AAPA-EROPA-AGPA-IAPA International Conference 2024
Towards World Class Bureaucracy
ISSN Print: 2686-6242, ISSN Online: 2686-6250
https://doi.org/10.30589/proceedings.2024.1168

A Bibliometric Analysis of Public Policy Trend in 2013-2023

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Abstract

Public policy not only describes the process and consequences but also a set of tools and general mechanisms that provide choices of actions to be made. Previous research shows that systematic analysis of the current state of public policy is still limited. For this reason, it is necessary public policy mapping research is needed. This research uses a bibliometric approach with Scopus data between 2013 and 2023. The analysis was conducted on 12422 publications. Bibliometrics in this study used Biblioshiny and Vosviewer. The results showed that research on public policy has increased and decreased quite significantly. From 2013 to 2021 there was an increase in publications, but from 2022 to 2023 there was a decrease in publications. The average citations from 2013 to 2023 have increased and decreased. The most visible decrease occurred in 2022, namely by 1.8. The average citation per writing is 20.08. In addition, from the results of Vosviewer, it can also be seen that public administration issues continue to develop and have a network with other issues. Issues that still need to be developed related to covid-19, urban areas, education, epidemiology, social media, mental health, sustainable development, climate change, city policy, child protection policies, and pregnancy.

Keywords:

bibliometric; literature; policy; public policy; Vosviewer

Introduction

Indonesia was among the top 24 countries in scientific publishing in 2018. From 1998 to 2018, Indonesia's global ranking showed remarkable growth compared to Iran and Malaysia (Aswin et al. 2022). All types of scientific publications have increased significantly since 2008. According to Scimago data, the number of publications from Indonesia increased fivefold between 2000 and 2020 across all subject categories (Putera et al. 2020).

Over the past two decades, the proliferation of scientific publications in Indonesia has enabled scholars to investigate a subject or topic in detail through bibliometric analysis. Some researchers have started using bibliometric analysis in the academic field of public policy. There are trends from previous research that can be mapped. In recent years, the field of public policy has become more diverse and broad. Public policy studies cover several fields and various policy domains (El-Taliawi, Goyal, and Howlett 2021). As a general approach, it is a multidisciplinary field with many methodologies, variables, and actors involved in this process.

ISSN Print: 2686-6242, ISSN Online: 2686-6250
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The interdependence between issues in related policy areas seems to have increased in the first decade of this century (Aswin et al. 2022).

In fact, to talk about public policy is to talk about how public problems can be solved through state intervention. Problems of poverty, hunger, unemployment, environmental problems, global warming problems, transportation problems, security, etc. are public problems that must be solved through policy interventions. However, facts show that there is dissatisfaction with the policy decision-making process used and implemented by the government.

Public policy is used not only to describe the process and its consequences, but also a set of general tools and mechanisms that provide alternative choices of actions to be made as well as any actions that the government "chooses to do or not to do" (Bridgman, Davis, and Althaus 2020; Dye 2013; Howlett and Ramesh 2003; Kulaç and Özgür 2017; Shafritz et al. 2017). The government's choice not to do something is also a public policy because it has the same effect (impact) as the government's choice to do something (Suandi et al. 2022).

Basically, a public problem is something that must be resolved by public policy, but not all problems can be intervened by policy, depending on whether the problem is on the government's agenda or not. Therefore, the promotion of public problems into one of the policy agendas is the most important thing, so the role of actors is very dominant in pushing public problems into the public agenda. Classically, there are 2 (two) actors in public policy, namely: First, official actors (executive, legislative, and judicial) and unofficial actors (mass media, NGOs, political parties, community organizations, universities, the private sector, and individual citizens). Official actors are actors who have the authority to formulate and decide and implement policies), while unofficial actors do not have the authority to decide, but can influence policy authority. To measure and map an actor, three instruments can be used, namely power, influence, and interests (Anderson 2003; Maulana and Nugroho 2020).

Public policy is also a process. First, it begins with the public policy formulation process which consists of formulating and formulating a policy agenda. At this stage, the process of identifying problems and setting these problems on the policy agenda is carried out, then developing alternative policies and having one policy that is considered the best. There are several indicators that the policy is the best policy, first, it must be technically and administratively feasible, second, it must be politically supported, and third, it must be in accordance with financial conditions.

