

# Mapping research trends in public administration during the Covid-19 pandemic crisis

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**Abstract:** The paper aims to provide a comprehensive and in-depth examination of Covid-19 research in public administration. Specific objectives of the bibliometric analysis include: 1) examining descriptive indicators, including the most pertinent documents; 2) finding the most impacting countries, journals, and authors; and 3) examining research hotspots by considering their relationships. A bibliometric analysis is used to pursue these objectives, allowing for an innovative approach to a literature review and significantly upgrading traditional literature review techniques. Bibliometric analysis is based on the Web of Science database, consisting of 761 scientific documents published between 2020 and 2021 addressing Covid-19 research in public administration. In this context, several established and innovative bibliometric approaches are applied. The results reveal that there is more cooperation between authors in Covid-19 research in public administration than in the general scientific field of public administration. Most of the research has been conducted in the United States, followed by China and Canada, while Italy and the United Kingdom are identified as the most productive countries in the EU context. Moreover, most of the research has been published in different prominent journals such as *Public Administration Review*. Finally, several research hotspots have been identified, whereby further insights reveal that crisis management approaches are mostly discussed in the context of public health protection and mitigating the impact of the Covid-19 pandemic while local governments are concerned about public health during the Covid-19 pandemic. The main purpose of the study is to provide the foundation for further research and the basis for evidence-based policymaking, which may facilitate public administration reforms in the future.

**Points for practitioners:** The paper presents an interesting and comprehensive insight into the research trends in public administration during the Covid-19 pandemic crisis. The findings are beneficial not only for the scientific community to identify research gaps in Covid-19 and public administration related issues but also for evidence-based policymaking to appropriately address public administration reforms in the future.

**Keywords:** Covid-19, public administration, research trends, bibliometric analysis

## 1 Introduction

The Covid-19 pandemic was a highly unprecedented occurrence; hence governments around the world, with few exceptions, had no previous experience or benchmark to depend on. The situation pressured governments to impose a quick and multi-faceted response with extraordinary and restrictive measures to handle the uncertain circumstances (Kuhlmann et al., 2021). Governments have faced difficult trade-offs between economic, social and health challenges. More than half the people on the planet have experienced a lockdown with strong containment measures. Besides the health and human tragedy of the pandemic, it has triggered the most serious economic crisis since World War II (OECD, 2020; Aristovnik et al., 2021a, 2021b).

The pandemic has fundamentally affected the government-citizens relationship, thus emphasizing Digital Era Governance as one of the solutions for the provision of public e-services (Esses et al., 2021). This applies especially to local public administration, carrying out tasks within rules and systems set by the central government, which is necessary to assure equality among parties across the country. Therefore, general administrative authorities can be considered an intermediate link between decision makers (central government) and parties (users of public services). Accordingly, especially e-communication and closely related aspects/elements are relevant when addressing the digitalization of relationships between local public government and citizens rather than general dimensions of the digital transformation, which are a domain of central government (Agostino et al., 2021; Aristovnik et al., 2021a, 2021b).

The Covid-19 pandemic reveals that the public administration is not only facing complex problems but also turbulent problems characterized by the surprising emergence of inconsistent, unpredictable, and uncertain events (Ansell et al., 2021). Accordingly, the paper aims to provide a comprehensive and in-depth examination of Covid-19 research in public administration. Specific objectives of the bibliometric analysis include: 1)

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examining descriptive indicators, including the most pertinent documents; 2) finding the most impacting countries, journals, and authors; and 3) examining research hotspots by considering their relationships. A bibliometric analysis is used to pursue these objectives, allowing for an innovative approach to a literature review and significantly upgrading traditional literature review techniques (Ravšelj et al., 2022). The paper is structured as follows. After the introduction section, the following section explains the materials used and the methods applied. The next section presents the main results of the bibliometric analysis. The paper ends with a conclusion in which the main findings are summarized.

## **2 Materials and methods**

The comprehensive bibliometric information on Covid-19 research in public administration was retrieved on 24 January 2022 from Web of Science, a world-leading bibliographic database of peer-reviewed literature (Pranckutė, 2021). The Web of Science was preferred because it provides convenient classification across categories, i.e. Web of Science Categories, allowing to identify documents related to the Public Administration scientific field more precisely.

