Bibliometric Studies and Public Administration Research Potential on Stunting Problems

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ABSTRACT

Stunting is an urgent issue that must be addressed immediately because it will affect the quality of Indonesia's human resources in the future. Human resources are the essential factor that determines the success of a country. This research aims to examine the development of stunting research in 2017-2022. Bibliometrics helps communicate discipline developments for other research purposes. This research aims to map the development of stunting research in 2017-2022. The findings of this study can be a starting point for further research on stunting. The research method employed was quasi-qualitative and bibliometric analysis. The research data is from articles from Google Scholar metadata for 2017-2022. The keyword "stunting" for screening articles and journals must be indexed on Google Scholar or SCOPUS. The results of this study indicate that the 994 articles indexed in Google Scholar and SCOPUS are indexed research articles. Trends in public administration research topics include policy implementation, policy evaluation, government, innovation, and community participation and potential for further research related to the study of collaborative governance within the framework of cooperation and effective institutional models for stunting.

ABSTRAK

Stunting merupakan masalah mendesak yang harus segera diatasi karena akan mempengaruhi kualitas sumber daya manusia Indonesia di masa mendatang. Sumber daya manusia merupakan faktor penting yang menentukan keberhasilan suatu negara. Penelitian ini bertujuan untuk mengkaji perkembangan penelitian stunting tahun 2017-2022. Bibliometrics membantu mengkomunikasikan perkembangan disiplin untuk tujuan penelitian lainnya. Penelitian ini bertujuan untuk memetakan perkembangan penelitian stunting tahun 2017-2022. Temuan penelitian ini dapat menjadi titik awal untuk penelitian lebih lanjut tentang stunting. Metode penelitian yang digunakan adalah kuasi-kualitatif dan analisis bibliometrik. Data penelitian berasal dari artikel metadata Google Scholar tahun 2017-2022. Kata kunci "stunting" untuk screening artikel dan jurnal harus terindeks di Google Scholar atau SCOPUS. Hasil penelitian ini menunjukkan bahwa 994 artikel yang terindeks di Google Scholar dan SCOPUS merupakan artikel penelitian yang terindeks. Tren topik penelitian administrasi publik antara lain implementasi kebijakan, evaluasi kebijakan, pemerintahan, inovasi, dan partisipasi masyarakat serta potensi untuk penelitian lebih lanjut terkait kajian collaborative governance dalam kerangka kerja sama dan model kelembagaan yang efektif untuk stunting.

INTRODUCTION

The incidence of short toddlers, commonly known as stunting, is one of the nutritional problems experienced by toddlers in the world today (Alqaoud & Al-Taiar, 2022). more than

half of the stunted toddlers in the world come from Asia (55%), while more than a third (39%) live in Africa. Of the 83.6 million stunted children under five in Asia, the highest proportion came from South Asia (58.7%), and the minor proportion from Central Asia (0.9%). Data on the prevalence of stunting under five collected by the World Health Organization (WHO) shows that Indonesia is included as the third country with the highest prevalence in the Southeast Asia/South-East Asia Regional (SEAR) region (Saputri & Tumangger, 2019).

Based on data from the 2021 Indonesian Toddler Nutrition Status Survey (SSGBI), the prevalence of stunting is currently still at 24.4 percent or 5.33 million children under five. The prevalence of stunting has decreased in previous years (Saufi et al., 2021). The Indonesian government targets the stunting rate to drop by 14 percent in 2024. The main nutritional problem that is being faced in Indonesia. If this problem is chronic, it will affect cognitive function, namely a low level of intelligence, and impact the quality of human resources (Sampara & Saleng, 2022). The problem of stunting has quite a severe impact; among other things, the short term is related to morbidity and mortality in infants/toddlers, the medium term is related to low intellectuality and cognitive ability, and the long term is associated with the quality of human resources and degenerative disease problems in adulthood (Kinanti & Yusran, 2022),(Azzahra, 2022).

Meanwhile, children are the nation's assets in the future. You can imagine how Indonesia's human resources will be in the future if there are currently many Indonesian children suffering from stunting (Bilgiler et al., 2022). This nation will not be able to compete with other countries in facing global challenges. So, to prevent this, the problem of stunting must be taken seriously immediately.