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Second, the public policy implementation process. This process is a policy implementation process, the thing that must be encouraged in this process is the supervision process. And this stage is also influenced by several variables, namely policy actors, communication, coordination, and the policy environment. Third, policy evaluation. Policy evaluation or policy assessment is a process of assessing whether the policy has results and impacts in accordance with what is the policy objective. The assessment will be able to contribute whether the policy is continued to be revised to become input into the policy formulation process or the policy is terminated and replaced with a new policy.

Indeed, public policy will be strongly influenced by the logic of public goods and private goods. And this logic is influenced by the idealism adopted by a country, because in essence public policy is the result of an idealism, whether it is classified into public goods whose policy allocation uses political mechanisms or private goods whose policy allocation uses market mechanisms.

Therefore, it is necessary to analyze public policies, one of which is through mapping research. There are several benefits obtained if we conduct research mapping through scientific journals, namely: First, research mapping can be useful for creating research ideas; Second, by mapping scientific articles it can be useful to provide an overview in making research backgrounds, knowing the methods of previous researchers, and knowing the results; and Third, by mapping research, the relevance of previous research will be known, by looking at the similarities and differences so that it can produce a novelty in policy research.

Currently in the digitalization era, policy research mapping is no longer done manually, there are various applications to be able to map it, one of which is by using the Biblioshiny and Vosviewer bibliometric approach.

However, previous research shows that systematic analysis of the current state of public policy is still limited. Gaining a better understanding of public policy research will provide useful information for researchers interested in this subject for their future studies. Therefore, this paper aims to provide an overview of public policy research in Indonesia from 2013 to 2023.

Methods

This research uses a bibliometric approach with the help of Vosviewer and bibilioshiny. Bibliometrics was initially used to study bibliographic materials using quantitative methods in the library and information science research domain. Gradually, bibliometrics began to receive attention from other disciplinary domains, such as management, education, economics,

ISSN Print: 2686-6242, ISSN Online: 2686-6250
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innovation, and social science research. (Marcucci et al. 2021; Srivastava and Sivaramakrishnan 2021). Furthermore, another concept explains that research mapping using bibliometric mapping is a spatial representation of disciplines, specializations, articles, and authors to each other and provides boundaries of research areas (Smyrnova-Trybulska, Morze, and Kuzminska 2018).

Vosviewer is an application introduced in 2010 by Van Eck and Waltman, currently, Vosviewer is a widely used application in bibliometric analysis, because of its ability to produce graphical representations of bibliometric maps. This application is especially helpful in terms of thematic analysis, co-occurrence analysis, and bibliographic merging, as well as cluster analysis (Srivastava and Sivaramakrishnan 2021). VOSviewer is also a freely available software developed to build and visualize bibliometric maps (Marcucci et al. 2021).

In this study, literature research for all published public policy papers was conducted using the Scopus database. The Scopus database was chosen because it is considered an impactful reference source for peer-reviewed scientific literature and an interdisciplinary source that contributes to a broad view of scientific publications. This database is one of the most commonly used sources by researchers and academics in Indonesia. In addition, Scopus provides extensive content coverage and provides very comprehensive citation analysis results (van Eck and Waltman 2010).

Searches were conducted based on subject areas including article titles, abstracts, and keywords using the terms "public policy" OR "public policy". For this review, all indexed and released references from 2013 to 2023 have been used. Search restrictions for papers were document type (articles, conference papers, and reviews), language (English), keywords (Public Policy), and open access (open access), which resulted in 12422 documents. The .ris format, including citation information, bibliographic information, abstract, and keywords was exported from the Scopus database. In addition to capturing data in ris format, data was also captured in CSV format to aid processing into Biblioshiny.