The search strategy was limited to documents published between 1 January 2020 and 31 December 2021 and included two consecutive steps. The initial search was focused on documents addressing Covid-19 pandemic issues (considering title only) by using the following search query: TI=(pandemic) OR TI=(covid) OR TI=(epidemic) OR TI=(coronavirus) and applying the additional limitation on the Public Administration Web of Science Category. Further, the initial search was supplemented with documents simultaneously addressing the Covid-19 pandemic and public administration issues (considering title and keywords) by using the following search query (TI=(pandemic) OR TI=(covid) OR TI=(epidemic) OR TI=(coronavirus) OR AK=(pandemic) OR AK=(covid) OR AK=(epidemic) OR TI=(coronavirus)) AND (TI=("public administration") OR AK=("public administration")). The first step resulted in 725 documents, while the second in 71 documents, whereby the duplicate documents were removed. Following the multiphase process, 761 documents were identified as relevant for further bibliometric examination on Covid-19 research in public administration.

The bibliometric analysis utilized several bibliometric approaches and software tools. The descriptive overview was conducted using the Python Data Analysis Library Pandas (McKinney, 2012) and visualized using Python Visualization Library Matplotlib (Hunter, J. D., 2007). These Python libraries were also applied to examine scientific production across countries, sources and authors. Finally, network analysis was conducted with Python Network Analysis Library NetworkX (Hagberg et al., 2008), further supplemented by examining the relationship between main clusters with the Jaccard index.

## **3 Results**

### ***3.1 Descriptive overview***

The descriptive overview presented in Table 1 shows the main characteristics of Covid-19 research in public administration. This research area covers a total of 761 documents written by 1915 distinct authors listing 1653 keywords and published in 105 sources in the period 2020-2021. About two thirds (63%) of these documents have at least one citation, while about one-fourth (23%) were written by a single author. Moreover, the number of authors per document (2.27) in this research area is significantly higher compared with the scientific category of Public Administration (1.80). Moreover, the average number of references per document in this research area is 39.61, which is also significantly above the average in the Public Administration scientific category (21.00), suggesting that Covid-19 research in public administration is grounded on a bigger number of the existing studies. Finally, for this research area, 5.31 citations per document can be observed.

Table 1. Descriptive overview of Covid-19 research in public administration (2020-2021).

<b>Bibliometric items</b>	<b>Findings</b>
Timespan	2020-2021
Documents	761
Cited documents	479
Single-authored documents	177
Distinct authors	1915
Sources (Journals, Books, etc.)	105
Author's keywords	1653
Authors per document	2.72
References per document	39.61
Citations per document	5.31

The most relevant (top 10) highly-cited documents in Covid-19 research in public administration are presented in Table 2. Most of these documents were published in prominent journals covering public administration research, such as *Policy Sciences* (Weible et al., 2020), *Public Administration Review* (Moon, 2020; Christensen & Laegreid, 2020; Pedersen & Favero, 2020), *Policy and Society* (Capano et al., 2020; Hartley & Jarvis, 2020; Pierre, 2020), *Public Management Review* (Ansell et al., 2021), *Canadian Public Policy-Analyse de Politiques* (Lemieux et al., 2020) and *Public Money & Management* (Leite et al., 2020).

Table 2. Most relevant documents in Covid-19 research in public administration (2020–2021).