International experience and evidence show that stunting can hinder economic growth and reduce labor market productivity, resulting in a loss of 11% of GDP (Gross Domestic Product) and reducing the income of adult workers by up to 20%. In addition, stunting can also contribute to widening inequality, reducing 10% of total lifetime income and causing inter-generational poverty (Zegeye et al., 2021).

The generation that grows optimally, aka not stunting, has a better level of intelligence, which will provide good competitiveness in the field of development and the economy (Putri et al., 2022). Besides that, optimal growth can reduce the burden of the risk of degenerative diseases as residual effects carried from the womb. Degenerative diseases, such as diabetes, hypertension, heart, and kidney, require high medical costs. Thus, if stunting growth can be prevented, economic growth can be better without being burdened by the costs of treating degenerative diseases (Sari & Yusran, 2022).

Handling stunting is a social problem that involves the Government's role as a public service provider. Therefore success in handling stunting must be connected to the Government's function as a public service provider in making regulations and public policies. These government activities can be in the form of educating the public, strengthening community institutions, and providing health facilities.

The government has made many efforts to reduce the stunting rate in Indonesia. This can be seen from the 2021 Indonesian Nutritional Status Survey (SSGI) conducted by the Ministry of Health. The stunting prevalence rate in Indonesia in 2021 is 24.4%, or a decrease of 6.4% from 30.8% in 2018. However, even so, this reduction still needs to be targeted (Mayfitriana et al., 2022).

The fact is that program implementers and the Community see the problem of stunting as if it still sounds foreign. Many people still need to learn about stunting in terms of its definition, causes, impacts, and countermeasures that can be taken (Herawati & Sunjaya, 2022). This is in stark contrast to the conditions where the government has issued many policies and poured out many funds for stunting prevention programs which, of course, should reach and be felt by the Community (Riwayati et al., 2022).

Policies regarding stunting require cooperation from various actors other than the government, namely the private sector, academia, civil society, and the mass media (Afandi et al., 2022). Collaborative frameworks and institutional models should be created in resource exchanges between actors to accelerate the achievement of stunting reduction goals, but this has yet to be seen in previous studies. Paradigm in public administration in stunting prevention can be seen in the form of collaborative governance to see the scientific contribution of the development of research conducted related to the problem of stunting (Purnamasari & Priyanti, 2021).

To increase this research, it is necessary to have precise information related to research trends that occur with research mapping so that topics of discussion that are already saturated with research are not repeated and research developments are more significant. Bibliometrics is often used to map research developments in various disciplines. The use of bibliometric analysis in research on stunting is still rare, so there is no description of research trends that have occurred even though progress has occurred in real terms. This strengthens the background of this research to be conducted as an initial identification of researchers who are interested in this topic to be able to see trends, topics, and methods that are often used.

Several studies that have been carried out include Prasetyo, A et al (2023) conducting research Framework for Stunting Convergence Management through System Integration Based on Regional Service Governance as a result of research by local governments that need to socialize and commit to reducing stunting to encourage all parties to contribute integrated into efforts to reduce stunting actively.

Then the research by (Klemm et al., 2022)Translating multisectoral nutrition policy into community practice: Participation of Nutrition Officers in Tanzania drives effective collaborative strategies to improve child nutrition. The research results succeeded in forming an action team that bridged the communication gap between managers and implementers; with advances in advocacy, collaboration, and budgeting for nutrition; and implementing MSN in society.

Research by (Pangkey et al., 2022) Collaborative Governance in Handling Stunting in Bolaang Mongondow Regency results of research on Collaborative governance processes through face-to-face dialogue; Coordination Meetings are held to build trust from all sectors to play an active role and government commitment.

Bibliometric analysis is used to map research in this study, and the issuance of Presidential Regulation No. 72 of 2021 concerning accelerating the reduction of stunting is the background for mapping research on stunting starting from 2017 to 2022. Therefore, this research is expected to help future researchers interested in the field of stunting to find out what topics have been researched and which have not been researched, as well as topics currently being explored or already saturated with research. The results of this study can be an initial recommendation to review research related to stunting.

