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State of Public Administration Scientific Research in the Visegrad Countries – A Bibliometric Analysis

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Abstract

As a discipline in its own right, public administration has a variety of interpretations in European countries, which can be found at the intersection of three traditional disciplines: law, policy and management. The Central European region, such as the Visegrad countries (Czech Republic, Poland, Hungary, Slovakia), is of particular interest for the analysis of the state of public administration research, as it only came to the fore after the change of regime. The present study undertakes a bibliometric analysis of the publications in the field of public administration in these countries for the period 2011–2020. The publications studied were indexed in the Scopus citation database, and the tools used for the analysis were the SciVal research support platform and the vosViewer bibliometric analysis software. The results show the different orientations, with Hungarian and Polish authors approaching the discipline from a legal perspective, while Czech and Slovak authors take a management perspective. Regional journals and conference publications dominate in terms of publication places. In terms of co-authorship, regional partners also stand out, while cooperation with Western European countries takes the form of fewer but better cited publications.

Keywords:

bibliometrics, publication performance, public administration science, SciVal, Visegrad countries

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1. Introduction

In an era of international scientific competitiveness and increasingly prominent international university rankings, it is essential to assess a country's scientific performance in terms of its disciplines. However, some disciplines are not clearly distinct, and their research methods, questions or themes concern several disciplines. This is the case of public administration as well, which is the subject of this study and whose fundamental aim is to assist the government and public services of states (Juliani & Oliveira, 2016).

There has been a long-standing academic discussion in terms of the meaning of the discipline of public administration. The central issue of the discussion is whether public administration can be considered a discipline in its own right, but the situation is qualified by the different ways in which different nations understand it. Christopher Pollitt has noted that "what unites public administration is its subject matter – the state, the public sphere – and not its theories or methodology" (Pollitt, 2010, p. 292). The "community of interests" of public administrators (Pollitt, 2010, p. 292) has developed differently in the US and European states. The public administration in European countries also presents a varied picture, with different traditional disciplines giving it different status. While Germany has a strong legal orientation, Norway and Denmark have a more political science orientation, and the Czech Republic and Slovakia have a strong economics orientation (Hustedt et al., 2020). In his work, György Hajnal (2013) grouped public administration courses according to three different approaches to university education. However, this grouping can also be applied to public administration research. According to the author, the three groups are:

- Legal orientation: Germany, Greece, Hungary, Italy, Moldova, Poland, Portugal, Romania, former Yugoslavian countries;
- Policy orientation: Belgium, France, Spain, Sweden;
- Business orientation: Armenia, Bulgaria, Czech Republic, Denmark, Estonia, Ireland, Latvia, Lithuania, Netherlands, Slovakia, Ukraine.

However, public administration is often not considered a scientific discipline at all. According to these authors, public administration science does not seek to create general theoretical paradigms or to lay down a general scope of knowledge, but rather to answer questions from the practical life of the public sector (Bauer, 2018, p. 1060). Others recognize European public administration as an amalgam of methodologies that carries the methodology and knowledge of several other disciplines in it. These include administration, policy studies, public law, public management, economics and finance, organization studies, political science, sociology, and social psychology (Eymeri-Douzans, 2018).

The countries examined in this study, the Czech Republic, Poland, Hungary, and Slovakia, can be grouped separately according to the Hajnal classification. While in Hungary and Poland the legal orientation is predominant, in the Czech Republic and

Slovakia the business orientation is more pronounced. According to the authors, public administration of the states of the Central European region emerged during the democratic transition after the change of regime, with the aim of helping to establish and maintain the newly forming democratic institutions (Randma-Liiv & Drechsler, 2017). At the same time, the states under study are in many respects related, forming a smaller, unified political, cultural, and historically connected entity within the European Union. These Member States are collectively referred to as Visegrad States. What they have in common is that they were part of the Habsburg Monarchy and became satellite states of the Soviet Union after World War II (Staroňová & Gajdusček, 2016). In the 1990s, the countries under discussion underwent a change of regime and democratic transition, with the establishment of market economies. Today, these countries are members of the North Atlantic Treaty Organisation (NATO) and the European Union (EU), thus contributing to the Europeanization of their internal systems. They differ in terms of population size; Poland can be counted among the larger, Hungary and the Czech Republic among the medium-sized, and Slovakia among the smaller states. There are, of course, similarities but also differences, and these differences have grown considerably over the last quarter of the century. Meyer-Sahling (2009) writes in his study that, under the surface, the communist regimes in these countries were also quite different, and then, after the change of regime after 1990, the region became even more diverse.