ISSN Print: 2686-6242, ISSN Online: 2686-6250
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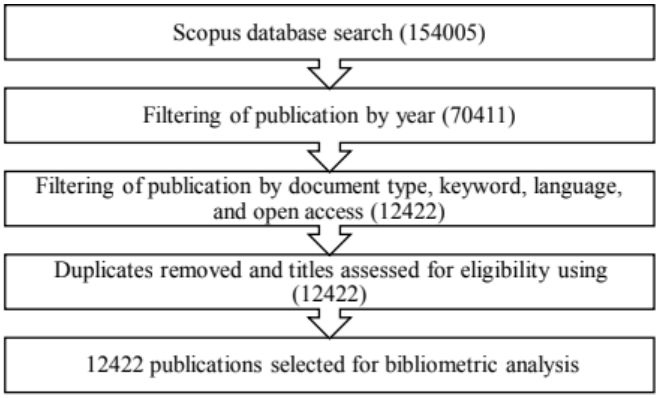
Figure 1.

Literature Selection



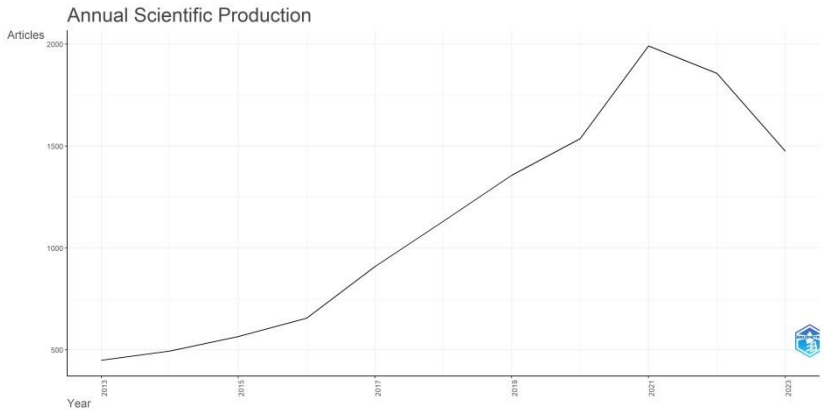
Results and Discussion

Overview of Public Policy Publications

From the data obtained from the Scopus database from 2013-2023 with the help of blibliometric analysis, such as the number of publications per year, document type, and source title, field of science, keyword analysis, country productivity, authorship, active institutions, and citation analysis.

Graph 1.

Number of Publications 2013-2023



Source: Biblioshiny data processing results in 2023.

The data above shows the development of publications from year to year from 2013-2023 with the title public policy through the Scopus database showing an upward development trend from 2013 to 2021, and a decrease in 2022. In 2021 there were 1991 publications, while in 2022 there were 1857 publications. And back down in 2023 with a total of 1475 publications.

ISSN Print: 2686-6242, ISSN Online: 2686-6250
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Then, based on the type of document, the data obtained shows that, the type of article is 10,354 documents. The type of conference paper is 793 documents, and the type of review is 1275 documents, with a total of 12,422 documents.

Graph 2.

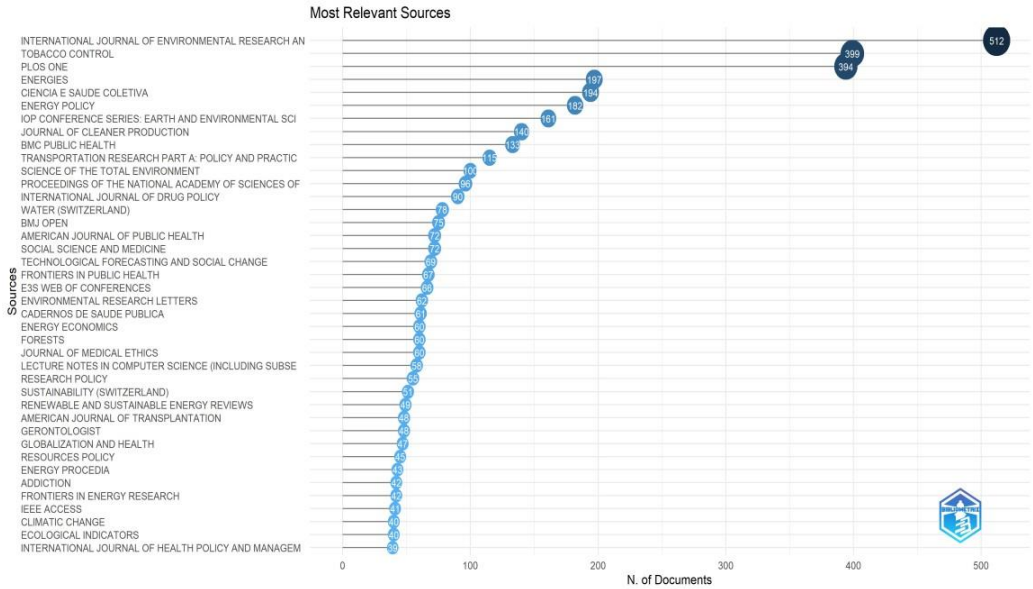
Types and Number of Publication Documents 2013-2023