Literature Review

The role of public services to overcome stunting

To overcome the problem of stunting, the government, in this case, can play the following roles: (1) a catalyst, namely the government's position as an agent that accelerates the development of regional potentials (Zuhdi, S., Ferizko, A., & Melinda, 2019), such as making policies on stunting, forming institutions in the community so that it can become social capital to build participation in handling stunting (2) the facilitator provides facilities and infrastructure, provides capital, provides education and training, provides counseling and assistance to the community in handling stunting (Saputra, T., Yandra, A., Zahra, M., Eka, E., & Sufi, 2022), (3) the dynamist is to mobilize community participation if there are obstacles in the development process to encourage and maintain the dynamics of regional development by provide understanding and insight into the importance of nutritional intake in pregnant women as well as clean and healthy lifestyle behaviors (Prasetyo et al., 2023).

Stunting

Stunting is one of the goals of the Sustainable Development Goals (SDG) contained in the 2nd Goal of Sustainable Development, which is "End hunger, achieve food security, improve nutrition, and promote sustainable agriculture by 2030" (Mayfitriana et al., 2022). The goal is to reduce the stunting rate by 40% by 2025 to reduce stunting globally and nationally because the deformation problem is closely related to the quality of human resources in the future (Herawati & Sunjaya, 2022).

The effect caused by stunting is growth retardation which can be divided into short-term and long-term effects. The short-term effects include increased incidence of morbidity and mortality; nonoptimal cognitive, motoric, and verbal development in children; increased health costs. Meanwhile, the long-term effects include nonoptimal body posture in adulthood (shorter than normal/average height), increased risk of obesity and other diseases; reproductive health disorders; nonoptimal learning ability and performance at school, as well as a decrease in productivity and workability (Saputri & Tumangger, 2019).

Stunting is caused by multidimensional factors and not only by malnutrition experienced by pregnant women and children under the age of 5 years. Therefore, the most critical steps to reduce stunting must be implemented in the first 1000 days of life in children under 5 years of age (Fitrotuzzaqiyah & Rahayu, 2022).

Bibliometrics

Bibliometrics can be interpreted as a set of quantitative measurements whose purpose is to evaluate the impact and results of research (Purnomo, 2019). Bibliometrics comes from the word bible, meaning book, and metric, meaning measure, and can also be interpreted as a metric study of the development of literature. According to the process definition, bibliometrics is research that measures the development of research, literature, books, or documents in specific fields both quantitatively and qualitatively using statistical methods (Hakim, 2020).

Meanwhile, another opinion suggests that bibliometrics is a study of bibliographic analysis of scientific activities, which assumes that researchers carry out their research and must communicate the results to their colleagues (Rachmawati, R., Data, P., & Lipi,

2020). It can be said that Bibliometrics analysis is a communication tool for the results of previous studies. This is supported by the view that bibliometrics can historically provide a macro overview of scientific publications in a specific research area. Thus, bibliometrics is a study that quantitatively and qualitatively measures the development of scientific activities through the literature to evaluate the impact and results of research for more effective research in the future.

Co-word Analysis

Word analysis assumes that the article keywords are sufficient descriptions to represent the article's contents. This technique describes the relationships between keywords by building a network that highlights the connections between keywords and shows where the relationships between networks can occur. Keyword analysis aims to analyze documents' content, patterns, and trends by measuring the relationship between keyword strength. The co-convergence analysis is also used to group documents and identify groups of documents with the same topic. According to (Basuki, 2002),"word-based mapping, in general, is mapping based on the frequency of occurrence of words in documents (or titles and/or abstracts)". The more often the exact keywords appear in a particular group of articles, the closer the relationships between the articles. So we can use the visible keyword intensity to estimate how important a particular field appears in the mapping. The results of this method can be used to map trends and developments in current research topics (Farida, 2020).

Subject Analysis

Subject analysis (content analysis) is a method of collecting research data using observation techniques and analysis of the contents of documents or messages (Indriantoro, 2016). Through this method, the characteristics of the documents to be examined are identified to obtain an objective and systematic explanation of the subject matter of the examination. Therefore, in general, quantitative content analysis is a scientific research technique whose goal is to describe the characteristics of the content and draw conclusions about the content. The content analysis aims to systematically identify visible communications in an objective, valid, reliable, and repeatable manner. For the results of this analysis to be available in content classification, coding was carried out based on the characteristics of the documents or events studied.

