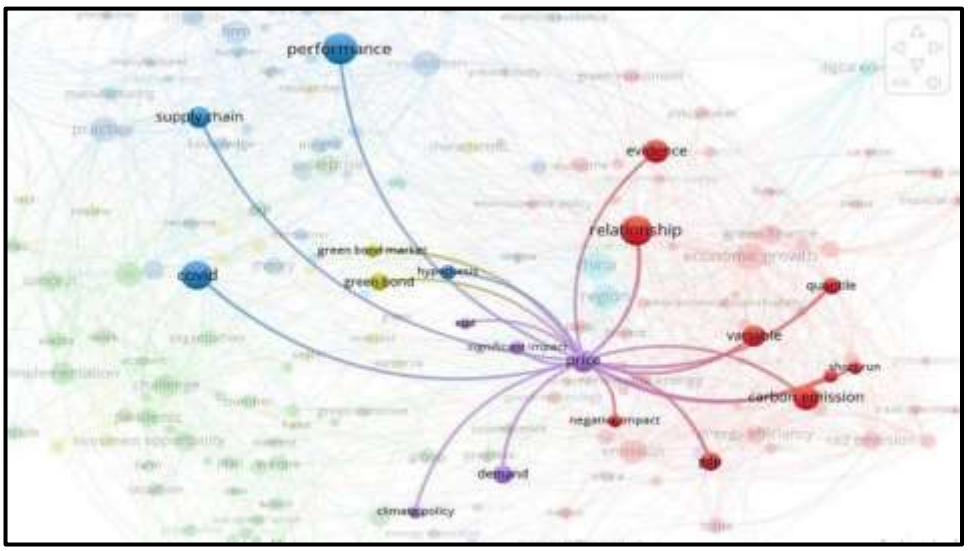

Figure 9: Topic Distribution of Cluster 5

sixth cluster: There is considerable research interest in the sixth cluster, especially the topic of China. This topic is the center of topics that are directly connected not only within the cluster but also spread throughout the cluster. Within the cluster, the topic of China is directly connected to the study of the topic of Region and Digital Economy, which is considered to be of great interest to researchers. In addition, the topic of China is also connected to the study topics that are classified as minimal research interest, including Construction Enterprise, Green Development, Green Credit, GTFP, Core Industry Agglomeration, and Agglomeration. In contrast to its relationship with study topics outside the cluster, the topic of China is directly connected to topics with great research interest, including Performance, Practice, Covid, Green Innovation, Innovation, Challenge, Opportunity, Relationship, Economic Growth, Emission, Carbon Emission, and Green Financial (Figure 10).

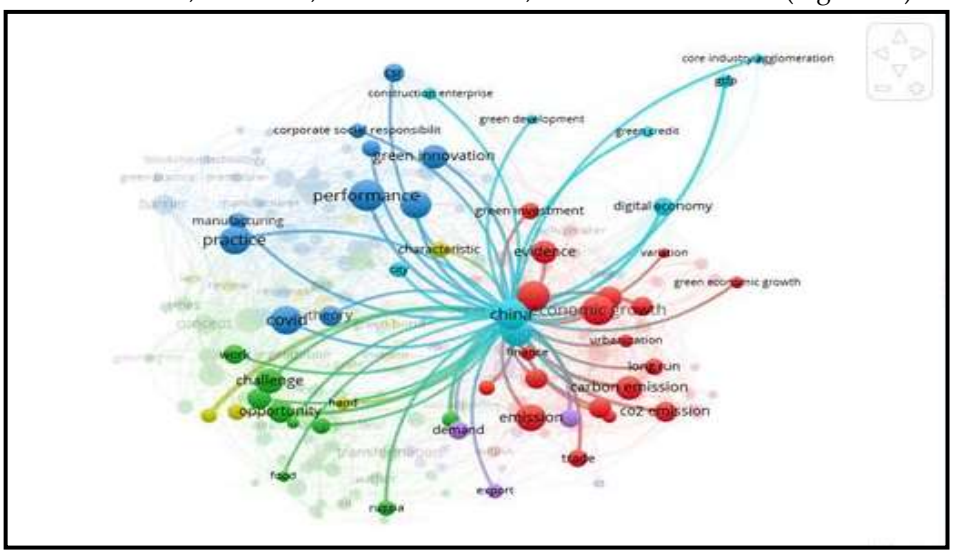

Figure 10: Topic Distribution of Cluster 6

d. Research Novelty (Overlay Visualization)

The results of the VOSviewer analysis when viewed from Research Novelty (Overlay Visualization) that the latest research on the Green Economy is around the end of 2021. The latest study topics in the Green Economy research theme include Price, Barrier, Green Practice, Financial Inclusion, and Green Development. While the oldest study topics include Practice, with other topics connected to it such as Opportunity, Green Building, and Eco Innovation. In addition, there is a Region with derivative topics such as Green

Technology, digitalization, and Pandemic (Figure 11). In general, the novelty distance of the Green Economy theme is still within one year.

