

THE CONCEPT OF POLICY DIFFUSION IN OVERCOMING THE COVID-19 PANDEMIC: BIBLIOMETRIC ANALYSIS

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Abstract

This study uses bibliometric analysis to provide an overview or visualization to explain bibliometrics regarding the use of the concept of policy diffusion in handling the Covid-19 pandemic. This study focuses on the use of the words "policy diffusion" and "Covid-19" from 2020 to 2022 through the Scopus database which are then visualized with the VOS viewer software. The results of the analysis found that there are 145 publications of scientific papers and the most of them were from 2021. The co-authorship analysis revealed that there was collaboration built by several researchers. In addition, a co-occurrence relationship was also found in which there were at least four clusters.

Keyword: Bibliometric, Covid-19, Policy Diffusion

1) INTRODUCTION

Over the past three years, starting from 2020 since the emergence of the Covid-19 pandemic in Wuhan, China, until 2022, many parties have conducted studies or researches related to the Covid-19 pandemic in numerous countries, one of them is Indonesia. It is because the Covid-19 pandemic is also considered as an epidemic that threatens public health as well as attracts the attention of various academics around the world (Núñez and Rodríguez, 2021). The study or research is a response from academics to contribute knowledge, insight, and input in forming a policy for the government. With today's increasing technology and knowledge, it is advantageous for academics to conduct a research that is more intense and sustainable (Verbeek A, 2002). In addition to the involvement of the government, community, and health workers in handling the Covid-19 pandemic, academics also play a major role in preventing and handling epidemics through research that has been conducted (Moreira LFP, 2020), one of which is through efforts to use the concept of policy diffusion in handling the Covid-19 pandemic.

Policy diffusion is generally defined as an attempt by the government to be able to make and determine various kinds of policy choices based on similar policies in other governments (Gilardi, 2015; Graham et al., 2008; Maggetti & Gilardi, 2015). Policy diffusion also has links with various interdependent units based on their characteristics (Bender et al., 2014). Units can vary according to their level (international, transnational, national, subnational, etc.) and type (country, city, public/state organization, company, etc.). Thus, talking about policy diffusion means talking about imitation carried out by two groups of organizations, both government at various levels and the private sector, to survive and develop, which in this study focuses on

government with the same policy making because it faces the same phenomena or problems, namely the Covid-19 pandemic.

The things mentioned above are part of policy diffusion which is used to carry out policy making by a government. As a result, in this study, we use data from Scopus as a database of international scientific works as well as a provider of educational services to be able to explore highly reputable scientific journals in various scientific fields. Scopus itself is widely used by academics, both students and lecturers to get references in making a scientific work.

In this study, we will use bibliometric analysis to visualize and construct research on the use of policy diffusion in handling the Covid-19 pandemic at Scopus. This bibliometric analysis will also use VOSviewer software as a tool, so it can determine various things such as identifying potential research subjects and determining the most frequently cited references in certain fields (Utami, 2022). In this bibliometric analysis, we identify the evolution of research publications from 2020 to 2022 according to the emergence of the Covid-19 pandemic, author collaboration, policy diffusion networks according to keywords, and direction of scientific concepts.

2) METHOD

This study uses descriptive bibliometric analyses which use the literature database from Scopus for 2020 to 2022. Bibliometrics is a method describing a communication process in writing and has characteristics that refer to the direction of developing descriptive analysis and calculations in a scientific discipline (Sulistyo-Basuki, 2002). The search began on November 22, 2022 with the search options "Policy Diffusion" and "Covid-19". For the field of study search option on Scopus choose "Social Science"; "Environmental Science"; Economics, Econometrics and Finance", "Business, Management, and Accounting"; Decision Science"; Arts and Humanities". Then for language, we limited it only to English and Indonesian-language scientific works. Searches are restricted to the year range from 2020 to 2022.

From these restrictions, a total of 145 scientific works were collected which were then stored in the RIS form. Then the RIS file was used in VOS viewer to show a bibliometric connection visualization or network pattern with three categories, such as network visualization, overlay visualization, and density visualization. When entering the RIS file, we also limited a number of phrases that were not in accordance with the discussion of this study.