Source: Biblioshiny data processing results in 2023.

The data above shows that the majority of publications on public policy have the type of article document. This condition shows that the author's interest in publishing his research in the form of articles published in Scopus indexed international journals is very large.

Figure 2.

Trends in Article Publication by Journal



Source: Biblioshiny data processing results in 2023.

Judging from the number of articles based on journals in table 1, it can be seen that the articles with the most publications are articles published in the International Journal of Environmental Research (Switzerland) journal with Q2 scopus index with 512 publications. Then

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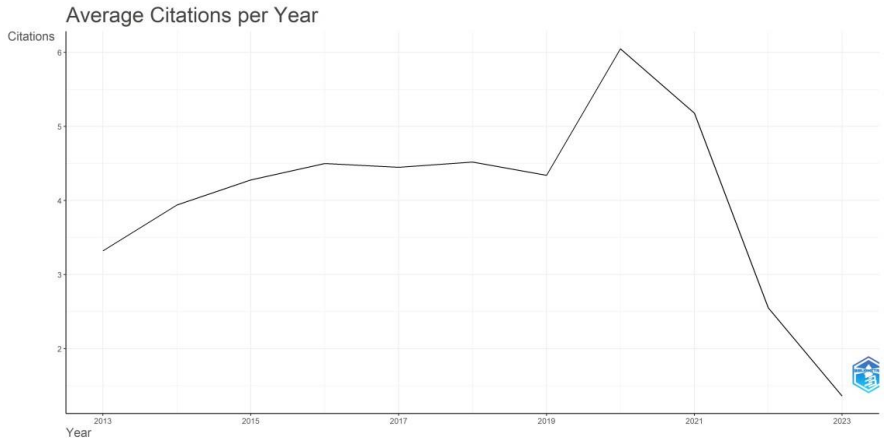
followed by journals with Q1 scopus index Tobacco Control with 399 publications, Ploss One with 394 publications, Energies with Q1 index with 197 publications, Ciencia E Saude Coletiva with Q2 index with 194 publications and Energy policy with Q1 index with 182 publications. It can be seen from the existing data that most of the article publications were published in Q1 reputable journals.

In terms of research productivity in the field of public policy which can be seen and measured by the number of citations from 2013-2023 by using biblioshiny software using the Scopus database shows that the average citation from 2013 to 2023 has increased and decreased. The most noticeable decrease occurred in 2021 with an average of 3.3 to 1.8 in 2022. as much as 43.13 or an average writing of 20.08. This can be seen in the graph below.

Graph 2.

Average Citation per Year 2013-2023



Source: Biblioshiny data processing results in 2023.

When viewed from the distribution based on the author's country of affiliation seen in Table 1, it can be seen that the majority of authors come from the USA, with a total of 12422 publications. Followed by the USA as many as 2493, UK as many as 1225, China as many as 909 publications, and Brazil 743 publication. As for the number of documents and the total network between authors can be seen in
table 1 below.

Tabel 1.

Corresponding Author's Countries

Country	Articles	SCP	MCP	Freq	MCP_Ratio
USA	2493	1943	550	0,201	0,221
	1985	1591	394	0,16	0,198
UNITED KINGDOM	1225	756	469	0,099	0,383

ISSN Print: 2686-6242, ISSN Online: 2686-6250
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Country	Articles	SCP	MCP	Freq	MCP_Ratio
CHINA	909	618	291	0,073	0,32
BRAZIL	743	590	153	0,06	0,206
AUSTRALIA	560	355	205	0,045	0,366
CANADA	490	301	189	0,039	0,386
SPAIN	292	191	101	0,024	0,346
NETHERLANDS	281	165	116	0,023	0,413
GERMANY	243	131	112	0,02	0,461

Source: Biblioshiny data processing results in 2023.