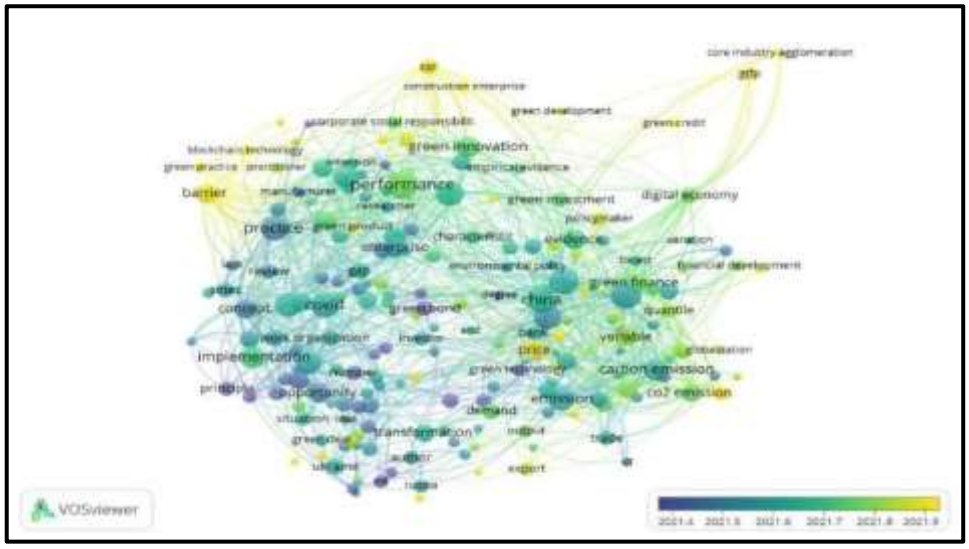

Figure 11. Recent Topics

price: the topic of Relationship studies is one of the main topics that connects its studies with the topic of Price. Many researchers have tried to connect the topic of Relationship with Price, especially its effect on the country's economy, for example the relationship between investment and oil prices and carbon emissions, which concluded that direct investment is positively related to carbon emissions in the long run, and oil prices have a positive and significant effect on CO2 emissions (Ashraf et al., 2022). In addition to Relationship, researchers have also attempted to connect the topic of Performance with Price. One of them is a study conducted by M Deng which links economic performance with natural resource commodity prices. The results concluded that natural resource price volatility has a negative impact on economic performance (Deng, 2022).

barrier: the topic of Practice studies is one of the big topics and connecting it with the topic of Barrier studies is relatively new. Many researchers have attempted to connect the topic of Practice with the topic of Barrier as done by Prasad and his friends. He looked at how barriers in the practice of sustainable Lean-Led Manufacturing Implementation and the potential use of Blockchain Technology in overcoming barriers. The result is that economic and managerial barriers, knowledge and awareness barriers and organizational barriers are the most prominent categories of barriers to sustainable manufacturing (Prasad et al., 2022).

financial inclusion: within the Green Economy theme, the topic of Financial Inclusion is quite popular among researchers. Based on the results of the analysis, the topic of Financial Inclusion is present in order to answer the contribution of the Green Economy to financial practices. It must be understood that the role of financial inclusion in promoting a sustainable environment is still minimally researched. The researchers also concluded that financial inclusion contributes to increasing CO2 emissions (Tufail et al., 2022). In addition, financial inclusion is critical to improving country performance and the green economy. Its existence contributes to the improvement of green economy capabilities in China (Z. Liu et al., 2022). Meanwhile, in ASEAN countries, financial inclusion contributes to the amount of pollution removed from the environment (Saydaliev & Chin, 2022).

green development: The topic of Green Development is still relatively new and there are very few researchers who have addressed this topic. This means that there is still a

huge opportunity for future researchers to study it. There are three topics that connect their research with the topic of Green Development, namely China, Digital Economy, and City.

e. Dominant Topics (Density Visualization)

VOSviewer analysis on Density Visualisation to determine the dominant and non-dominant topics. The brighter the colour shows that the topic is very dominantly researched, and vice versa, if the colour is faded, it shows that the topic is still minimally researched. This means that the space for research on the topic is still open. The dominant topics include China, Covid, and Economic Growth (Figure 12).