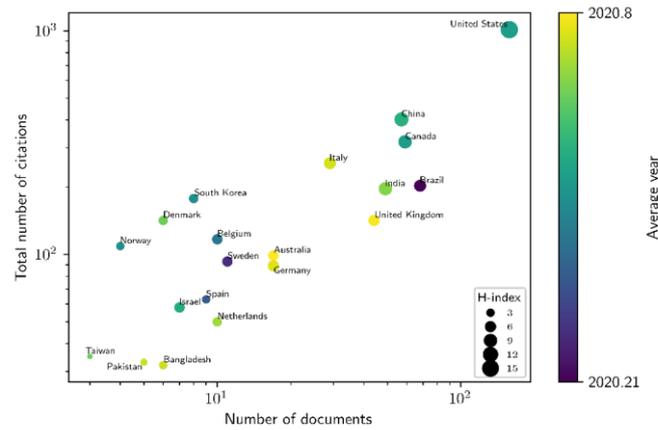
<b>Authors</b>	<b>Year</b>	<b>Document title</b>	<b>Source title</b>	<b>Cited by</b>
Weible, CM; Nohrstedt, D; Cairney, P; Carter, DP; Crow, DA; Durnova, AP; Heikkila, T; Ingold, K; McConnell, A; Stone, D	2020	COVID-19 and the Policy Sciences: Initial Reactions and Perspectives	<i>Policy Sciences</i>	162
Moon, MJ	2020	Fighting COVID-19 with Agility, Transparency, and Participation: Wicked Policy Problems and New Governance Challenges	<i>Public Administration Review</i>	121
Capano, G; Howlett, M; Jarvis, DSL; Ramesh, M; Goyal, N	2020	Mobilizing Policy (In)Capacity to Fight COVID-19: Understanding Variations in State Responses	<i>Policy and Society</i>	114
Christensen, T; Laegreid, P	2020	Balancing Governance Capacity and Legitimacy: How the Norwegian Government Handled the COVID-19 Crisis as a High Performer	<i>Public Administration Review</i>	90
Ansell, C; Sorensen, E; Torfing, J	2021	The COVID-19 Pandemic as a Game Changer for Public Administration and Leadership? The Need for Robust Governance Responses to Turbulent Problems	<i>Public Management Review</i>	66
Pedersen, MJ; Favero, N	2020	Social Distancing during the COVID-19 Pandemic: Who Are the Present and Future Noncompliers?	<i>Public Administration Review</i>	65
Lemieux, T; Milligan, K; Schirle, T; Skuterud, M	2020	Initial Impacts of the COVID-19 Pandemic on the Canadian Labour Market	<i>Canadian Public Policy-Analyse de Politiques</i>	57
Hartley, K; Jarvis, DSL	2020	Polycymaking in a Low-Trust State: Legitimacy, State Capacity, and Responses to COVID-19 in Hong Kong	<i>Policy and Society</i>	55
Pierre, J	2020	Nudges Against Pandemics: Sweden's COVID-19 Containment Strategy in Perspective	<i>Policy and Society</i>	55
Leite, H; Hodgkinson, IR; Gruber, T	2020	New Development: 'Healing at a Distance'- Telemedicine and COVID-19	<i>Public Money &amp; Management</i>	53

### 3.2 Scientific production

The scientific production across countries and sources is presented in terms of the number of documents and citations, whereby the size of a circle provides additional information, revealing the h-index as a measure of the scientific impact (Harzing & Van Der Wal, 2009) and by the colour of a circle, presenting the time dimension in scientific production.

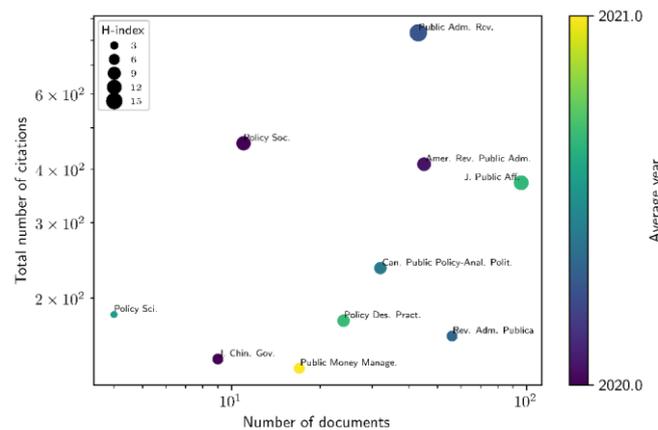
The most relevant (top 10) highly-cited countries in Covid-19 research in public administration are presented in Figure 1. While the United States stands out among all countries, China and Canada are also contributing significantly in this research area, as suggested by the relatively big number of both the number of documents and citations. Moreover, India and Brazil are also identified as countries providing a significant contribution to this research area. Finally, Italy and the United Kingdom are identified as the most productive countries in the EU context.