Mapping Public Policy Research

In analyzing the keywords in the article, the author finds and generates a word cloud for the keywords of the article writing using biblioshiny. Using 12422 documents, the results of the word cloud are presented in Figure 1.

In the figure, it can be seen that the word that often appears is public policy as much as 12536 used from published articles. These keywords illustrate words that represent several keywords related to public policy research. From the keyword search, it is illustrated that public policy will be related to human, public health, covid-19, economics, and others as shown below.

Figure 3.

Word Cloud of Keywords

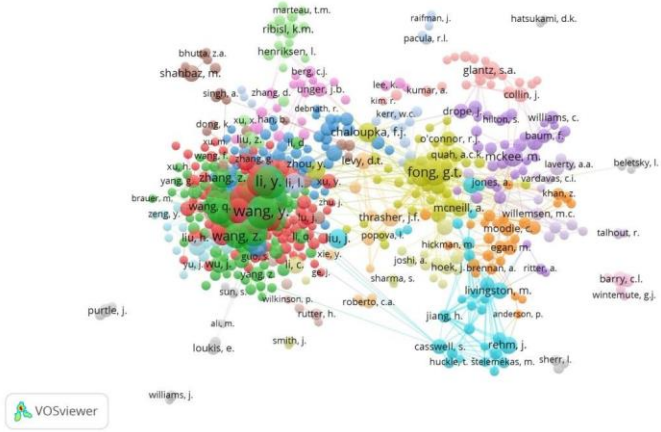
Source: Biblioshiny data processing results in 2023.

Furthermore, the mapping of public policy research using Vosviewer through the Scopus database from 2013-2023 will show the public policy research network. This picture will also show the renewal of public policy research as part of the author's contribution to the development of public policy research. The types of analysis on vosviewer can be in the form of co-authorship, co-occurrence, citation bibliographic coupling and co-citation (van Eck & Waltman, 2013). The type of analysis in this research is co-authorship analysis, which is an analysis feature used in visualizing the unit of analysis in the form of relationships between authors, relationships between author affiliation countries, and author organizations.

ISSN Print: 2686-6242, ISSN Online: 2686-6250
https://doi.org/10.30589/proceedings.2024.1168

Figure 4.

Co-authorship Analysis Units by Authors



Source: Vosviewer data processing results in 2023

Figure 4 shows the unit of analysis seen from the relationship between authors in producing articles. In this unit of analysis, the relationship between authors is determined by looking at the publication of at least 1 article. From the analysis results, 25 clusters were formed. This cluster shows that there are 25 articles written by one or more authors that will form into groups.

The cluster with the largest group of authors consisting of 76 authors only formed 1 cluster. The other clusters are 74 authors consisting of 1 cluster, 57 authors divided into 1 cluster, 39 authors have 1 cluster, 35 authors formed 1 cluster, 29 authors formed 1 cluster, 27 authors formed 1 cluster, 26 authors formed 1 cluster, 20 authors formed 2 clusters, 19 authors formed 2 clusters, 18 authors formed 1 cluster, 16 authors formed 2 clusters, 11 authors formed 1 cluster, 8 authors formed 1 cluster, 5 authors formed 1 cluster, 3 authors formed 4 clusters, 2 authors formed 2 clusters. While individual authors are not formed. When viewed from the distribution, it can be seen that of the 35 articles written on the Scopus database, the writing is dominated by articles written by 4 and 3 people / authors with the number of articles written by 8 articles each.