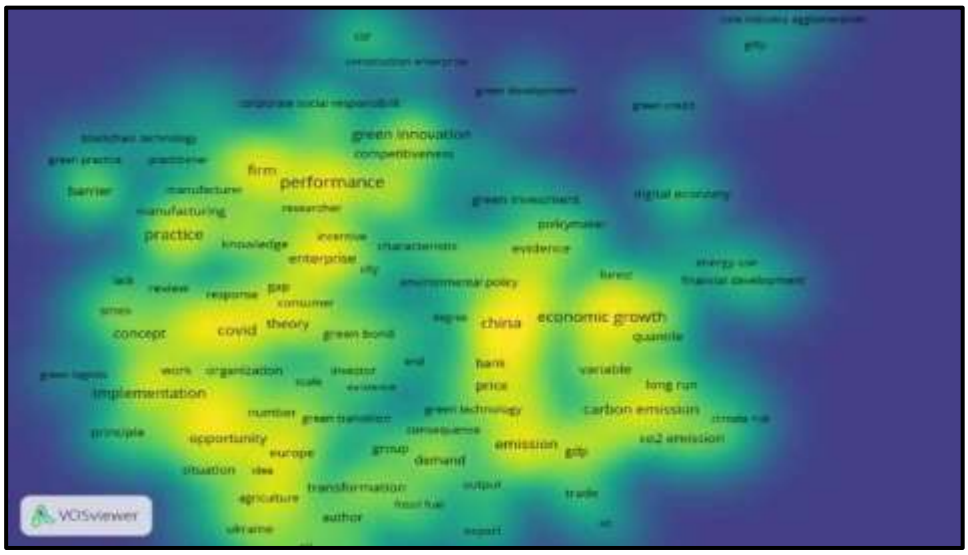

Figure 12: Dominant Topics

china: green economy emerges as one of the dominant factors in sustainability undergoing economic transformation towards a green economy. Green development has been China's national development plan since 2008 and has invested substantial resources in maintaining the transition to a green economy (Partnership with China | UNEP - UN Environment Programme, n.d.). Therefore, researchers are very enthusiastic in studying the practice of China's economic transition to a green economy with various related topics, which is the reason why China's topics are dominantly researched.

covid: The Covid outbreak that emerged since 2019 has had a huge negative impact on the country's economy. Limited space for movement and interaction has forced the economy to hit rock bottom across the country. This situation was triggered by the paralysis of economic practices including the green economy sector. This has attracted the attention of researchers to study the development of the green economy during the Covid period and afterwards (Dewi & Melati, 2021).

economic growth: Over the past two decades, countries have been concerned about environmental issues, climate change and global warming, which have had a markedly negative impact on people's lives. The trigger is the incessant development policies that are not friendly to the environment by only prioritising economic interests. On this basis, the concept of green economy comes as the right step in solving this problem. Many countries have implemented the concept of green economy and made it an important instrument in economic growth. Since the concept began to be campaigned for until now, many researchers have been interested in examining the contribution of the green economy to the economic growth of a country. These researchers include Saqib (Saqib, 2022), Kolmykova (Kolmykova et al., 2021) and Viktorovna (Viktorovna et al., 2021). The number of interested researchers shows the dominance of the topic of Economic Growth.

In addition to the dominant topics, there are also non-dominant topics. The non-dominant topics in the Green Economic theme show that there is a very wide space to study it further. In the context of Green Economy, these topics include CSR (Corporate Social Responsibility), Green Credit, GTFP (Green Trade Finance Programme), Digital Economy, Energy Use, Financial Development, and Green Logistics (Figure 12). In a deeper understanding of the Green Economy, each of these topics has great potential to contribute significantly to developing sustainable economic practices. Therefore, further research and exploration into these topics will help us understand how they can play a role in achieving the goal of a more sustainable green economy in the future.

4. Discussion

The concept of green economy was born as a response to the growing concern of the negative impacts of industrialisation and traditional economic growth on the environment and sustainability through its basic principle of integrating economic, social and environmental aspects in every decision and policy taken. To perfect the success of green economy values, support from various parties is needed, one of which is researchers. Wang J. is the only researcher with the most articles. He focused on several major green economy issues such as environmental pollution (Xie et al., 2022), carbon emissions (Dong et al., 2021), to green tourism (Zhang et al., 2021). What is interesting is that both policies on environmental pollution and carbon emissions, for some companies claiming green innovations hinder financial performance. Devaluation of firm value actually only occurs in the short term through an increase in the proportion of patent upgrades. This can be overcome by increasing executive equity incentives and the management-employee pay gap. In this way, corporate green innovation should still be encouraged because it aims to improve human welfare, social equality, and reduce environmental risks (Chaaben et al., 2022). Creating a balance between economic growth and environmental awareness is a key principle to achieve long-term economic and ecosystem benefits.

