

Regional Development at the European Level: A Bibliometric Analysis from 2019 to 2023

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Abstract

Regional development is a strategic objective at the European level that aims to eliminate disparities between different regions. The purpose of the paper is to document the interest in this objective using the research methodology by developing a bibliometric analysis, a quantitative research method, in the form of an inventory of the publishing activities specific to the field studied. The data analysed are from the Web of Science platform and refer to scientific works, books, and documentation in specialized journals. The query resulted in a number of 984 scientific documents containing the English acronym "regional development". June 4, 2023, the query was applied to publications from the last 5 years, published in European countries with research fields (Business Economics, Educational Research of Education, Management Science of Operational Research). The results confirm the growth of scientific interest in the field of regional development.

Key words: regional development, bibliometric research, quantitative research, case study, Web of Science

J.E.L. classification: F63

1. Introduction

Given the fact that in recent times theoretical and practical approaches are characterized by the rapid development of data collection methods, analyses and tools for their processing, scientific research is an important component of progress, not only in knowledge but also in technology, in the economy and in society in general. The development and evolution of society are achieved through the effort of each researcher, through the actions and ideas they transmit to society in various forms- publications, inventions, patents, applied analyses, and communications.

Regional development is a relatively new concept with new challenges at the European level, which aims to diversify and stimulate economic activities, increase investment in the private sector and reduce unemployment, all of which must contribute to improving the standard of living in all member countries of the community block.

“The process of any country’s development, and the specificity of implementing economic, social and political transformations in the context of global competition are always associated with a constructive economic development strategy that should be in line with the national interests and global trends in structural change. Sustainable development is the current imperative of the economic system’s structural rearrangement. Consequently, an increase in the world countries’ competitiveness is correlated with economic growth, and modernization of the economy and society in accordance with the socio-economic indicators of sustainable development.” (Dalevska et al, 2019 p.1840)

“The decrease of regional disparities represents one of the fundamental objectives of the regional development policy promoted by the EU, all the more so as the last waves of enlargement of the EU deepened even more these differences. As a member state of the EU, Romania is actively involved in reducing the economic gaps by applying some regional development strategies and policies.”(Șteliac, 2016, p 35)

The measures promoted by the local and central public administration authorities together with various actors (private, public, voluntary) lead to ensuring dynamic and sustainable economic growth, by effectively capitalizing on regional and local potential, in order to improve living conditions. Economic science tells us that, in general, resources are finite. There is a competition between the various social and economic sectors to obtain as many/large as possible allocations from the consolidated public budget, in an attempt to demonstrate to decision-makers the particular importance of the respective sectors' activity for the state and the society. (Asaloș et al, 2022, p. 235)

The main areas, where the measures included in the regional development are manifested, are quite varied, starting from the development of enterprises, the stimulation of investments, the transfer of technology, the labour market, the development of the infrastructure, the quality of the environment, rural development, education, health, culture. We live in a world where resources are limited. Global challenges, such as climate change and the degradation of land and ecosystems, together with a growing population, force all the world's economies to seek new ways of production and consumption that respect the ecological limits of our planet. At the same time, the need to ensure sustainability is a strong incentive to modernize our industries and strengthen the position of European Union countries in a highly competitive global economy, thus ensuring the prosperity of its citizens. (Paraschiv et al, 2020, p. 211)

The aim of the research in this article is to determine the interest in the area of scientific research at the European level on regional development, the funding of articles, the affiliation of the authors of scientific articles and the level of citation of scientific papers. For the analysis of research articles, we considered an appropriate method the statistical-bibliometric analysis, which presents an objective point of view regarding the volume of research carried out in the framework of regional development and the bibliographic links between this research, thus making an analysis regarding the cooperation between researchers.

The motivation for developing this paper comes from several directions. Following the query "biometric regional development" in the Web of Science platform, no result was found and in the Google Scholar platform, 3 results were found. The results of this research can be used to explain the specific notions of regional development in teaching activity.

2. Literature review

“Sustainable regional development is aimed at reaching a compromise between global, national and regional development priorities. The key concepts of sustainable development are the equality of relations, equilibrium, balance, and consistency.” (Dunets et al, 2019, p. 1219)

The basic objectives of the regional development policy at the European level are oriented towards:

- the reduction of existing regional imbalances, emphasizing the stimulation of balanced development and the reintegration of disadvantaged areas and the prevention of new regional imbalances;
- the criteria for integration into the structures of the European Union must be met by each regional entity and thus they have access to financial assistance instruments for member countries (structural and cohesion funds specific to each programming period);
- governmental sectorial development policies must be correlated with regional policies;
- interregional, internal and international cooperation must be stimulated in such a way as to contribute to economic development and to be carried out in accordance with legal provisions and international agreements concluded at the European level.

