

PalArch's Journal of Archaeology of Egypt / Egyptology

BIBLIOMETRIC ANALYSIS OF PUBLIC BUDGET ARTICLE IN SCOPUS USING SOSIAL NETWORK ANALYSIS

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Kusdiana, Entang Adhy Muhtar, Budiman Rusli, Heru Nurasa. Bibliometric Analysis Of Public Budget Article In Scopus Using Sosial Network Analysis-- Palarch's Journal Of Archaeology Of Egypt/Egyptology 19(1), 251-261. ISSN 1567-214x

Keywords: Bibliometric; Public Budget; VOS Viewer

ABSTRACT

The aim of this study was to analyse the bibliographic characteristics and content of articles on public budget published in journals indexed by Scopus written by researchers from throughout the world from 2011 to 2022. We conducted a bibliometric and content analysis of publication in the Scopus database. We only retrieved articles written in English. We conducted content analysis using the VOSviewer software and visualized the co-occurrence of keywords and bibliographic coupling of sources and countries. Following the study protocol, we found 290 articles on public budget over the past 11 years. The most productive journal that published these articles was *Revista de Administracao Publica* (n = 7). The most productive country was the United Kingdom (n = 82). Based on citations, the most influential authors were Z. Hessami (n = 70). The keywords of research on public budget 14 clusters (e.g budget, public budget, analysis, impact, public health, public policy, case, budget impact analysis). From a global perspective, public budget research in the past one decade has increased significantly. There were United Kingdom published journals dominated publications. Thus, Asian country need to conduct more active research on this topic.

INTRODUCTION

This article discusses the discourse public budget during the last one decade (2010-2021). The discourse understanding is inseparable from bibliometric analysis (Lee, 2020; Mifrah et al., 2020; Omoregbe et al., 2020; Saravanan & Dominic, 2014), referring to the incorporation of various frameworks and methods to analyze citations from scientific publications. Such attempt leads to the development of different metrics to gain insight into the intellectual structure

of a broad academic discipline and to evaluate the impact of a particular field of study (Akhavan et al., 2016; Putera, Suryanto, et al., 2020).

Although some researchers have produced public budget articles; we have not found research in bibliometric articles on public budget utilized social network analysis. This aim of this article was to provide useful data for understanding global publication trends regarding public budget. This study aimed to analyze the bibliographic characteristics and trends of articles on public budget published in journals indexed in Scopus written by researchers from throughout the world from 2011 to 2022 and to conduct an analysis of keyword co-occurrence using VOSviewer.

METHODS

This study did not involve human subjects; therefore, neither institutional review board approval nor informed consent was needed. This study was a descriptive and bibliometric analysis based on a literature database. The data in this study were retrieved from the Scopus database. To obtain the necessary data, this study used the keyword “public budget” in the title, abstracts, and author’s keywords. We also limited the searching criteria by only including articles in the last 11 years (2011 – 2022). In this step, we found 290 articles. In the next step, we downloaded the articles from the scopus database and analyzed the 290 articles that had been sorted by relevance.

In this study, the metadata and refined Scopus result values were retrieved in the RIS dataset format. However, before the bibliometric analysis, the consistency and reliability of the data were checked to address issues such as a lack of consistency in country names and keywords. The data were also standardized to ensure consistency regarding key words that sometimes appeared in singular or plural, abbreviations, or other forms. The data obtained from the Scopus database were analyzed using VOSviewer software, and simple statistics were calculated using Microsoft Excel.

RESULTS

Based on a search with the keyword “public budget”, the result showed approximately 290 documents. Most articles were listed Social Sciences (n = 65, 25 %), Business, Management and Accounting (n = 53, 21 %), Economic, Econometrics and Finance (n = 47, 18 %), Medicine (n = 37, 15 %) and Computer Science (n = 16, 6 %). The full distribution of public budget articles across the top 10 subject areas is shown in Fig. 1.