The development of researchers on green economy continues with new researchers who bring focus on new aspects such as agriculture, CO2 emissions, green innovation, and digital economy. According to Parmawati (2019), the contribution of researchers as material for evaluating the development of the green economy (Parmawati, 2019). In the world of agriculture, the dependence of modern agriculture on the use of pesticides is a serious problem of environmental damage and human health. In Europe, there is a green pact in the world of agriculture, namely "Farm to Fork". This pact is a strategy that aims to build sustainable agricultural processes and distribution. One way is to minimise the use of excessive pesticides. It was found by Dobrin (2022) that suppressing the use of pesticides has no impact on reducing agricultural productivity (Dobrin et al., 2022).

The concept of green economy emerged as a new alternative in the economic development model. China is a country that is very massive in transferring economic development with a green economy approach. China implemented a green economy triggered by a number of significant reasons:

1) Environmental issues have become an increasingly urgent global concern, and China as a country with a large population with a high level of industrialisation feels the need to reduce its negative impact on the environment. Industrial technology in shaping an environmentally friendly economy is crucial as stated by Vishnevsky (Vishnevsky et al., 2021).

2) The green economy is expected to open up new opportunities for long-term economic growth, by investing in green sectors such as renewable energy, sustainable transport, and green technology.

3) With its dependence on natural resource imports, China is also looking for ways to improve resource sustainability and reduce its vulnerability to global price fluctuations. Therefore, China has taken various measures, including the development of

stricter environmental regulations, promotion of green technologies, and heavy investment in renewable energy, to achieve this green economy goal.

In 2013, the United Nations Environment Programme (UNEP) and China's Ministry of Environmental Protection jointly published the study China's Green Long March, which assessed China's progress towards a green economy and found that China has seen very strong green development in solar photovoltaic, wind, bioenergy, cement, and industrial environment over the past decade. The Modeling China's Green Economy 2010-2050 report, also launched by UNEP in collaboration with the Institute of Scientific and Technical Information of China, showed that China's move to a green economy would benefit economic growth, climate change mitigation, job creation, and improving the lives of the poor, and provided policy recommendations for prioritising China's green economy (Partnership with China | UNEP - UN Environment Programme, n.d.). China's successful economic transition has encouraged other countries to take part in the green economy. Countries that are starting to implement the latest green economy include Pakistan, Malaysia, Turkey, Vietnam, Taiwan, Saudi Arabia, and Brazil. While countries that have long adopted the concept of green economy are Sweden, France, Ukraine, and Indonesia. The implementation of the green economy of these countries is not as massive as China. However, this is sufficient evidence that developed and developing countries see the importance of making a sustainable economic transition (Alsmadi & Alzoubi, 2022), although developing countries have challenges in the form of industrial technology innovation (Vishnevsky et al., 2021).

The transition to a green economy is crucial for the country's economic growth as it provides a foundation for sustainable development that is responsive to global environmental challenges. That is why the topic of "economic growth" in green economy studies has a large portion for researchers to research. Firstly, a green economy encourages innovation and investment in environmentally friendly sectors, such as renewable energy, clean technology and energy efficiency. This creates new jobs, stimulates the growth of new industries, and accelerates the development of a knowledge-based economy. Second, by reducing reliance on finite and environmentally damaging natural resources, the green economy helps to maintain resource sustainability for future generations. Judicious use of resources and sustainable agricultural practices help protect biodiversity and minimise destructive impacts on ecosystems. Third, it creates new opportunities in the global marketplace. Countries that take the lead in green economy practices can become market leaders and increase their competitiveness in the international economic arena. This opens up opportunities for trade and investment expansion, which in turn supports economic growth. In other cases, political uncertainty stifles green finance projects, preventing economic growth. Yet green finance is a driver of economic growth in countries. Governments can play a positive role through the development of green finance markets to increase resilience to political fluctuations.