After describing publication trends, citations and co-authorship relationships between authors, the next question to be answered is how the development of public policy publications. In the Vosviewer application, to see the development of publications can be used by using the analysis type menu based on co-occurrence. This co-occurrence type is used in describing the keywords used in the article. In this study, co-occurrence was analyzed based on keywords determined by the author (author's keywords) with the provision that the selected keywords

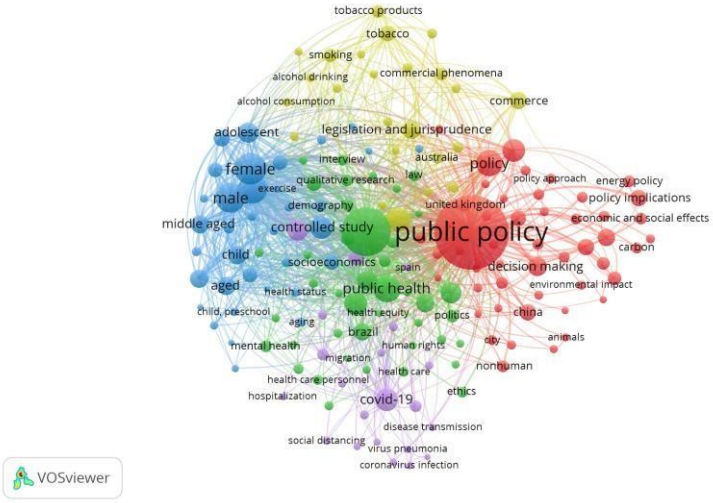
ISSN Print: 2686-6242, ISSN Online: 2686-6250
https://doi.org/10.30589/proceedings.2024.1168

appear at least once in the article by the author in the abstract, title and keywords section of the article.

Of the 250 keywords, after sorting out the relevant keywords, 172 keywords were analyzed. From 172 selected keywords and displayed in network visualization, the network visualization results are shown in Figure 5. From the results of data processing using Vosviewer, 5 clusters with 172 items were obtained. Cluster 1 consists of 50 items, Cluster 2 consists of 42 items, Cluster 3 consists of 35 items, Cluster 4 consists of 24 items, and Cluster 5 consists of 21 items.

Figure 5.

Overview of the Public Policy Research Network



Source: Vosviewer data processing results in 2023

Cluster 1 marked in red consists of the words agriculture, air pollution, animal, animlas, carbon, china, cities, climate change, comparative study, policy, policy analysis, policy making, and others. The most used word in this cluster is public policy. Cluster 2 is marked in green, consisting of the words, clinical article, education, ethics, funding, government, human, human rights, health, law, and others. The most common word found in this cluster is human. Cluster 3 is marked in Blue, consisting of the words adult, aged, child, socieconomics, health, and others. The most used word is gender. Cluster 4 is marked in Yellow, consisting of the words alcohol drinking, commerce, marketing, smoking, and others. The most common word found in this cluster is Commerce. Cluster 5 is marked in Purple, consisting of the words coronavirus, covid-19, epidemic, epidemiology, social media, mortality, and others. The most common word found in this cluster is covid-19.

ISSN Print: 2686-6242, ISSN Online: 2686-6250
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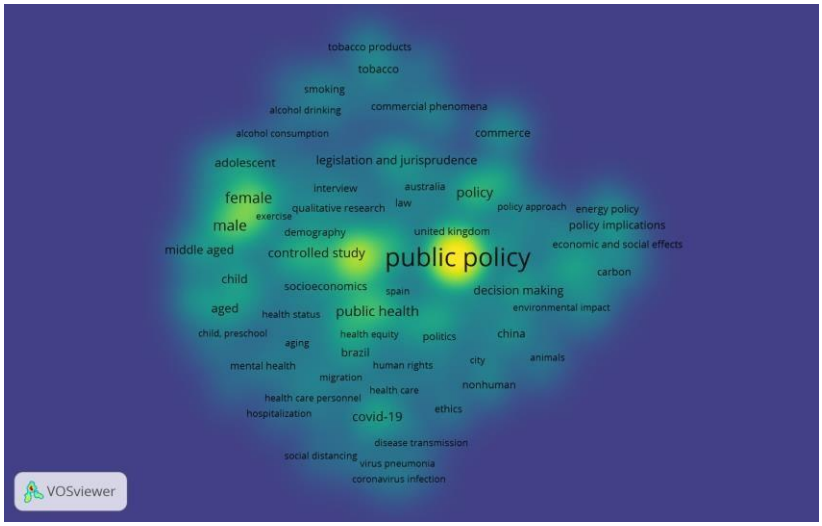
From the network description above, it shows that public policy research has a network according to the issues that will be resolved through public policy interventions, such as government, environmental policy, health, climate change, sustainable development, and other issues that will be resolved. Furthermore, policy research also has a network with policy processes, such as policy formulation, policy implementation, and policy impact, and has a network with several issues related to other policy processes.