Based on the results of previous research, there are differences in the research studies conducted where this research focuses on the problem of stunting in public administration studies. Research (Komedi, 2022) aims to provide an overview of research developments regarding government intervention in stunting through policies. Using bibliometric analysis, the research recommends studies on government, political commitment, conflict, maternal child marriage, digital skills, and access. Then (Novi Yulianti et al., 2022) with a bibliometric analysis of the determinants of stunting in toddlers. Research results: Many researchers are still interested in conducting research due to high stunting rates and a need for more public understanding of knowledge and prevention of stunting. This is the same as Ijaiya's research (Ijaiya et al., 2021), with a study of malnutrition in Africa using the bibliometric analysis method using PubMed data sources. However, of the several studies conducted, they have yet to focus on the study of public administration. This research is expected to contribute to the study of public administration.

RESEARCH METHODS

The research method employed was quasi-qualitative. This research approach is one of the outlines of the post-positivist paradigm. The quasi-qualitative approach is a research where the use of theory as a research tool is still possible because the researcher finds a problem and then collects data for analysis. A bibliometric study was used to measure research progress using bibliographical information in research articles (Saputra et al., 2021). The materials used in this research were documentaries in the form of scientific articles. The data sources used in this research were secondary data.

Secondary article data collection was created using Harzing's Publish or Perish V.7.25 software as a search engine for articles entitled "Stunting". The period 2017–2022 was set as the publication deadline for this study. The following criteria were defined for research journals indexed by Google Scholar or SCOPUS. (Coyne, J. G., Summers, S. L., Williams, B., & Wood, 2010). The thematic analysis and word analysis were mainly used to classify the articles analyzed in this study and to map the development of stunting research. The grouping of this article is based on the classification proposed by (Indriantoro, 2016) and on public administration subjects.

Table 1.
Article Collection Criteria

No	Criteria	Note
1	Title word	Stunting
2	Keyword	Stunting
3	Publication Period	2017-2022
4	Journal	Index Sinta and Scopus

Source: processed data (2022)

RESULTS AND DISCUSSIONS

Number of "Stunting" articles published from 2017 – 2022

Based on the search results using Harzing's Publish or Perish V.7.25 software with the keyword "stunting" in this search, several articles related to stunting were collected. This data was collected from Google Scholar with a period of 2017 – 2022 associated with the publication of Stunting articles. From the search results through Harzing's Publish or Perish V.7.25, 296 articles were found in Indonesian and 698 in English.

Table 2.
Article search results using Harzing's Publish or Perish V.7.25

Indonesia		International	
Year	Number of articles	Year	Number of articles
2017	8	2017	41
2018	16	2018	62
2019	30	2019	80
2020	66	2020	147
2021	81	2021	153
2022	114	2022	196
Total	296	Total	698

Source: research result (2022)

The increase in research articles is illustrated in Table 2 from 2017 to 2022. The highest development of stunting research article publications occurred in 2022, reaching 310 articles. The initial study of stunting began to be widely studied in 2021 and 2022, which has increased from the previous years. This increase has almost tripled every year from 2017 to 2020.

Table 3.
Number of "Stunting" article publications from 2017 – 2022

Year	Number of Articles	Percentage
2017	49	4%
2018	78	7%
2019	110	11%
2020	213	22%
2021	234	24%
2022	310	32%
Total	994	100%

Source: research result (2022)

The growth in the number of publications that occurs is an indirect impact of the regulations that have been in force. Presidential Regulation No. 72 of 2021 concerning accelerating the reduction of stunting has positively impacted the progress and success of reducing stunting in various regions. This is a new concern for researchers to contribute to this success by conducting research related to stunting, which indirectly impacts stunting prevention. This government achievement needs support from various research studies conducted by researchers. As a starting point for research growth, 2021 and 2022 is a process of identifying whether the topic in stunting research is fascinating. This is again related to stunting development, which has been insignificant in the past two years. From 2021 until now, it has become a golden period for stunting to become an exciting forum for scientific studies for researchers to explore.