Before starting the analysis, it is worth making a few remarks on the scientific performance of the countries under review. On the one hand, it is important to note that the countries under study are highly comparable, as none of them belong to the group of Anglo-Saxon (native English-speaking) countries, and thus may face language barriers in scientific publishing (Jurajda et al., 2017). In most countries of the system, social sciences (and political science in particular) were not formally accepted disciplines. However, law and legal science are widely accepted and institutionalized, both in terms of academic institutional research and university teaching. This may be the main reason why, in the Soviet period, public administration was discussed in an almost purely legal framework. Within the Soviet regime, however, law was seen as a generalized order that served only administrative efficiency. Under the communist regime, scholars had limited or no access to Western theories and thus could not participate in international academic discourse either. This may be another reason for the predominantly legal approach. In the post-Soviet states, independent research programs in the social sciences started after the regime change, but they are significantly underfunded compared to the natural and technical sciences (Vaneček, 2008).

Due to its general situation, the Central European region is considered a semi-peripheral region compared to the Western developed countries (Alatas, 2003; Egri & Kőszegi, 2018). Among these countries, the dependence on Western scientific powers is significant, and the flows towards them are very high (Abriszewski, 2016). Luczaj and Bahna (2020) argue in their study that even if some cooperation between

researchers from central and semi-peripheral countries takes place, most of these relations are asymmetric, with a hierarchical relationship. This ultimately leads to an under-evaluation of central European researchers in the more developed countries, while fostering intra-regional cooperation. The results of Kwiek (2020) show that countries with similar social and economic factors form close research collaborations with each other, where geographic proximity, linguistic and cultural proximity, and common historical ties are the cohesive forces. In his work, he has demonstrated this trend with the cases of Slovakia and the Czech Republic, Germany and Austria, and Spain and Portugal. Gorraiz and his co-authors (2012) used the example of Austria and Hungary to demonstrate this. A similar conclusion is reached by Dobos et al. (2021), whose results show that Central European countries are not among the international elite, but several countries, including the Czech Republic, Poland, and Slovakia, have developed national strategies aiming for scientific excellence. The direct funding publication model used in this strategy has put these countries on a fast growth path (Sasvári et al., 2021).

2. Methodology

The present study undertakes a bibliometric analysis of publications in the field of public administration in the Visegrad Group. Focusing on the developments of the last decade, the publications were defined for the period 2011–2020, which helps compare the research trends of the different countries.

The publications were collected using the online research support platform SciVal, which analyzes the publications indexed in the international citation database Scopus according to bibliometric criteria. Bibliometric analyses can be performed at different levels, individual, institutional, national, and regional, of which the present study focuses on the national and international aspects (Gevers, 2014). The data collection started with the compilation of a publication list using the SciVal overview platform, which analyzed the publication activity of the Visegrad Group countries (Czech Republic, Poland, Hungary, and Slovakia) and, within this, publications in the field of the public administration discipline for the period 2011–2020. In SciVal, public administration is presented as a distinct subfield of social sciences. I retrieved the publication list generated in SciVal based on the electronic identifiers (E-IDs) of the publications in the Scopus database and used this publication list in vosViewer.

In SciVal, I performed a descriptive statistical analysis as an overview analysis, listing the most important authors, institutions, and publication sites. In the case of the leading institutions, I applied certain limitations: restricting the results to the last ten years' publications, to the Public Administration field and to journal articles, excluding other types of publications such as book chapters and conference proceedings. As a benchmarking analysis, I compared the evolution of the number of publications in the countries under study over the years. I performed a trend analysis in terms of keywords

and leading subject areas. Among some of the SciVal indicators, it is also worth highlighting the field-weighted citation impact (FWCI), which measures the citation acquisition power of a given publication compared to others in a similar topic. The FWCI therefore takes into account the citation patterns and trends in a given topic area. The prominence percentile (PP) measures the activity of a given topic in relation to other topics.

I used the vosViewer 1.6.16 bibliometric analysis software version running on Microsoft Windows for further analysis and visualization. The units of analysis in the program can be authors, publications, institutions, citations, and keywords as well. Analyses can be carried out based on a predefined – and uploaded – list of publications in the software. For the purpose of this study, I used the software to perform two analyses, one of which examines co-authorship relationships at the level of the states, based on the authors' institution (where the institution is based). And the keyword co-occurrence analysis was based on all keywords, which includes keywords assigned to the publication by the author and Scopus indexed keywords.

3. Results

It is worth starting the presentation of the results with the descriptive statistic data, which show the publication performance of the countries under review and the most important places where public administration publications appear. We then look at the most important partner contacts, followed by the leading topics and keywords.

3.1 Publication Performance

General data on publication performance are summarized in the first table. It also defines the range of publications examined.