The principles underlying the development and application of regional development policies are:

- the decision-making process must be decentralized from the central/governmental level to that of the regional communities;

- all actors involved in the field of regional development must establish sustainable partnerships so as to respond to regional needs and be involved in the various stages of planning the activities necessary and specific to each region;
- considering that the development policy requires the participation of all actors, they must also make their financial contribution to the realization of programs and projects, thus ensuring their financing.

Starting from the principle of solidarity, the agenda for sustainable development leaves no one behind, based on the support of all individuals, communities, and countries. Lately, however, global threats such as inequalities and discrimination, poverty, unemployment, scarcity of resources, environmental degradation, climate change, and global warming, etc. have intensified as never before, so humanity must find new solutions to tackle them for communities/societies not to be at risk (Dumitrescu et al, 2022, p1). The existence of an integrated economic system and economic governance capable of responding quickly and efficiently to negative signals from within the European Union, but also from outside, would facilitate the return of the EU to sustainable and smart economic growth. (Stoica et al, 2020, p.1)

Following the adoption of the 2030 Agenda for Sustainable Development, in 2015, by the United Nations member states, the academic world is buzzing with various initiatives of higher education institutions worldwide that have been addressing, collectively and individually, the major challenges the document had revealed (Curaj, et al, 2020, p.907)

3. Research methodology

Science is a form of observation, understanding, explanation and transposition made from man's desire to understand the universal in which we live. As society evolved and developed, access to research activity became permissible for a growing number of researchers from increasingly varied field and different geographical areas, modern science becoming an attractive field. So, science can be seen as a process that generates new information, but also new point of research, having a consecutive and collective character: a scientific research work has at its starting point certain ideas taken from previous works and appears as a result of their development or reinterpretation (Mansour et al, 2022, p.891).

The scientific research was carried out by means of a bibliometric analysis, which used several resources such as databases (Web of Science and Scopus) and scientific processing and analysis procedures.

Scientometrics represents a form of knowledge with the objective to measure scientific research activity. "Bibliometrics is a branch of scientometrics that focuses mainly on the quantitative study of scientific publications for statistical purposes. Thus, bibliometrics is a research method that involves the development of an inventory of publishing activity at the level of countries or institutions and is used for comparative analyses of productivity in the scientific field." (Pătărlăgeanu et al, 2020 p.75)

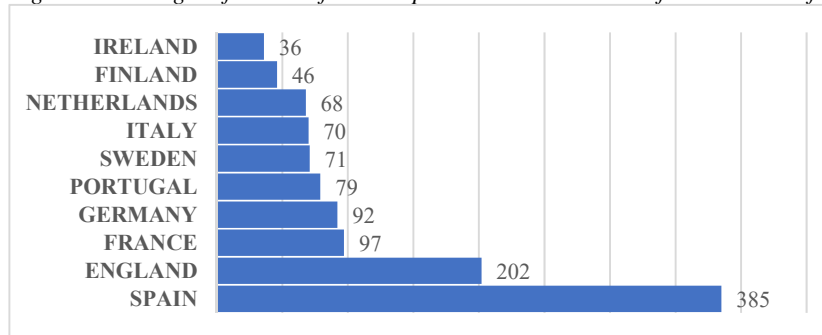
Therefore, the bibliometric study of scientific works does not represent a research innovation, and it is a quantitative research method of various fields of interest from specialized literature. The purpose of using this analysis is to provide information about the structure and the dynamics of the scientific field (science mapping) on hand, but also about the authors and publishing house performance (performance analysis). (Mansour et al, 2022, p.892)

The first activity was to query the entire Web of Science database using the tag "regional development" without introducing any other filter. From the analysis of the statistical database, an increase in the number of scientific articles was observed in the last 5 years.

Another analysis of this selection of articles was carried out by means of a word cloud created with the World Art application to see the association of frequently used words with sustainable development taking for 1000 articles, the title of the articles, the abstract, Author Keywords and Keywords Plus.