3) RESULTS AND DISCUSSION

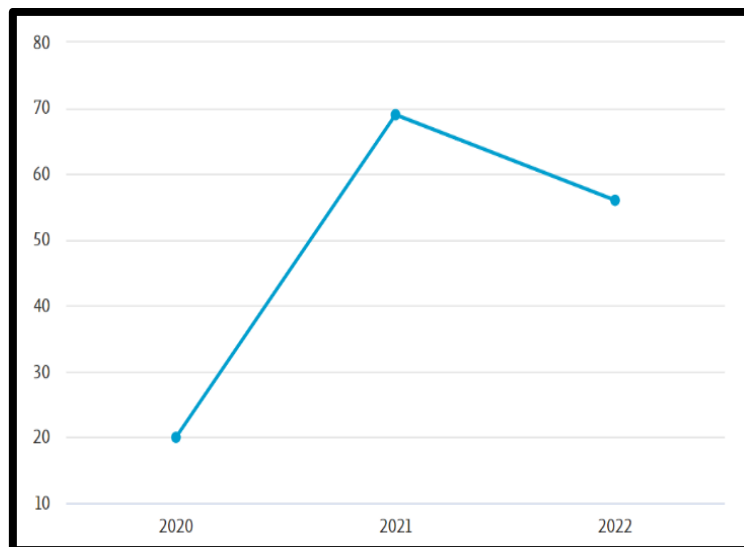
a. Publication of Research Scientific Papers on Policy Diffusion in Handling the Covid-19 Pandemic

In the publication of scientific papers discussing the diffusion of policies in handling the Covid-19 pandemic originating from Indonesia, we did not find any in either Scopus, Garuda (Garba Reference Digital) and Sinta (Science and Technology Index) as the Indonesian government's official publication database. From 2020 to 2022, both nationally and regionally. Meanwhile, international publications from 2020 to 2022 are recorded through the Scopus database

reaching 145 publications. Thus, discussing policy diffusion in handling Covid-19 in Indonesia is something rare.

The publication of scientific papers at Scopus regarding policy diffusion in the handling of the Covid-19 pandemic has fluctuated and was mostly carried out during 2021. This number increased by 50 publications from 2020 which only recorded 20 publications, while in 2022 there are only around 58 publications. This can be seen in Figure 1.

Figure 1: Article publications from 2020-2022



Source: Scopus (2022)

The Covid-19 pandemic first occurred in Wuhan, China at the end of 2019. Thus, early 2020 research was focused more on the health sector. This research studies more about the virus, its spread, and the solutions that must be done so that the spread of the Covid-19 virus does not become more widespread. Although there are indeed some who have begun to discuss matters related to policy, one of them is the policy diffusion carried out by several countries in the European and American continents in determining policies to deal with Covid-19 by imitating or adopting other government policies. Then at the end of 2020, 2021 and 2022, publications regarding policy diffusion will increase as people start to get used to pandemic conditions, so that adaptability and a new lifestyle are needed to adapt to conditions at that time. This is shown by the writings that were carried out (Givens & Mistur, 2021; Mistur et al., 2020; Paul, 2020; Toshkov et al., 2020) which showed that diffusion was carried out at the level between countries in Europe according to geographical factors and politics, with various approaches to dealing with the regional spread of Covid-19. Many of these publications are affiliated with several institutions, as shown in the diagram 1.

Diagram 1: 10 Affiliations with Most Publications



Source: Scopus (2022)

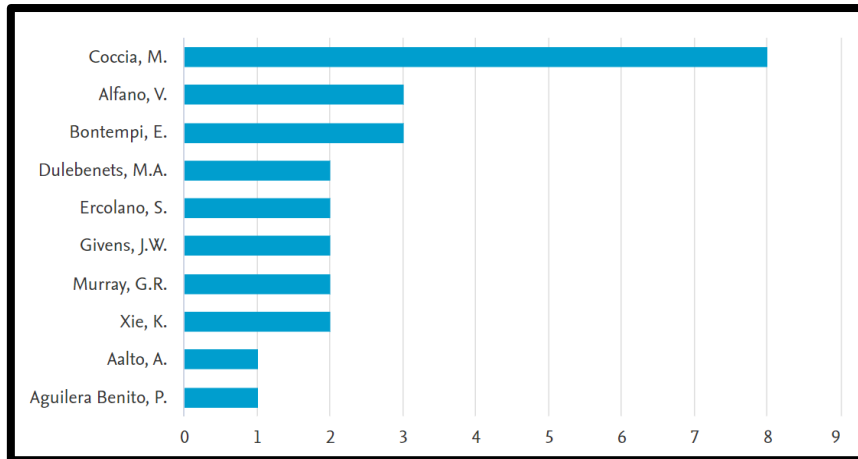
The number of publications is inseparable from the authors who are affiliated with several institutions as shown in diagram 1. The affiliation is dominated by the Italian state, which allows many of the authors to publish their scientific works. The scientific works they publish through their journals have various reputations or indexes. In general, journals which publish them have an index rating of Q4, one journal Q3, one journal Q2, and three journals Q1.