Table 1:

Publication performance of the Visegrad countries in the field of public administration (2011–2020)

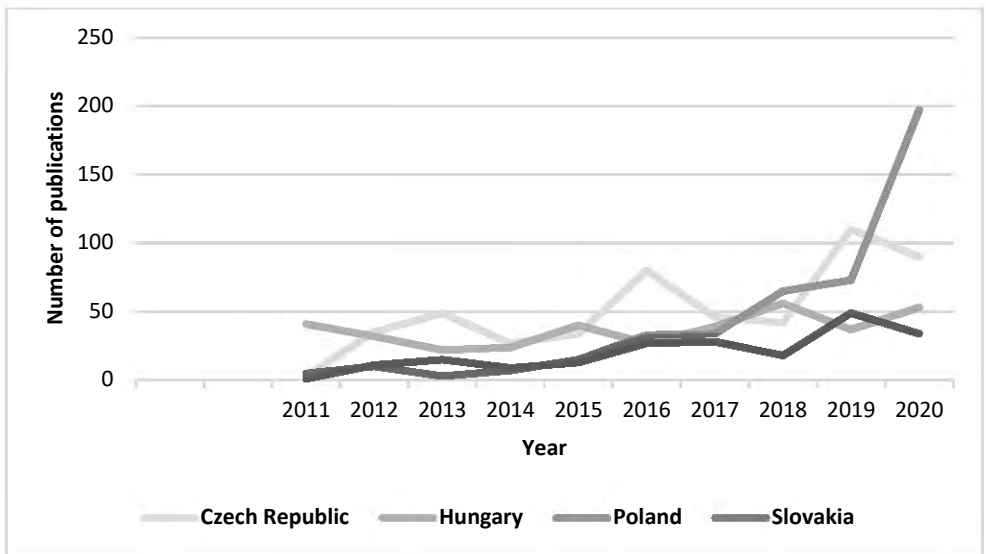
	Czech Republic	Poland	Hungary	Slovakia
Number of publications	516	442	371	205
Number of authors	677	531	458	274
Number of citations	2387	1903	2171	1014
Number of citations per publication	4.6	4.3	5.9	4.9
FWCI	0.78	0.86	0.88	0.83

Source: Own editing, based on SciVal data

Table 1 shows that the Czech Republic (516 publications) stands out in terms of the number of publications, followed by Poland (442 publications) and Hungary. The Czech Republic also stands out in terms of the number of authors active in the field of public administration (677 authors) and is the leading country in terms of the number of citations (2387 citations). However, in terms of the number of citations per publication, Hungary is the leader (5.9 reference per publication), and Hungary also stands out in terms of FWCI (0.88). This therefore shows that the Czech Republic stands out in terms of quantitative publications, while Hungary stands out in terms of qualitative publications.

Figure 1:

Evolution of the number of publications in the Visegrad countries in the field of public administration (2011–2020)



Source: Own editing, based on SciVal data

Figure 1 summarizes the evolution of the number of publications for each country over the period under review. As can be seen, in 2011, Hungary still had the highest number of publications (41), while the Czech Republic and Poland gradually increased the number of publications per year in this field. Poland had more publications in only two years (2018 and 2020), while the Czech Republic stands out when looking at the summary data.

Table 2:

List of the most active institutions in terms of the publications examined (2011–2020)

Name of institution	Country	Number of journal articles	Number of citations	FWCI
Corvinus University of Budapest	Hungary	132	393	0.39
Masaryk University	Czech Republic	106	878	1.10
Maria Curie-Skłodowska University	Poland	99	74	0.52
Charles University	Czech Republic	96	625	0.88
University of Warsaw	Poland	60	279	0.80
Jagiellonian University in Kraków	Poland	41	133	0.50
Matej Bel University	Slovakia	41	237	0.90
Eotvos Lorand University	Hungary	34	169	0.79
Tomas Bata University in Zlin	Czech Republic	32	249	1.53
Hungarian Academy of Sciences	Hungary	30	135	0.65

Source: Own editing, based on SciVal data

Table 2 shows the most active institutions based on the number of publications during the period under review. In the top 10, we can find 3 Czech, 3 Hungarian, 3 Polish and 1 Slovakian institutions. It is important to note that 9 institutions are universities, while the 10th is the Hungarian Academy of Sciences. The calculation of the ranking was limited to journal articles. The Corvinus University of Budapest stands out with its number of publications (132) and its number of citations (393), while the FWCI value is highest for the Tomas Bata University in Zlin.

Table 3:

Top publication sites for the publications examined (2011–2020)

Order	Czech Republic			Poland		
	Journal Name	Number of publications	Country	Journal Name	Number of publications	Country
1	Central European Journal of Public Policy	40	Czech Republic	Studia Iuridica Lublinensia	91	Slovenia
2	Lex Localis	37	Slovenia	Lex Localis	37	Slovenia
3	NISPAcee Journal of Public Administration and Policy	36	Germany	Problems and Perspectives in Management	36	Ukraine
4	Administrative	25	Romania	Decyzje	33	Poland