Contribution of Authors, Journals, and Institutions to Stunting research articles

The productivity of researchers related to stunting from 994 journal articles indexed in Google Sholar and SCOPUS shows that there are writers with a significant contribution to the number of their writings. The major contributor to research on stunting was Dewi, ylr, with 11 published articles, followed by Akseer with 8 articles, and Murti, b with 7 articles. Furthermore, Yunitasari, e wrote 6 articles. Meanwhile, Hermanussen, m, Scheffler, c, Salimo, h, Masrul, m and Siswati, t wrote 5 articles each. Following Table 4 for authors, apart from the remaining tables, each author has four and one research article related to stunting.

Table 4.
Contributors to Research in Stunting

Authors	Number of Articles
Dewi, ylr	11
Akseer, n	8
Murti, b	7
Yunitasari,e	6
Hermanussen, m	5
Scheffler, c	5
Salimo, h	5

Authors	Number of Articles
Masrul, m	5
Siswati, t	5

Source: research result (2022)

Based on the analysis illustrated in Table 5, the productivity of journals that publish research on stunting is primarily found in the Macedonian Journal of Medical Sciences and the Indian Journal of Fisheries, with 62 published articles. The International Journal of Environmental Research and Public Health and The Journal of Maternal and Child Health are the second most productive journal to publish Stunting research, with 45 research articles. Furthermore, the EurAsian Journal of Biosciences became the third most productive journal, along with The American journal of clinical nutrition, with 34 published articles. Then the BMJ Journal published 11 research articles, and others published 1-10 research articles on stunting per journal.

Table 5.
Journal Productivity on Stunting

Journal	Number of Articles
The American journal of clinical nutrition	15
BMJ Journal	11
EurAsian Journal of Biosciences	19
Indian Journal of Fisheries	25
International Journal of Environmental Research and Public Health	21
Journal of Maternal and Child Health	24
Macedonian journal of medical sciences	37

Source: research result (2022)

At the institutional level, based on the results of the analysis following Table 6, it shows that the Universitas Sebelas Maret, Indonesia, is the institution that has published the most research related to stunting. Next, the Center for Global Child Health, Hospital for Sick Children, Toronto, Canada, with the publication of 8 articles on Stunting research, became the second most productive institution in this study. It was followed by Universitas Airlangga, Indonesia, with 6 research articles on stunting, and other institutions, with 5 research articles on stunting.

Table 6.
The Contribution of Institutions in Research on Stunting

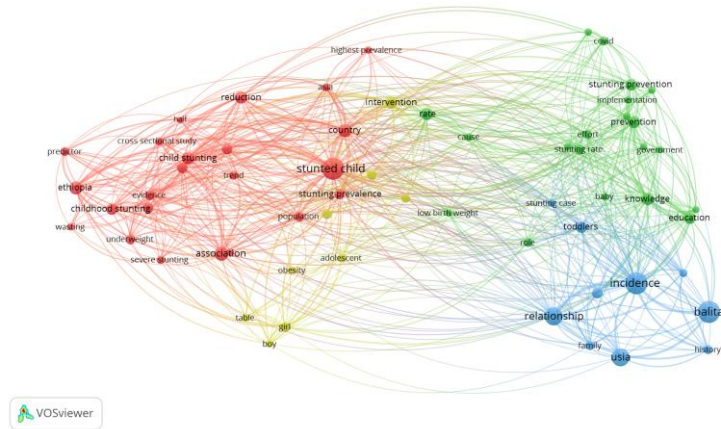| Institution	Number of articles
Universitas sebelas maret, Indonesia	23
Centre for Global Child Health, Hospital for Sick Children, Toronto, Canada	8
Universitas Airlangga, Indonesia	6
University of Kiel, Kiel, F.R. Germany	5
The University of Potsdam, Institute of Biochemistry and Biology	5
Universitas Andalas	5
Poltekkes Kemenkes Yogyakarta	5

Source: processed data (2022)