Figure 1. Most relevant countries in Covid-19 research in public administration (2020-2021).



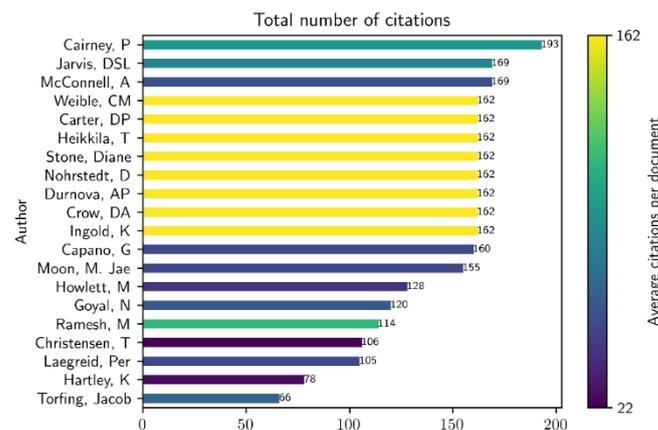
Moreover, the most relevant (top 10) highly-cited sources in Covid-19 research in public administration are presented in Figure 3. Despite the Journal of Public Affairs having the biggest number of documents, Public Administration Review is identified as one of the most prominent sources, as suggested by the biggest number of total citations and a relatively big number of documents, covering several most relevant top-cited documents in this research area.

Figure 2. Most relevant sources in Covid-19 research in public administration (2020-2021).



Finally, the most relevant (top 10) highly cited authors in Covid-19 research in public administration are presented in Figure 3. The most relevant authors are Cairney, P, Jarvis DSL and McConnell, A. Moreover, among the most relevant authors, there is a group of authors that have collaborated with each other in this research area.

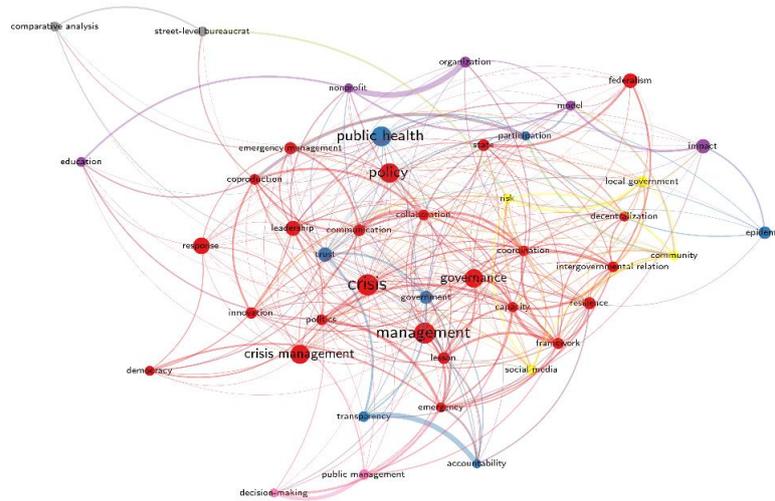
Figure 3. Most relevant authors in Covid-19 research in public administration (2020-2021).



### 4.3 Network analysis and the interplay between research hotspots

The network analysis, i.e., the keyword co-occurrence analysis, is presented in Figure 4. It is conducted on the author's 43 most relevant keywords, where the nodes represent the keywords and links as well as the co-occurrence relations between keywords. Note that the node size is in proportion to the number of keyword occurrences, showing research intensity (node degree), the link width is in proportion to the co-occurrences between keywords (edge weight), while the node colour indicates the cluster to which a particular keyword belongs (Wang et al., 2020; Ravšelj et al., 2022).

Figure 4. Keyword co-occurrence network in Covid-19 research in public administration (2020-2021).