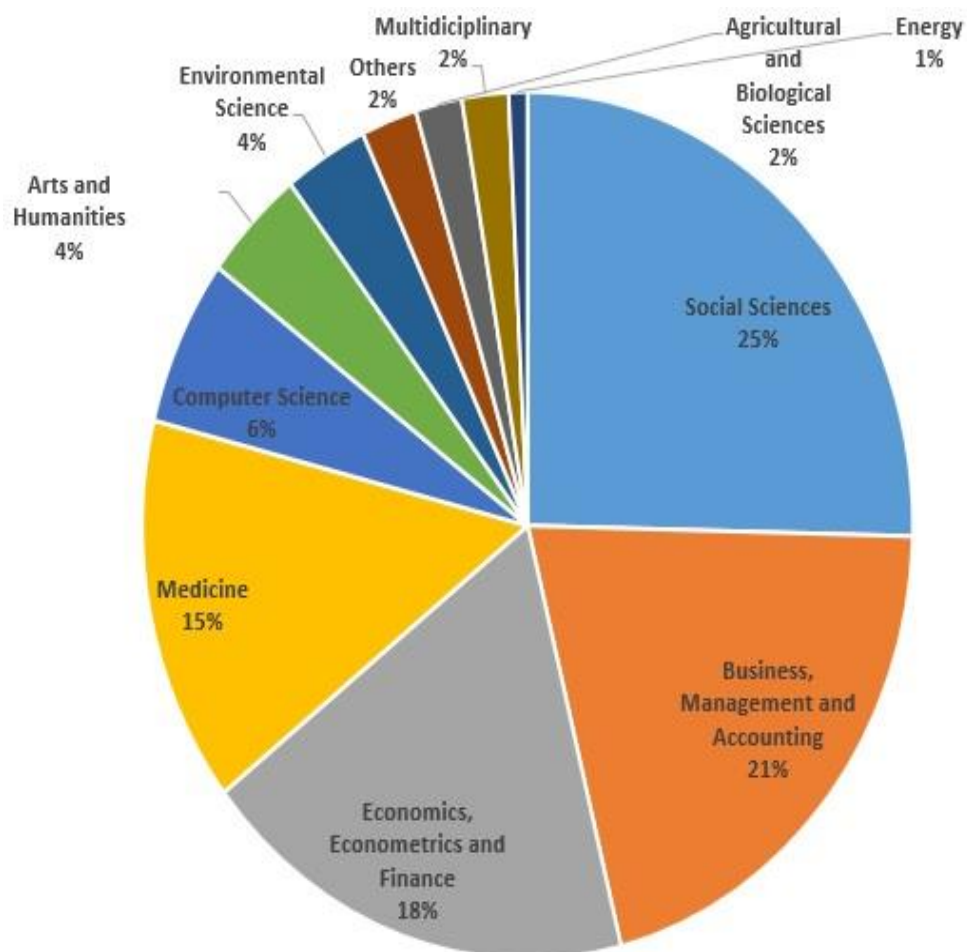


Fig. 1. Distribution of public budget based on subject area.

According to VOSviewer, the articles were published in 232 different journals. The highest number of articles were published in *Revista de Administracao Publica*, with 7 publications, followed by *BMJ (Clinical research ed.)* ($n = 6$), *Espacios* ($n = 5$), *International Journal of Public Administration* ($n = 4$), and *PLoS ONE* ($n = 4$). The other most productive journals with the most publications are shown in Table 1. There were four journals from United Kingdom, three journals from United States and one journals from Brazil, Venezuela, and Switzerland.

In the period 2011 to 2022, the United Kingdom was the country with the most publications on public budget, with 82 articles, followed by the United States with 53 articles. There were not the Asian countries ranked in the top 10 countries in terms of the most public budget publications. The top 10 countries can be seen in Fig. 2.

Table 1. The most production journals based on the number of publications

Rank	Journal	No. Of Publication	Country
1	Revista de Administracao Publica	7	Brazil
2	BMJ (Clinical research ed.)	6	United Kingdom
3	Espacios	5	Venezuela
4	International Journal of Public Administration	4	United States
5	PLoS ONE	4	United States
6	Public Budgeting and Finance	4	United States
7	Sustainability (Switzerland)	4	Switzerland
8	Australian Journal of Public Administration	3	United Kingdom
9	BMJ (Online)	3	United Kingdom
10	Gender-based Violence and Public Health: International Perspectives on Budgets and Policies	3	United Kingdom