Czech Republic				Poland		
Order	Journal Name	Number of publications	Country	Journal Name	Number of publications	Country
	Management Public					
5	Problems and Perspectives in Management	24	Ukraine	Public Policy and Administration	19	Lithuania
6	Society and Economy	20	Hungary	Education Sciences	19	Switzerland
7	Transylvanian Review of Administrative Sciences	19	Romania	Transylvanian Review of Administrative Sciences	14	Romania
8	Education Sciences	9	Switzerland	Information Technology for Development	13	UK
9	Social Policy and Administration	7	UK	Voluntas	9	USA
10	Public Policy and Administration	7	UK	Administratie si Management Public	9	Romania

Hungary				Slovakia		
Order	Journal Name	Number of publications	Country	Journal Name	Number of publications	Country
1	Society and Economy	194	Hungary	Problems and Perspectives in Management	31	Ukraine
2	Lex Localis	16	Slovenia	NISPACEE Journal of Public Administration and Policy	22	Germany
3	Journal of European Public Policy	13	UK	Administratie si Management Public	21	Romania
4	Civil Szemle [Civil Review]	12	Hungary	Lex Localis	19	Slovenia
5	Transylvanian Review of Administrative Sciences	12	Romania	Society and Economy	7	Hungary
6	Problems and Perspectives in Management	7	Ukraine	Education Sciences	6	Switzerland
7	NISPACEE Journal of Public Administration and Policy	6	Germany	Transylvanian Review of Administrative Sciences	5	Romania
8	Governance	5	UK	Central European Journal of Public Policy	5	Czech Republic
9	Politics and Governance	5	Portugal	Public Policy and Administration	4	UK
10	Human Resources for Health	4	UK	Balkan Social Science Review	4	Macedonia

Source: Own editing, based on SciVal data

Table 3 shows the top journals as a publication venue for the authors active in public administration sciences. The emphasis on regional Scopus indexed journals in the list is worth noting. Czech authors publish regularly in 6 journals indexed in the Central European region, Polish authors in 7 journals, Hungarian authors in 5 journals and Slovak authors in 7 journals. In addition to these, the *NISPAcee Journal of Public Administration and Policy*, currently edited by a German publisher, also plays an important role.

Table 4:

Data on the top ten journals regarding their impact (2011–2020)

Scopus Source	Number of publications	Best Quartile	H-index	Citations per Publication	Source-Normalized Impact per Paper (SNIP)	Country
Studia Iuridica Lublinensia	219	Q3	4	0.6	0.229	Poland
Society and Economy	215	Q3	13	2.2	0.27	Hungary
Problems and Perspectives in Management	121	Q2	23	2.8	0.677	Ukraine
Lex Localis	111	Q2	16	3.7	0.387	Slovenia
Education Sciences	64	Q2	30	5.6	1.314	Switzerland
Administratie si Management Public	63	Q1	17	8.6	1.016	Romania
NISPAcee Journal of Public Administration and Policy	60	Q3	10	4.1	1.05	Germany
Central European Journal of Public Policy	53	Q2	10	3.5	0.806	Czech Republic
Transylvanian Review of Administrative Sciences	50	Q3	18	5.2	0.463	Romania
Public Finance Quarterly	41	Q4	3	0.1	0.241	Hungary

Source: Own editing, based on SciVal and Scimago Journal Rank data

Table 4 summarizes the most significant impact data of the top 10 journals used as venues of publication among these authors. It is important to note that to create this top 10 titles list, merged data was used, handling the four countries as a single unit of analysis. In the list we can see that 8 out of 10 journals are regional, except one from Germany and Switzerland. Based on the best quartiles in Scimago Journal Rank data (year 2021), only the *Administratie si Management Public* could reach the top 25%

(Q1) quartile, while 4 are ranked within the Q2, 4 in the Q3 and 1 in the Q4 category. Based on the h-index, we can find altered values, the *Education Sciences* (Switzerland) journal stands out with an h-index of 30, while this journal leads regarding the source-normalized impact per paper as well. The citations per publication has its highest value at the *Administratie si Management Public* journal. However, in general we can observe a low tendency in every impact indexes.

Table 5:

Data on the top ten most cited authors in terms of publications examined (2011–2020)

Author's name	Name of institution	Country	Number of publications	Number of citations	h-index	FWCI	Most relevant keyword
Nemec, Juraj	Masaryk University	Czech Republic	28	234	13	1.21	Public Procurement
Roztocki, Narcyz	Kozminski University	Poland	4	174	17	12.69	Socioeconomic Development
Soja, Piotr	Kraków University of Economics	Poland	5	92	14	8.12	Transition Economies
Murray Svidronova, Maria	Matej Bel University	Slovakia	11	85	8	1	E-procurement
Mikušová-Meričková, Beáta	Matej Bel University	Slovakia	9	83	12	1.25	Public Services
Klimovský, Daniel	Comenius University	Slovakia	10	80	8	0.91	Public Administration
Kwiek, Marek	Adam Mickiewicz University in Poznań	Poland	2	80	18	2.83	Deinstitutionalization
Ochrana, František	Charles University	Czech Republic	16	76	8	0.75	Public Procurement
Špaček, David	Masaryk University	Czech Republic	12	74	7	0.88	Public Administration
Mróz, Bogdan	SGH Warsaw School of Economics	Poland	3	68	5	3.2	Shadow Economy