Meanwhile in Indonesia, from 2020 to 2022 there is no discussion of policy diffusion in handling the Covid-19 pandemic. Because, based on the literature review that we conducted, Indonesian writers discussed more about the impact of their policies, as written by (Suherman, 2020; Wibowo & Afriyani, 2021) regarding government policies that collaborate with various elements in handling Covid-19. Then (Agustino, 2020; Herdiana, 2020; Ristyawati, 2020) discusses the implementation of the PSBB policy and analyzes the results of its implementation.

b. Development of Publication of Policy Diffusion Scientific Papers During the Covid-19 Pandemic by the Author (Co-Authorship)

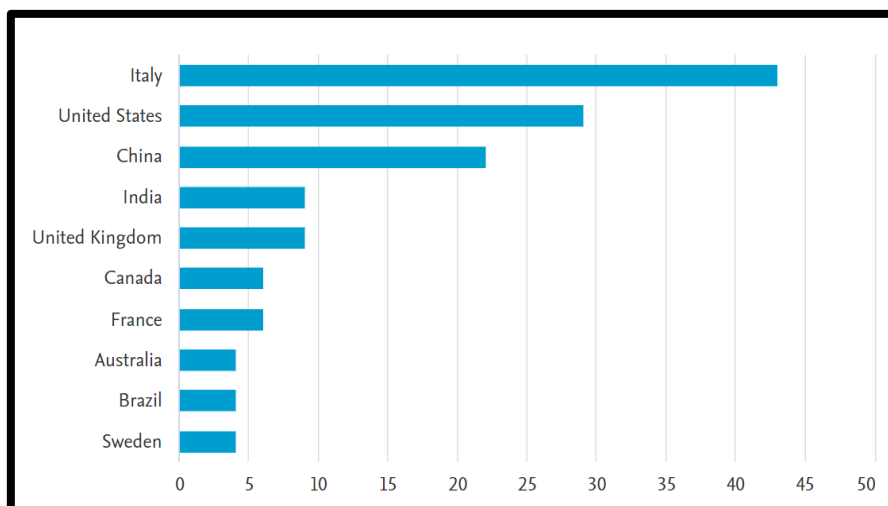
In the publication of scientific papers regarding the use of the concept of policy diffusion during the Covid-19 pandemic, it was influenced by various authors from various countries. It can be seen in Figure 2 that the top ten authors are displayed. Of the approximately 145 publications, 23.2% were by authors from Italy. Followed by writers from the United States with 5.8%, writers from the United Kingdom and China each with 2.9%, and from Finland and Spain each with 1.45%.

Figure 2: Top Ten Authors Researching Policy Diffusion during the Covid-19 Pandemic



Source: Scopus (2022)

Figure 3: Ten Countries with the Most Publications



Source: Scopus (2022)

The domination of researchers from Italy, as shown in Figure 3, is in line as shown in Figure 2. This is also inseparable from the affiliation existing, which is dominated by the Italian state. These authors carry out studies of scientific work alone or in collaboration with other authors, as shown in Figure 4.

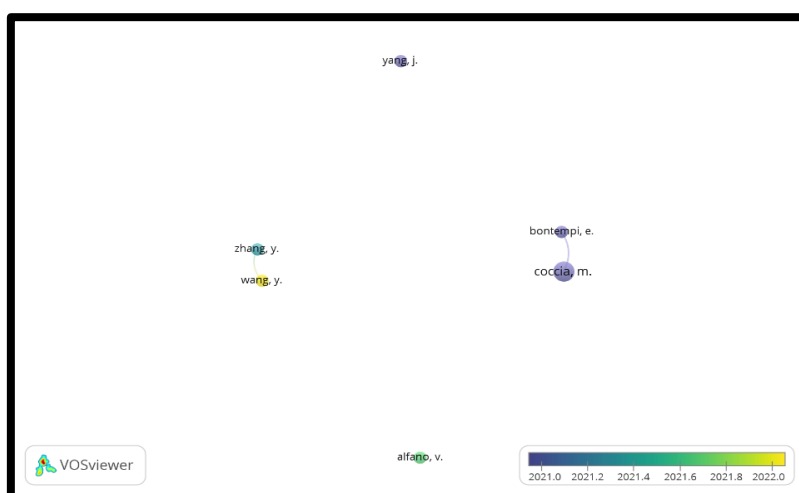
Figure 4: Network Visualization on Co-authoring



Source: VOS viewer (2022)

Figure 4 shows a representation of the visual co-authorship network as an evidence by the existence of a network (edge) that connects one author to another. Even though the picture doesn't show any circles (nodes) connecting all the authors, it's understandable because the discussion on policy diffusion during this pandemic is still limited. Unlike when discussing the topic of Covid-19 which can result in a more complex relationship. In Figure 4, only two clusters form the edge, namely the first (Zhang and Wang), and the second (Coccia and Bontempi). The rest, Alfano and Yang, they did their own research. Thus, it can be concluded that the existence of this network shows the collaboration of several authors to make a study of the use of the concept of policy diffusion during the Covid-19 pandemic.