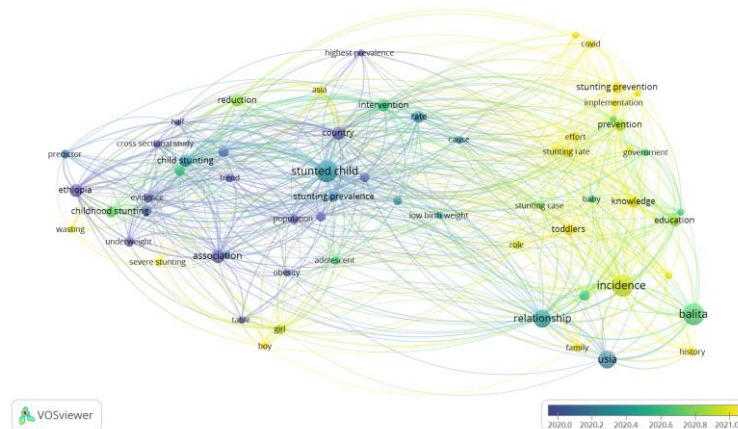**Stunting research trend mapping from 2017-2022**

Co-word analysis is a way to understand the dynamics of science because it is based on the assumption that the keywords of an article are descriptions that can be used as representations of the contents of the content (Farida, 2020). The results of the co-word analysis found that there were 994 keywords in the stunting research. Using a minimum of 10 linkages, it produces 118 keywords divided into 4 clusters. The results of keyword linkages based on processing from the VOS Viewer include Stunted child, childhood stunting, the prevalence of stunting, obesity, adolescence, severe stunting, government, education, India, Implementation, government, effort, stunting rate, stunting prevention, intervention, covid, knowledge, pandemic, incidence, toddlers, relationship, toddlers, history, stunting case, family, nutritional problems, stunted growth, exclusive breastfeeding, Community, incidence, stunted growth, stunting prevention, child stunting, Ethiopia, effectiveness, toddlers. Overall the keywords in the research can be seen in Figure 1, which was analyzed through the VOS Viewer.

Figure 1.
Network Visualization

Source: research result (2022)

Figure 2.
Overlay Visualization

Source: research result (2022)

Figure 3.
Density Visualization

Source: research result (2022)

The results of this analysis can be used as an overview and trend of research topics widely conducted from 2017-2022. In Figure 1, the more often the keyword is used, the larger the circle will appear in the analysis results. The connecting lines between keywords show how often they are used together in a publication. The thicker and more lines, the more frequently these keywords appear in the publication. The Overlay Visualization shows the year of publication. The lighter color, the newer the research; conversely, the darker the color displayed, the older the year of study. Then, the Density Visualization on the VOS Viewer processed results depicts the color point of each keyword in the article based on the density of the number of items associated with other items. In Figure 3, it can also be seen that the clearer the yellow color is produced, the more discussions with these keywords are discussed.

More specifically, keyword mapping is divided based on several clusters. Cluster-based grouping is used to find relationships between keywords in research articles (Farida, 2020). The details of the keyword clusters in the stunting research can be seen in Table 10 as follows:

Table 7.
Cluster details of co-word analysis results

Keyword cluster distribution	
Cluster 1	Stunted child, childhood stunting, prevalence stunting, obesity, adolescence, severe stunting, government, education, India
Cluster 2	Implementation, government, effort, stunting rate, stunting prevention, intervention, covid, knowledge, pandemic
Cluster 3	Incidence, toddlers/balita, relationship, history, stunting case, family, nutritional problem, stunted growth, exclusive breastfeeding
Cluster 4	Community, incidence, stunted growth, stunting prevention, child stunting, Ethiopia, effectiveness, toddlers

Source: research result (2022)

a) Cluster 1

The keywords in cluster 1 consist of 7 keywords: stunted child, childhood stunting, the prevalence of stunting, obesity, adolescence, severe stunting, and education. This set of keywords indicates publications related to stunting which focus on overcoming stunting in the health aspect.

b) Cluster 2

The keywords in cluster 2 consist of 9 keywords: Implementation, government, effort, stunting rate, stunting prevention, intervention, covid, knowledge, and pandemic. This set of keywords indicates publications related to stunting, focusing on implementing and managing stunting prevention during the covid pandemic.

c) Cluster 3

The keywords in cluster 3 consist of 11 keywords: incidence, toddlers/Balita, relationship, history, stunting cases, family, nutritional problems, stunted growth, and exclusive breastfeeding. This set of keywords indicates publications related to stunting with a discussion focusing on stunting behavior.

d) Cluster 4

The keywords in cluster 4 consist of 8 keywords: Community, incidence, stunted growth, stunting prevention, child stunting, Ethiopia, effectiveness, and toddlers. Stunting is related to people's welfare. Therefore, it is necessary to participate in preventing stunting, one of which is by empowering the Community.