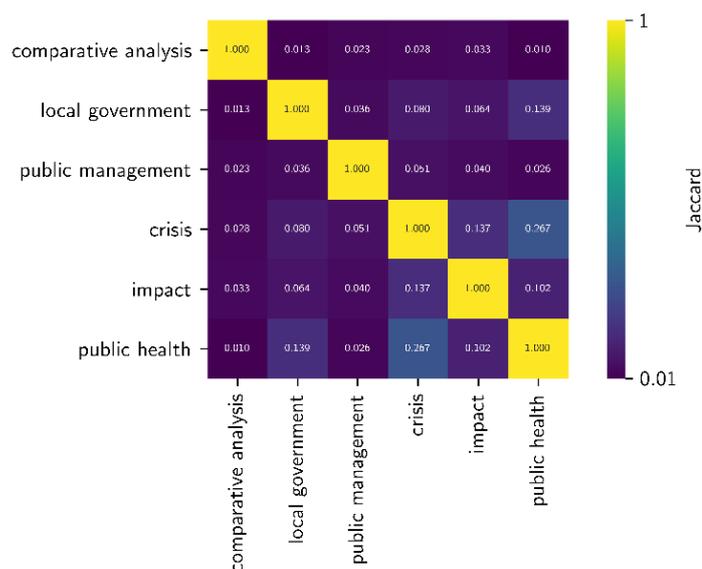
The keyword co-occurrence network reveals six research hotspots, namely: 1) comparative analysis; 2) local government; 3) public management; 4) crisis (management); 5) impact; and 6) public health. A detailed synopsis of the identified research hotspots, including keywords related to each cluster and the number of documents belonging to each cluster, is presented in Table 3. Despite 235 documents being not related to any of the identified research hotspots, most documents are related to crisis (management), followed by public health and impact.

Table 3. Research hotspots based on keyword co-occurrence network in Covid-19 research in public administration (2020-2021).

Research hotspots	Keywords	Documents
Comparative analysis	comparative analysis, street-level bureaucrat	19
Local government	local government, social media, risk, community	62
Public management	public management, decision-making	25
Crisis (management)	crisis, management, policy, crisis management, governance, response, federalism, leadership, emergency management, communication, resilience, innovation, state, lesson, framework, coproduction, politics, collaboration, coordination, intergovernmental relation, capacity, democracy, decentralization, emergency	426
(Covid-19) impact	impact, organization, education, model, nonprofit	105
Public health	public health, trust, government, epidemic, transparency, participation, accountability	176

Finally, the relationship between research hotspots in Covid-19 research in public administration is presented in Figure 5. The results of the Jaccard index based on the keywords reveal that crisis (management) is strongly related to public health and (Covid-19) impact, implying that crisis management approaches are mostly discussed in the context of public health protection and mitigating the impact of the Covid-19 pandemic. Moreover, public health is relatively strongly related to local government and (Covid-19) impact, suggesting that local governments are concerned about public health during the Covid-19 pandemic.

Figure 5. The relationship between research hotspots in Covid-19 research in public administration (2020-2021).



## 4 Conclusion

The Covid-19 pandemic, with its highly unprecedented occurrence, has considerably reshaped sustainable development and significantly affected the functioning of public administrations around the world, including public governance, as governments had no previous experience or benchmark to depend on (Kuhlmann et al., 2021). This event reveals that the public administration is not only facing complex problems but also turbulent problems characterized by the surprising emergence of inconsistent, unpredictable, and uncertain events (Ansell et al., 2021). Accordingly, Covid-19 research in public administration has become an increasingly attractive topic for research.

The results of a bibliometric analysis on Covid-19 research in public administration reveal that there is more cooperation between authors in this research area compared with the general scientific field of public administration. Most of the research has been conducted in the United States, followed by China and Canada, while Italy and the United Kingdom are identified as the most productive countries in the EU context. Moreover, most of the research has been published in different prominent journals such as *Public Administration Review*. Finally, several research hotspots have been identified, whereby further insights reveal that crisis management approaches are mostly discussed in the context of public health protection and mitigating the impact of the Covid-19 pandemic while local governments are concerned about public health during the Covid-19 pandemic. ). The findings provide the foundation for further research and the basis for evidence-based policymaking, which may facilitate public administration reforms in the future.

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