Source: Own editing, based on SciVal data

Table 5 shows the list of the most cited authors. Of these, 4 Polish, 3 Czech and 3 Slovak authors were selected into the top 10. One Czech author stands out in terms of his number of citations, while one Polish author dominates in terms of his h-index. It is worth pointing out that in this analysis, the reference numbers refer only to the range of publications examined, while the author's h-index value refers to the author's total life work. The value of the h-index also considers the author's activity and the number of citations of published papers. A Polish author also stands out in terms of the FWCI value (with a value of 12.69). These authors also indicate the direction of research in

the field of public administration in the region, based on their work, using the most relevant keywords specific to their work. Based on this we can see that in recent years, economic issues have been at the forefront of public administration research in the region, and public procurement, e-procurement, and other economic topics, such as the shadow economy, the transition economy and the socio-economic development issue, also excel. Issues related to administration, such as public services and public administration in general, are also addressed.

3.2 Co-authorship Relations

After the general descriptive statistical analysis, it is also worth examining the co-authorship relations of these states. As we can read in the theoretical introduction, traditionally, public administration in the Central European region has had a legal emphasis, however, in recent years economic science and economics have also become a major research direction, so public administration shows the authorship patterns of the social sciences. As noted in Sasvári et al. (2020), this is generally characterized by small-group publishing.

Table 6:
Co-authorship data (2011–2020)

	Czech Republic	Poland	Hungary	Slovakia
International cooperation (%)	23.8	24.9	21.3	40.5
National cooperation (%)	15.9	9.3	11.6	8.3
Institutional cooperation (%)	38	16.1	19.4	34.2
Single author (%)	22.3	49.8	47.7	17.1

Source: Own editing, based on SciVal data

Table 6 summarizes general data on co-authorship relationships. Based on this, international cooperation is most prevalent in Slovakia (40.5%) and least prevalent in Hungary (21.3%). In terms of national cooperation, we can see generally low figures, with the Czech Republic dominating (15.9%), while institutional cooperation is also the highest in the Czech Republic (38%). Poland (49.8%) and Hungary (47.7%) both have high shares in terms of single authorship.

Table 7:

List of the most important partner countries in terms of co-authorship (2011–2020)

Order	Czech Republic		Poland		Hungary		Slovakia	
	Partner country	FWCI	Partner country	FWCI	Partner country	FWCI	Partner country	FWCI
1	Slovakia (56)	1.26	Ukraine (25)	1.21	Germany (12)	1.39	Czech Republic (56)	1.26
2	United Kingdom (14)	1.33	United Kingdom (16)	2.69	USA (12)	6.4	United Kingdom (8)	0.63
3	USA (11)	1.12	USA (14)	4.74	United Kingdom (10)	7.71	Hungary (7)	1.34
4	Netherlands (10)	1.44	Netherlands (13)	2.33	Netherlands (8)	1.07	Lithuania (5)	1.38
5	Germany (8)	1.97	Sweden (10)	1.75	Slovakia (7)	1.34	Poland (5)	1.49
6	Italy (8)	1.16	Lithuania (8)	1.58	Romania (6)	1.1	Belgium (4)	1.86
7	Poland (7)	1.29	Czech Republic (7)	1.29	Czech Republic (5)	1.73	Germany (4)	1.42
8	Austria (5)	0.98	Italy (7)	3.93	Italy (5)	1.01	Austria (3)	1.26
9	Canada (5)	1.59	Finland (6)	1.63	Sweden (5)	14.21	Croatia (2)	1.66
10	Hungary (5)	1.73	Germany (5)	4.43	Denmark (4)	1.03	Latvia (2)	1.33

Source: Own editing, based on SciVal data

Table 7 shows the most significant partnerships for each country. It can be observed that based on the number of publications, the Czech Republic, Poland, and Slovakia have the most intensive co-authorship relations with other states in their region. In the case of Hungary, this role is played by Germany, which can also be traced back to historical and political ties and the administrative system of the Central European states, which mostly follows the continental European (German) administrative model. In the list of major partners, the Czech Republic has 4 regional, 4 European and 2 other (USA and Canada) states. For the Polish authors, the focus is on European partners (6), while there are 3 states in their own region on the list. For Hungarian authors, it is a similar picture with 3 regional partners and 6 European partners. Slovakia has the highest number in co-authorship with states in its own region. It is worth mentioning here that international citation databases and journal ranking systems (Scopus, Scimago Journal Ranking) include Lithuania, Latvia, Croatia, and Austria, among others, in the Central European region. It is also worth highlighting that the USA is also included for Czech, Polish and Hungarian authors. Concerning the cooperation with Western European countries, it can be highlighted that although the number of publications shows a more active cooperation with

regional partners, the FWCI value shows a higher value for publications with Western European countries.