Another potential that encourages economic improvement through the green economy is the birth of the spirit of microeconomics in reducing pressure on the environment (Circular Economy). Companies with a sustainability orientation will strive to develop friendly products so that consumers consider the company still relevant (Budiarto et al., 2023), and environmental awareness has a positive effect on consumer purchase intentions (Indarwati & Untarini, 2017). Due to its huge impact on GDP, the microeconomy has received great attention in several countries especially on governance, stakeholder relations, and innovation, to accelerate the transition to circularity (Gennari, 2022), although it encounters many obstacles, one of which is the culture of society (Neves & Marques, 2022). On the other hand, at the microeconomic level that is constrained by production costs, Circular Economy can be a solution to reduce production costs.

As the green economy evolves, discussions about the green economy are not limited to its direct impact on the economy. Most recently, the topics of Price, Barrier, Green

Practice, Financial Inclusion, and Green Development have been intensely studied and are in direct contact with one of the principles of the green economy, namely resource efficiency to avoid waste. Forms of implementation such as green bonds can be realised through the role of energy prices and green energy stocks (Yan et al., 2022). Another form of implementation is financial inclusion. Financial inclusion in the context of a green economy refers to efforts to ensure that all levels of society, including those at lower economic levels or with limited access to financial services, can participate in and benefit from green economic development. In some countries, financial inclusion contributes to the creation of CO2 emissions that are a factor in environmental degradation (Lin & Wu, 2022). This proves that financial inclusion does not always contribute well to the green economy as Liu Z. found in China.

Throughout its existence, the concept of green economy has contributed a lot to the economic development of a country because it emphasises sustainable growth in order to improve the welfare of society. Due to the large contribution of the green economy to the economy, the topic of economic growth has become very dominant in research. When the economy experiences a recession as experienced during the Covid-19 period, and the decline in environmental quality due to economic activity (Pertiwi et al., 2021), economic principles through the green economy can encourage the acceleration of post-Covid-19 economic recovery and environmental problems. The pandemic has exposed vulnerabilities in the global economic system and highlighted the urgency to restructure development models that are more resilient to future crises. Meanwhile, environmental damage has become a complex problem that is difficult to solve. The green economy offers a framework that prioritises environmental sustainability, resource efficiency and green technological innovation. Through investments in sectors such as renewable energy, sustainable transport and smart waste management, countries can create new jobs, increase economic resilience and reduce negative environmental impacts. In addition, a focus on the green economy can improve global competitiveness, strengthen energy independence, and reduce dependence on finite resources. By embracing green economy concepts, countries can rebuild their economic foundations in a way that is more inclusive, sustainable and resilient to future challenges.

5. Conclusion

The development of research topics and issues on Green Economy reflects the evolution of understanding of environmental and sustainability challenges in the context of the global economy. Over time, these research topics have involved a wide range of researchers from different countries, focusing on topic clusters that evolve with socio-economic needs and dynamics. Wang J., with the highest number of articles, has been a key contributor in understanding the major issues of the green economy, such as environmental pollution, carbon emissions, and green tourism. Against companies that claim green innovation hampers financial performance, it can be addressed by increasing executive equity incentives and the management-employee pay gap. Meanwhile, the emergence of new researchers, such as Ozturk I., Ullah S., Li X., and Wu H., brings a new perspective to this topic, with their research focusing on green innovation and agriculture. In agriculture, suppressing the use of pesticides has not resulted in a decrease in agricultural productivity. On a global level, countries like China are showing success in implementing a green economy approach, taking concrete steps such as the development of strict environmental regulations and large investments in renewable energy. China's success is encouraging other countries to jump on the green economy bandwagon, both those that are just beginning to adopt it such as Pakistan and Malaysia, and those that have long been implementing the concept such as Sweden and France. The topic cluster analysis also illustrates the evolution of research issues. The issues of Economic Growth and Circular Economy have a large share in the research. Meanwhile, issues such as Price,

Barrier, Green Practice, Financial Inclusion, and Green Development are the latest green economy studies that focus on the implementation of green bonds and financial inclusion. In terms of dominant and non-dominant topics, some topics that are very dominant are topics on Economic Growth and Covid-19. Overall, the development of Green Economy research topics and issues reflects a positive evolution, with new researchers bringing new perspectives, countries adopting green economy principles, and new emerging topics enriching the scope of research. This creates a strong foundation for the understanding and implementation of green economy concepts at the global level.

This research contributes to the direction of research and government policy development. The findings provide an empirical foundation for understanding the impact of economic practices on the environment as well as potential sustainable solutions. This, in turn, provides clues for researchers to identify urgent and relevant topic clusters to be followed up in the form of research.

The limitation of this study is that the data used is still limited to the type of secondary data, namely previous articles sourced from the Scopus database, and focused on the last 2 years. Future research needs to use primary data, namely interview and observation data, and increase the analysis time to the last 5-10 years.

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