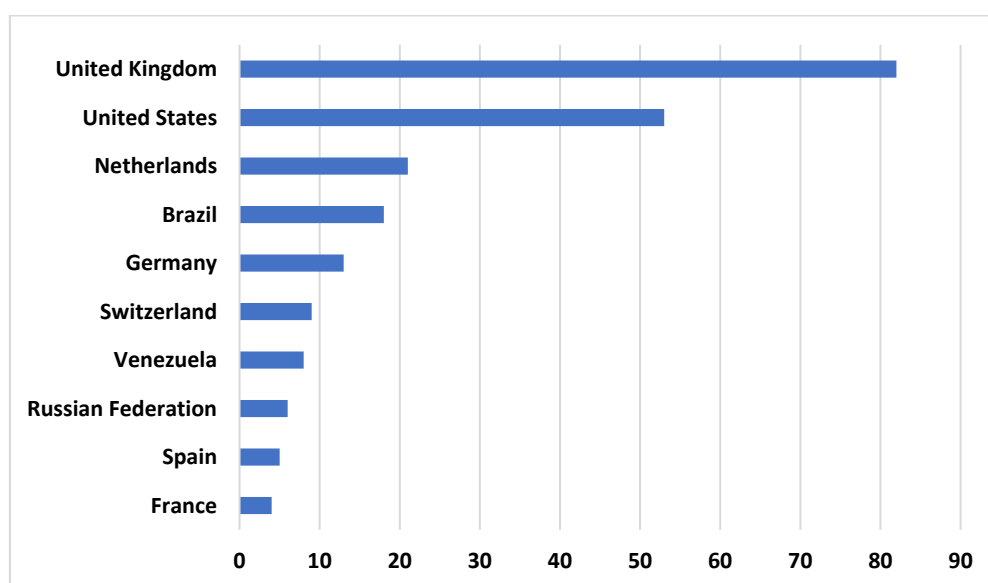
**Fig. 2.** Top 10 countries with publication of public budget.

Table 2 lists the most influential authors based on citations recorded by the Scopus database. The most influential author was Z. Hessami, 70 citations, followed T. Kiefer (n = 60), D. Balsalobre (n = 57), N. Potrafke (n = 52), T. Johansson (n = 29). Table 3 present the influential source (i.e journals) based on citations. Environmental Science and Pollution Research (n = 103295) was the most influential journal, Ciencia e Saude Coletiva (n = 2984), Xitong Gongcheng Lilun yu Shijian/System Engineering Theory and Practice (n =

2884), Conference on Human Factors in Computing Systems - Proceedings (n = 2852), and Human Vaccines and Immunotherapeutics (n = 2197).

A content analysis was performed of the 290 publications sorted by relevance. Next, we performed a co-occurrence analysis with VOSviewer, using the “all keyword” analysis unit and the “full counting” method. We limited the frequency of keyword occurrence to 2 times; out of 1023 keywords VOSviewer found 157 keywords that met the threshold. The results of this analysis are presented in Fig. 3.

Table 2. The most influential authors and source based on citation analysis.

No	Citations	Authors	Title
1	70	Z. Hessami	Political corruption, public procurement, and budget composition: Theory and evidence from OECD countries
2	60	T. Kiefer	Feeling the Squeeze: Public Employees' Experiences of Cutback-and Innovation-Related Organizational Changes Following a National Announcement of Budget Reductions
3	57	D. Balsalobre	Public budgets for energy RD&D and the effects on energy intensity and pollution levels
4	52	N. Potrafke	Public Expenditures on Education and Cultural Affairs in the West German States: Does Government Ideology Influence the Budget Composition?
5	29	T. Johansson	The appropriateness of tight budget control in public sector organizations facing budget turbulence
6	28	A. Pimentel Walker	Self-help or public housing? Lessons from co-managed slum upgrading via participatory budget
7	27	I. Fairclough	Evaluating policy as argument: the public debate over the first UK austerity budget
8	26	M. Buso	Public-private partnerships from budget constraints: Looking for debt hiding?
9	25	U. Siebert	Improving the quality of percutaneous revascularisation in patients with multivessel disease in Australia: Cost-effectiveness, public health implications, and budget impact of FFR guided PCI
10	20	W. Oates	Automatic increases in tax revenues: The effect on the size of the public budget