Table 8:

Share of the publication with top partner countries by the best quartile (2011–2020)

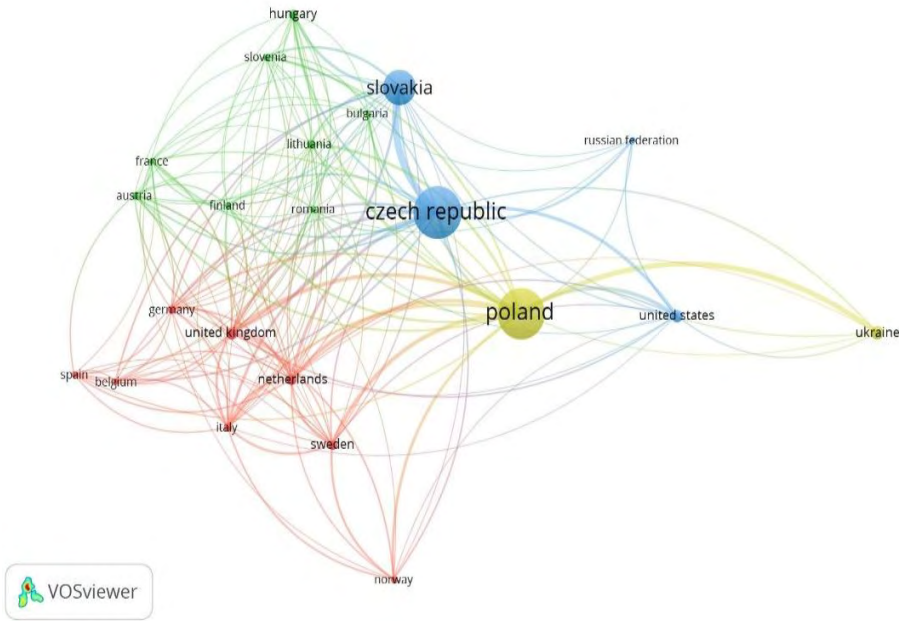
	Hungary		Czech Republic		Poland		Slovakia	
	Inside region	Outside region	Inside region	Outside region	Inside region	Outside region	Inside region	Outside region
Q1 (%)	13.6	38.3	25.4	31.6	21.4	45.6	22.1	20
Q2 (%)	13.6	29.8	14.9	31.6	4.8	31.6	17.6	20
Q3 (%)	45.5	14.9	46.3	28.9	52.4	14	48.5	40
Q4 (%)	27.3	17	13.4	7.9	21.4	8.8	11.8	20

Source: Own editing, based on SciVal data

Table 8 presents the share of publications with the top collaborating countries based on the best quartile. It is important to note that the best quartile reflects on the position of the journal in which the publication is published, and it reflects the impact and popularity of the journal as well. The indicated distinction between inside region and outside region aims to quantify the role and impact of intraregional and interregional collaborations. We can observe that not only the FWCI value, but also the best quartile of the journal is significantly higher in case of interregional collaborations, including co-authorship with the United States, Canada, or the Western European countries. This leads to the result that outside of the region collaborations not only mean higher FWCI values but that these publications are usually published in higher indexed journals.

Regarding the disciplinary orientation, a more pronounced collaboration can be observed between the Czech Republic and Slovakia, which can be explained by their management-oriented approach to public administration as well. Besides this, a strong link is found between Hungary and Germany, both approaching the public administration science from a legal aspect.

Figure 2:
Co-publication network of major partner countries (2011–2020)



Source: Own editing using vosViewer software, based on Scopus data

Figure 2 shows the co-authorship relationships and the resulting clusters based on the strength of the relationships. The figure summarizes only the network of countries with at least 5 co-authored publications (22 countries). Based on this, 4 clusters were created. The first and second clusters contain 8 states each, while the third and fourth clusters contain 4 and 2 states, respectively. It is interesting to note, however, that the first cluster does not include any of the states surveyed, so based on the strength of co-authorship the Western European states cooperate more closely. The members of the first cluster are Belgium, Germany, Italy, the Netherlands, Norway, Spain, Sweden, and the United Kingdom. The second cluster was composed mainly of the countries that cooperate more closely with Hungary in terms of the strength of relations: Austria, Bulgaria, Finland, France, Lithuania, Romania, and Slovenia. The third cluster is made up of the Czech Republic, Russia, Slovakia, and the United States, while the fourth cluster is made up of Poland and Ukraine.

3.3 Topics and Keywords

Bibliometric analysis of leading research topics and keywords helps understand the research directions and structure of the discipline. Based on SciVal's categorization of topics, the following table summarizes the most prominent topic areas for the states surveyed.