Figure 5: Overlay Visualization on Co-authoring

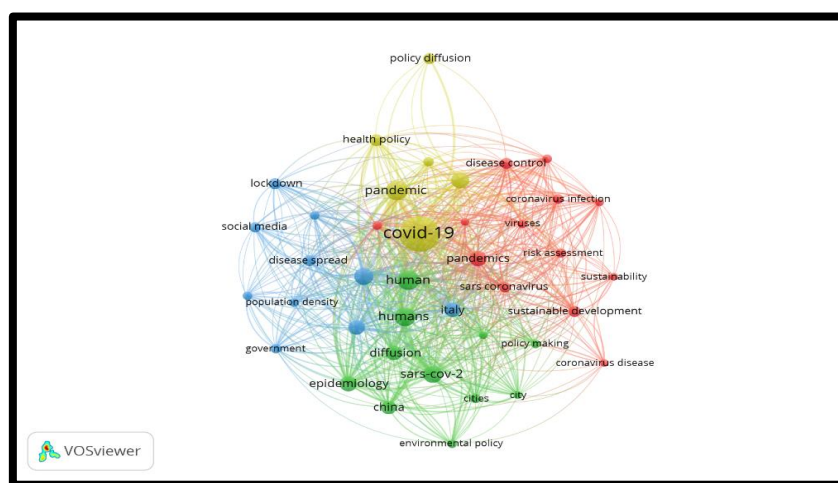


Source: VOS viewer (2022)

Figure 5 shows the historical traces of the author who conducted a study on the use of the concept of policy diffusion in handling the Covid-19 pandemic using overlay visualization. The mapping using VOSviewer software is determined by the existence of networks (nodes) based on color and edges which connect authors, both cluster 1 (Zhang and Wang) and cluster 2 (Coccia and Bontempi). Darker colors (purple) indicate research was conducted in 2020, and lighter colors (yellow) indicate research was conducted in 2022.

c. Roadmap for the Development of Publication of Scientific Papers on Policy Diffusion During the Covid-19 Pandemic Period Based on Keywords (Co-Occurrence)

Figure 6: Network Visualization on Co-Occurrence



Source: VOS viewer (2022)

Figure 6 shows how the result of visualizing co-occurrence maps using the VOS viewer software for the development of policy diffusion research in handling the Covid-19 pandemic can be divided into four clusters.

Cluster 1: The red color consists of several keywords such as coronavirus infection, disease control, beta coronavirus, viruses, disease transmission, virus transmission, pandemic, risk assessment, sars coronavirus, sustainability, sustainable development, and coronavirus disease.

Cluster 2: The yellow color consists of several keywords such as Covid-19, pandemic, coronavirus, decision making, health policy, and policy diffusion.

Cluster 3: The green color consists of several keywords such as human, humans, diffusion, environmental factors, policy making, sars-cov-2, epidemiology, China, cities, city, and environmental policy.

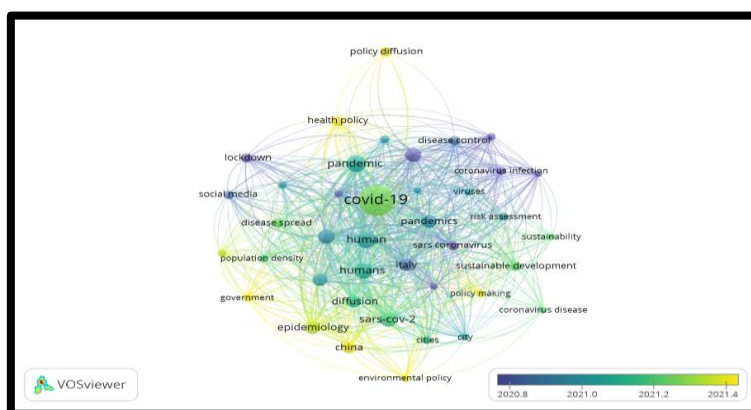
Cluster 4: The blue color consists of several keywords such as Italy, epidemic, coronavirus disease 2019, government, population density, public policy, disease spread, social media, demography, and lockdown.