11	20	S. Neaime	Sustainability of budget deficits and public debts in selected European Union countries
12	20	P.R.D. Bom	Public infrastructure investment, output dynamics, and balanced budget fiscal rules
13	19	L. Ferry	Budgeting and governing for deficit reduction in the uk public sector: Act 2 'the annual budget
14	18	B. Hayo	Political Leaders' Socioeconomic Background and Public Budget Deficits: Evidence from OECD Countries
15	18	R. Lavi	A note on the incompatibility of strategy-proofness and Pareto-optimality in quasi-linear settings with public budgets
16	18	D.A. Hensher	Identifying preferences for public transport investments under a constrained budget
17	17	J. Kim	Factful: Engaging taxpayers in the public discussion of a government budget
18	17	D. Moynihan	Does Public Service Motivation Lead to Budget Maximization? Evidence from an Experiment
19	17	I. Lenoir-Wijnkoop	Public health and budget impact of probiotics on common respiratory tract infections: A modelling study
20	17	J. Čadil	Unemployment cost estimate from public budgets perspective

Table 3. The most influential countries and source based on citation analysis.

Rank	Journal	Country	Citations
1	Environmental Science and Pollution Research	Germany	4892
2	Ciencia e Saude Coletiva	Brazil	2984
3	Xitong Gongcheng Lilun yu Shijian/System Engineering Theory and Practice	China	2884
4	Conference on Human Factors in Computing Systems - Proceedings	United States	2852
5	Human Vaccines and Immunotherapeutics	United States	2197

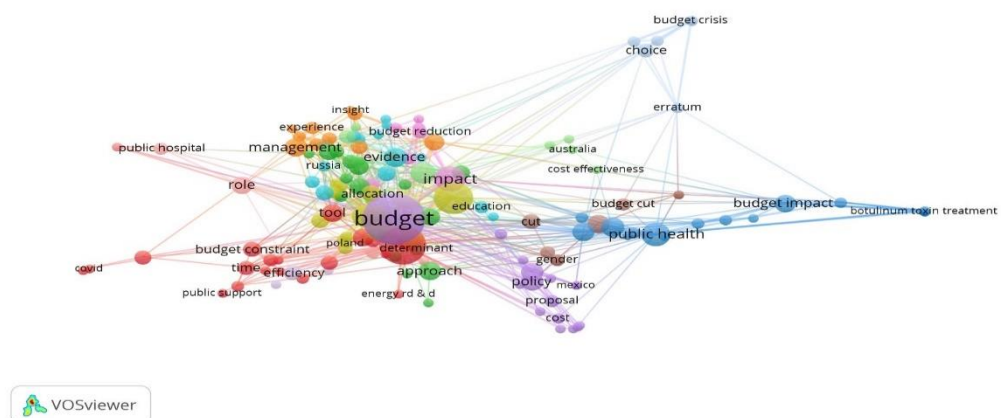


Fig. 3. Network visualization of public budget articles published globally in the Scopus database from 2011 to 2022.

Budget (66), Public Budget (38), and Analysis (26) were the top three keywords that appeared most frequently. Moreover, we found 14 clusters in this analysis. Fig. 3 shows these keywords divided into 14 clusters (each with a different number of keywords), which are represented by colors.

The first cluster (red, 20 keywords) with the most frequent terms being ‘public budget’ (38 occurrences), ‘sustainability’ (8), and ‘tool’ (8). The second cluster (green, 18 keywords) centered on approach (9 occurrence), city (7 occurrence) and process (7 occurrence). The third cluster (blue, 17 keywords) related to public health (14 occurrence), budget impact analysis (10 occurrence), and perspective (9 occurrence). The fourth cluster (yellow, 17 keywords) related to analysis (26 occurrence), public policy (12 occurrence), and instrument (6 occurrence). The five cluster (purple, 16 keywords) focused on budget (66 occurrence), public expenditure (9 occurrence), and policy (9 occurrence). The sixth cluster (light blue, 14 keywords) dealt with evidence (10 occurrence), implementation (6 occurrence), and fiscal policy (6 occurrence). The seventh cluster (orange, 11 keywords) focused on management (9 occurrence), implication (7 occurrence), and challenge (5 occurrence). The eighth cluster (brown, 8 keywords) focused on public health budget (9 occurrence), cut (6 occurrence), and budget cuts (5 occurrence). The ninth cluster (lavender, 7 keywords) focused on impact (17 occurrence), europe (5 occurrence), and state (4 occurrence). The 10th cluster (purple, 7 keywords) focused on role (8 occurrence), public hospital (4 occurrence), and construction (2 occurrence). The 11th cluster (limegreen, 7 keywords) focused on case (11 occurrence), china (5 occurrence), and public budgeting (2 occurrence). The 12th cluster (light blue, 6 keywords) focused on choice (5 occurrence), budget crisis (3 occurrence), and erratum (3 occurrence). The 13th cluster (light green, 5 keywords) focused on government budget (5 occurrence), application (5 occurrence), and experiment (2 occurrence). The 14th cluster (light purple, 4 keywords) focused on public finance (6 occurrence), efficiency (6 occurrence), and growth (2 occurrence).