Table 9:
List of the most relevant research topics (2011–2020)

Order	Czech Republic			Poland		
	Topic	FWCI	PP	Topic	FWCI	PP
1	Local Public Services; Waste Collection; Outsourcing	0.77	93.253	Open Government; E-Participation; E-Governance	0.88	99.506
2	Open Government; E-Participation; E-Governance	1.27	99.506	Fiscal Decentralization; Federalism; Property Tax	0.46	94.784
3	Fiscal Decentralization; Federalism; Property Tax	0.46	94.784	New Public Management; Regulatory Agencies; Social Responsibility	0.17	93.92
4	Policy Advice; Advisers; Politicization	1.05	87.064	Network Governance; Inter-Organizational Collaboration; Disaster Response	0.58	98.215
5	Amalgamation; Local Government; Mergers	0.9	78.988	Pension System; Old Age Assistance; Pay-As-You-Go	0.47	79.649
6	Quito; Biomass Energy; Urban Policy	0.3	47.587	Property Tax; Financial Condition; Local Government	0.87	81.186
7	Public Procurement; Environmentally Preferable Purchasing; Tendering	0.61	94.415	Mayors; Devolution; Local Government	1.15	70.848
8	Federal Power; Hydropower; Penstocks	0.74	88.327	Nonprofit; Charities; Third Sector	0.88	95.578
9	Accrual Accounting; International Public Sector Accounting Standards; IPSAS	0.59	94.821	Public Service Motivation; Red Tape; Public Employees	1.01	97.876
10	Pension System; Old Age Assistance; Pay-As-You-Go	0.05	79.649	Accrual Accounting; International Public Sector Accounting Standards; IPSAS	2.17	94.821
Order	Hungary			Slovakia		
	Topic	FWCI	PP	Topic	FWCI	PP
1	State Socialism; Hungary; Homosexuality	0.75	27.191	Local Public Services; Waste Collection; Outsourcing	0.86	93.253

2	Protest Movements; Eastern Europe; Austerity	0.68	35.43	Fiscal Decentralization; Federalism; Property Tax	0.5	94.784
3	Open Government; E-Participation; E-Governance	0.57	99.506	Open Government; E-Participation; E-Governance	0.92	99.506
4	Volunteerism; Corporate Citizenship; Sports Events	0.63	94.526	Pension System; Old Age Assistance; Pay-As-You-Go	0.17	79.649
5	Pension System; Old Age Assistance; Pay-As-You-Go	0.57	79.649	Soft Skills; Knowledge Management Systems; Human Resources Management	0.49	6.487
6	Court of Auditors; European Court; External Auditor	0.42	22.97	Amalgamation; Local Government; Mergers	0.93	78.988
7	Public Procurement; Environmentally Preferable Purchasing; Tendering	0.47	94.415	Local Self-Government; Referendum; Lithuania	0.47	10.389
8	New Public Management; Regulatory Agencies; Social Responsibility	0.44	93.92	Public Procurement; Environmentally Preferable Purchasing; Tendering	0.45	94.415
9	Fiscal Decentralization; Federalism; Property Tax	1	94.784	Impact Assessment; Ex-Post Evaluation; Regulatory Reform	0.24	57.727
10	Soft Skills; Knowledge Management Systems; Human Resources Management	0.48	6.487	Public Value; New Public Management; Talisse	0.29	81.532

Source: Own editing, based on SciVal data

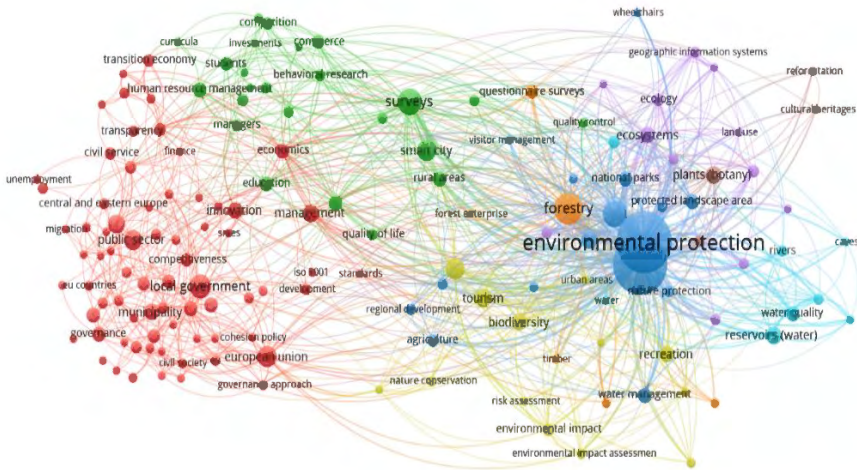
Table 9 shows the most significant topics. There are three topics that are included in the list for all the states surveyed:

- Fiscal Decentralization; Federalism; Property Tax;
- Open Government; E-Participation; E-Governance;
- Pension System; Old Age Assistance; Pay-As-You-Go.