In addition to seeing the mapping of keywords that are the focus of article writing, other mapping can be done by looking at the publication history related to related topics. The vosviewer application can create a publication history visualization with the overlay visualization menu. Publication history is depicted by the density of green and yellow colors. The darker the color of the circle, the longer the article was published, and the brighter (yellow) the color of the circle (item), the more recently the item was published (Li et al., 2022; Ubasart-González & Minteguiaga, 2022). Furthermore, when viewed from the density of public policy research, it shows that research related to economics, policymaking, education, and politics marked in green with a dense density indicates research that is still rarely researched by previous studies. Meanwhile, public policy and issues related to governance, policy, epidemiology, economics, climate change, and sustainable development have been studied by many previous researchers. This can be seen in the figure below.

Figure 6.

Overview of Density of Public Policy Research



Source: Vosviewer data processing results in 2023

In addition to seeing keyword mapping and article writing density, other mapping can be done by looking at publication history related to related topics. The Vosviewer application can

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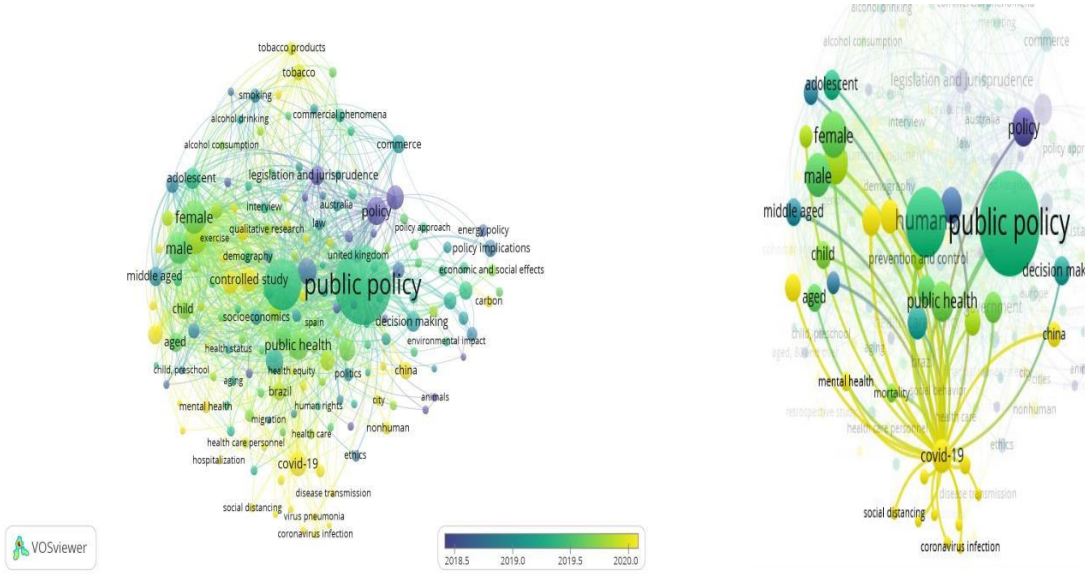
create a publication history visualization with the overlay visualization menu. Publication history is depicted by the density of green and yellow colors. The darker the color of the circle, the longer the article was published, and the brighter (yellow) the color of the circle (item), the more recently the item was published. From the processed results of publication visualization, it can be seen that publications related to public policy are dominated by public policy and human, as seen in the image of the sphere on the public policy and human items is the largest sphere with a bright green color. When viewed from research updates seen from the year of publication and associated with the theme of public policy research, it can be seen that research published between 2013-2023 which is shown in yellow and yellowish green is research related to covid-19, public health, climate change, city policy, child protection policy, and pregnancy. Therefore, policy research should be directed at specific issues so that it will result in the renewal of public policy research. This can be seen in the figure below.

Figure 7.

Novelty of Public Policy Research



Source: Vosviewer data processing results in 2023

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ISSN Print: 2686-6242, ISSN Online: 2686-6250
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