Trends in Public Administration Topics and Research Methods in Stunting Research Articles Every Year from 2017-2022

The distribution of topics discussed in the stunting research related to public administration can be seen in Table 8. The distribution of research topics by (Coyne, J. G., Summers, S. L., Williams, B., & Wood, 2010) consists of policy implementation, policy evaluation, empowerment, community participation, government, and innovation. Thus, all of the research articles that have been collected are classified according to these 6 groups. If the article's topic is not a Public Administration topic, it will be classified as another non-Public Administration topic.

Table 8.
Public Administration Topics in Stunting Research from 2017-2022

The Field of Public Administration	2017	2018	2019	2020	2021	2022	Total
	N	n	N	n	n	n	
Policy Implementation	1	1	1	3	2	4	12
Policy Evaluation	2	-	-	1	2	-	5

The Field of Public Administration	2017	2018	2019	2020	2021	2022	Total
	N	n	N	n	n	n	
Empowerment	3	6	6	10	8	3	36
Community Participation	-	-	3	1	1	-	5
Government	-	-	3	1	-	-	4
Innovation	-	-	-	2	1	2	5
Total	6	7	13	18	13	9	69

Source: research result (2022)

The categorization is used for articles about collecting, managing, analyzing, and communicating public administration information in implementing stunting program policies. The results of the subject analysis show that in 2017, the topic of policy implementation was 1 research article, while it was primarily researched in 2022 with 4 articles. Meanwhile, the studies that focused on policy evaluation related to stunting prevention in 2017 were 2 articles, with no article mentioning it in 2018-2019. Furthermore, the empowerment category is intended for discussions about empowerment, education, and training related to stunting prevention. The analysis results show that the topic of empowerment is the most researched topic, with a total of 36 articles.

The topic of community participation first appeared in stunting research in 2019 with 3 research articles, and in 2020-2021 there was 1 research article. In 2020, the results of the analysis also discussed innovation in tackling stunting. The discussion focus on the latest model for reducing the impact of stunting by using information technology tools in early prevention related to stunting.

Future Research Potential

The recommendations for further research are to actively conduct scientific studies on the need for collaborative stunting management within a more effective institutional and collaborative framework. This is due to the unclear regulation and prevention of stunting; thus, scientific studies can indirectly cover these obstacles. The topic of discussion related to civil society participation is a recommended choice because it is in line with (Saufi et al., 2021) Saufi et al. (2021) that the involvement of stakeholders in tackling stunting is still low. Collaborative leadership is still centralized in policymaking, which shows that stunting implementation interventions still need to meet expectations (Afandi et al., 2022). This makes the need for research on collaborative governance in stunting prevention (Alqaoud & Al-Taiar, 2022).

CONCLUSIONS

Based on the results and discussion above, it can be concluded that the growth in the publication of scientific articles on stunting increased significantly from 2017 to 2022. The highest number of scientific article publications on stunting occurred in 2022, namely 310 articles (32%). The most productive institution in this study was Sebelas Maret University, and the scientific journal that published the most research on stunting was the Macedonian Journal of Medical Sciences. The level of productivity of the authors indicates the existence of writers with a significant contribution from the number of results of their writings with the contributions of the authors in this study, each of which amounts to 5-11 research articles.

The most researched topic is stunting prevention. This shows that this research focuses on health sciences; Meanwhile, public administration research is more focused on discussing stunting public governance and policies. The main problem is the weak policy related to the obligations of stakeholders in stunting prevention in accommodating the support of resources from the private sector, academia, civil society and the mass media. This makes the topic related to the implementation and evaluation of stunting policies the most researched. The need for collaborative governance creates an opening for further research. the practical implications of the research provide recommendations for strengthening governance in the handling of stunting by involving stakeholders. Scientific studies on the need for collaborative governance by looking at cooperative frameworks and more effective institutional models become research potentials. Therefore, limited resources can be overcome by collaborating with stakeholders.

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