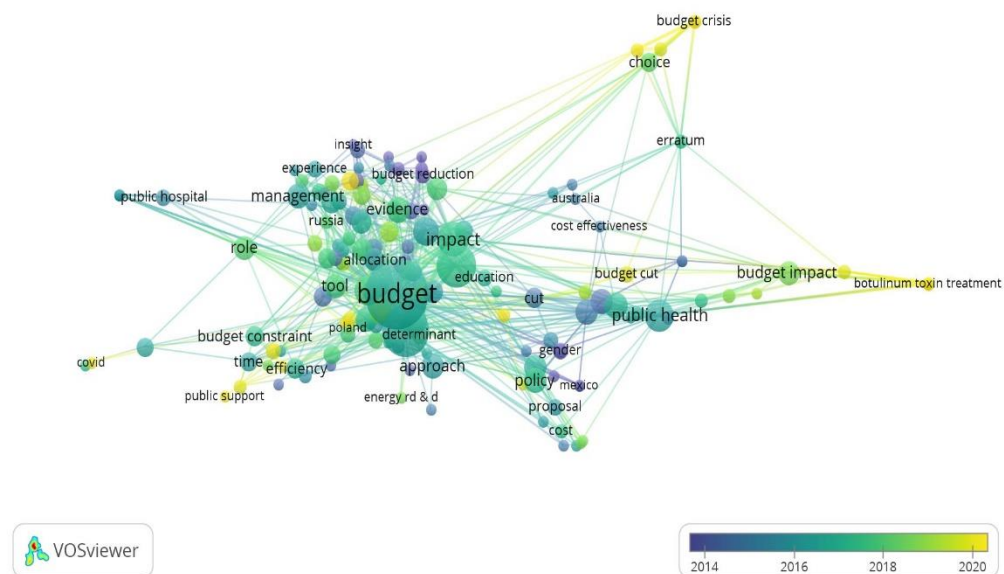


Fig. 4. Overlay visualization of global public budget articles.

Fig. 4 shows an overlay visualization of public budget literature with the average number of publications from 2011 to 2022. There was a shift in topics; around 2017, the literature on public budget contained extensive discussions of the terms “Budget”, “Public Budget”, and “Impact”, and then the last 3 years discussed “Budget Crisis”, “Budget Cut”, and “China”.

DISCUSSION

Based on data from Scopus, the publication trends, journal performance, content analysis, and bibliographic coupling of countries and sources were analysed for research on public budget issues throughout the world. The current study focused on articles published in public budget. This study aimed to provide information on the status of publications in these fields. A total of 290 studies published were recorded in the scopus database. The data showed the rapidity of article publications and the responsiveness of researchers in analyzing on public budget around the world. However, limited research from a global perspective on public budget in the past 3 years has discussed public budget and its relationship with governance within the scope of social science.

Based on Fig. 2, the most productive and influential country was United Kingdom followed by United States and Netherlands. The current study has limitations, we only retrieved studies from Scopus and did not use other source such as Web of Science, Crossref, or PubMed Central. Finally, we did not use other analyses in VOSviewer, such as co-citation or co-authorship. Thus, we hope that bibliometric research on this topic will expand in terms of the databases used, the subject areas, and the analyses conducted in order to provide a broader overview of the issue.

CONCLUSION

In the past two decades, global research on public budget has increased significantly. The theme of research on public budget related to public administration, policy implementation, and local government could be interesting for future discussions.

There are also opportunities to foster discussion about public budget in social science journals related to public administration. Finally, Europe and United States dominated this field in terms of publications, while research from Asia on this topic remains limited, and further research is therefore necessary.

Conflict of Interest

No potential conflict of interest relevant to this article was reported.

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