And one topic is listed for three states: Public Procurement; Environmentally Preferable Purchasing; Tendering. Based on the list we can observe that the focus is on economics, complemented by the topic of modernization of public administration. In terms of the popularity index (PP) for the topic areas, “Open Government; E-Participation; E-Governance” is in the lead, while for the Czech Republic this topic also stands out in terms of weighted territorial impact. For the other states, these are different topics, but in general we can see that most of them do not reach the FWCI value of 1, so the published publications have a below-average citation impact. Based on the main topics a significant difference between legal or management-oriented countries cannot be observed.

The co-occurrence analysis of the keywords was performed using vosViewer, based on the publication list generated from Scopus. It is worth highlighting that it is appropriate that the majority of the publications are in English for the use of vosViewer, as the program is language-limited (English only) (Van Eck & Waltman, 2020). The keyword analysis was performed based on all keywords, including author keywords and indexing keywords. Out of a total of 5016 keywords, as the default setting of the program, keywords with less than 5 occurrences were excluded from the analysis, resulting in 155 keywords being included in the analysis. The result of the analysis is illustrated in Figure 3.

Figure 3:
The cooccurrence network of the most important keywords



Source: Own editing with vosViewer, based on Scopus data

Figure 3 shows the most important keywords grouped into clusters. The keywords with the strongest connection are regional planning (811 total link strength), environmental protection (810 total link strength), forestry (249 total link strength), conservation (220 total link strength), and sustainable development (119 total link

strength). In Figure 3, keywords with larger letters occurred more frequently, so these are considered more significant (Guo et al., 2017; Van Eck & Waltman, 2020). Words that were closer to each other and connected by thicker lines occurred more frequently with each other (Garrigos-Simon et al., 2018; Van Eck & Waltman, 2020). The first cluster contained 72 keywords, the second 24, the third 16, the fourth 13 and the fifth 12. The number of items in the remaining clusters is negligible. In terms of occurrences, keywords defining each cluster are the following:

- Cluster 1: local government, European Union, innovation
- Cluster 2: smart city, human resource management, rural areas
- Cluster 3: environmental protection, regional planning, national parks
- Cluster 4: ecosystems, ecology, land use
- Cluster 5: biodiversity, recreation, tourism

4. Conclusions

This study analyzes the scientometrics and bibliometrics of publications in the field of public administration in the Visegrad countries for the period 2011–2020. For the analysis, publications indexed in the Scopus database were included, and the analyses were performed using SciVal and vosViewer software.

Based on international literature, the Visegrad countries are in a semi-peripheral position in the scientific community compared to Western European countries, which strengthens their regional links. This was clearly evident in the analysis of co-authorship relations, as all the states under review have significant links in the Central European region. In addition, they have significant links with Western European countries, and it is this cooperation that gives rise to their most cited communications. The same trend can be observed for the most important journals, with the leading journals also coming from the region for all the countries studied. When we look through the list of top institutions and then analyzing their publication trends, we get a very interesting result. The analysis was restricted to journal publications, because mainly for Czech institutions, publishing in conference proceedings followed by local conferences is present with a high share of the total number of publications. By restricting the analysis only to journal articles, the role and importance of regional, Scopus-indexed journals can be studied. Among the top 10 institutions, we found that 5 have their highest share of publication in a journal where the editor-in-chief belongs to the same institution. A share that is higher than 50% is found in the cases of Maria Curie-Skłodowska University (82%), Corvinus University of Budapest (73%) and Tomas Bata University in Zlin (62.5%). Other cases show direct links between the leading journal and the university in associate editors, or editors responsible for statistics. This can lead to the conclusion that these universities rely on personal

contacts to a great extent, and if these journals lost the indexation or there was a change in the editorial board, the replacement of the given journal would mean a challenge.

The leading authors also rely to a great extent on the regional journals; four authors published all their Public Administration publications in the examined period in only one journal, while two of them published in the journal where they are editorial board members or senior editors. Ultimately this leads to ethical concerns, but this goes beyond the scope of this study. However, what we must declare here is that even though these authors could reach international visibility by means of their publications, they are very much exposed to the indexation of the regional journals.

In terms of important research topics and keywords, we can also see the complexity of public administration, as there are examples of policy aspects alongside economics and management. This illustrates the specific situation of public administration, which raises the question of whether it is a discipline in its own right, a cross-disciplinary discipline or an interdisciplinary discipline. The limitations of the study are due to the data available, on the one hand, I limited the analysis to the period 2011–2020 and I have only examined publications indexed by Scopus and available on the SciVal platform. These are the directions for future research: on the one hand, it is worthwhile to extend the temporal focus to other periods, and on the other hand, it is worthwhile to include not only Scopus publications in the analysis, but also those indexed by other international indexing databases (e.g., Web of Science).

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