Table 1: Number of Most Used Keywords

Keywords	Total Usage
Covid-19	92
Human	29
Humans	26
Pandemic	28
Coronavirus Disease 2019	21
Sars-Cov-2	22
Coronavirus	20
Epidemiology	18
Pandemics	17
Diffusion	16
Epidemic	16
Italy	15
China	13
Policy Diffusion	9

By looking at Figure 6 and Table 1 as a result of network visualization on co-occurrence, it shows that the most used keyword is Covid-19. Each cluster also shows a number of keywords that are interconnected between one cluster and another. Thus, bringing diversity in studying a topic of study. Furthermore, regarding the use of the concept of policy diffusion in handling the Covid-19 pandemic, Figure 5 shows that the loop in the "policy diffusion" section looks small, indicating that research on policy diffusion regarding Covid-19 is still low. Correspondingly, in table 1 which shows the Policy Diffusion keyword is only used 9 times.

Figure 7: Overlay Visualization on Co-Occurrence

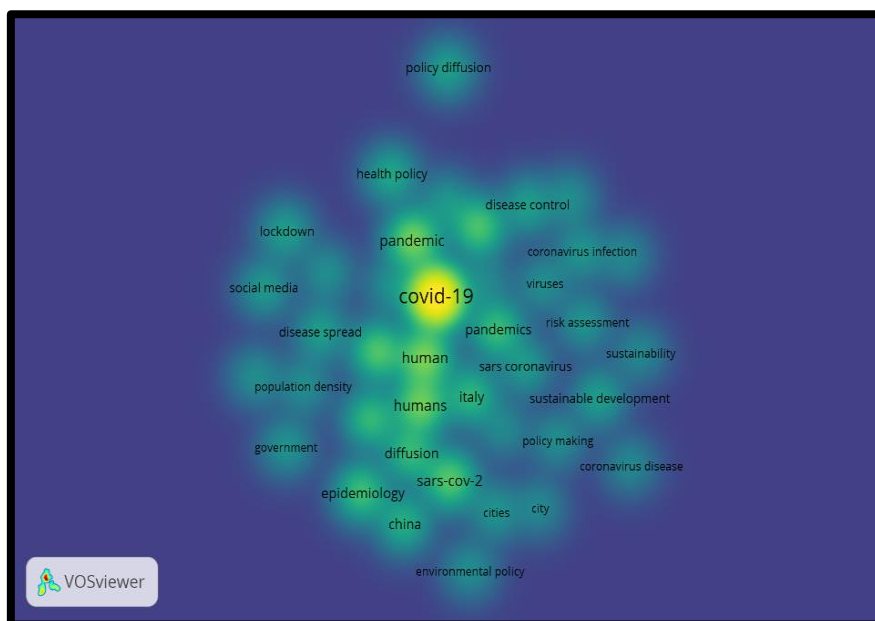


Source: VOS viewer (2022)

Figure 7 shows a visualization based on the color of the network (node) which shows keywords according to the year of publication. The darker color (purple) indicates that the research carried out in 2020, while the lighter color (yellow) indicates the research carried out in 2021. It can be seen that a lot of research with the keyword policy diffusion carried out in 2021 which

is related to several other relevant keywords discussing policy and Covid-19, even though it was not very significant. Through an overlay visualization from VOS viewer, it shows that there are many studies conducted by researchers with some of the keywords above, carried out in 2021.

Figure 8: Density Visualization in Co-Occurrence



Source: VOS viewer (2022)

Figure 8 shows a density map of processing at VOS viewer, where scientific papers published on Scopus from 2020 to 2022 are based on keywords. In the map, the more the frequency of using the keyword, the circle and its density will become brighter.

However, if the color of the circle fades, it indicates that research with these keywords has not been done much. Then, the map also shows collaboration from the use of keywords seen from the circle of keywords that touch and are covered by circles of other keywords. However, discussions regarding policy diffusion during the Covid-19 pandemic are still limited. Thus, it still has the potential to be developed widely.

4) CONCLUSION

Based on the findings and the discussion, it shows that the VOS viewer software is very helpful for conducting bibliometric analysis. In this study, using the Scopus database, around 145 scientific papers were found discussing policy diffusion in handling the Covid-19 pandemic from 2020 to 2022.

From that range of years, the number of publications has fluctuated with the highest publication in 2021. When using network visualization, it shows that there are at least four clusters, including cluster 1 with 12 keywords, cluster 2 with 6 keywords, cluster 3 with 11 keywords,

and cluster 4 with 10 keywords. Even though the discussion regarding policy diffusion in handling the Covid-19 pandemic is still limited, this is an opportunity for researchers to conduct broader studies regarding policy diffusion. Especially for researchers in Indonesia so that they can continue to grow and develop.

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