After the first query of the Web of Science database, following the statistical and density analyses, we decided to perform a new search in the database of articles using the tag "regional development" and we limited the search to the Arts & Humanities Citation Index (A&HCI), Science Citation Index Expanded (SCI-EXPANDED), Social Sciences Citation Index (SSCI). We also added new filters to the database: All open access, publication years 2019-2023, countries of origin in Europe, Research

Figure no. 4 Origin of authors for the top 10 countries retrieved from the Web of Science query



Source: Own conceptualization, following data processing from Web of Science (accessed on 04.06.2023)

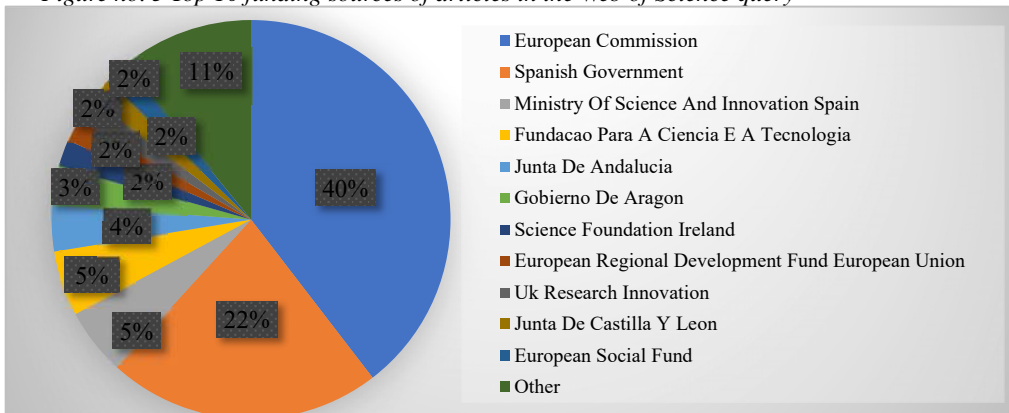
Funding for article writing, the top 10 sources for the 484 articles was:

Table no. 3 The first 10 funding sources resulting from the Web of Science query

Funding Agencies	Publications
European Commission	389
Spanish Government	218
Ministry Of Science And Innovation Spain	53
Fundacao Para A Ciencia E A Tecnologia	52
Junta De Andalucia	37
Gobierno De Aragon	31
Science Foundation Ireland	21
European Regional Development Fund European Union	19
Uk Research Innovation	19
Junta De Castilla Y Leon	19
European Social Fund	18
Other	107

Source: Own conceptualization, following data processing from Web of Science (accessed on 04.06.2023)

Figure no. 5 Top 10 funding sources of articles in the Web of Science query



Source: Own conceptualization, following data processing from Web of Science (accessed on 04.06.2023)

It is noted that the funding granted by the European Union through various programs (426 items) is followed by the Spanish Government, Ministry of Science and Innovation in Spain and regional administrations with 358 items financed, Fundacao para a Ciencia e a Tecnologia from Portugal with 52 items financed, Science Foundation Ireland 21 funded articles and UK Research Innovation 19 funded articles.

We also analysed the authors who have at least 6 articles within the 484 articles included in our analysis and we have the following distribution.

Table no. 4 The first 8 authors for the 484 articles resulting from the Web of Science query

No. crt	Name and surname	Membership	Number of article
1	Benitez Jose	EDHEC Business Sch, Roubaix, France	12
2	Dimitriadis Yannis	Univ Valladolid, Dept Telemat Engn, Telemat Engn, Valladolid, Spain	8
3	Goberna Miguel Angel	Univ Alicante, Dept Math, Alicante, Spain	7
4	Aparicio Juan	Univ Miguel Hernandez Elche, Ctr Operat Res CIO, Elche, Alicante, Spain	6
5	Buil Isabel	Univ Zaragoza, Fac Business & Econ, Spain	6
6	Catalan Sara	Univ Zaragoza, Dept Mkt, Zaragoza, Spain	6
7	Lozano Sebastian	Univ Seville, Engn Sch, Dept Ind Management, Seville, Spain	6
8	Morales Juan	Univ Malaga, Dept Appl Math, Malaga 29071, Spain	6

Source: Own conceptualization, following data processing from Web of Science (accessed on 04.06.2023)

The first 8 authors in terms of the number of scientific articles included in the selection criteria of the current study are of Spanish origin, this is due to the fact that the Spanish government and regional administrations supported the publication of articles.

The first author, Benitez Jose, with a number of 12 articles, is also of Spanish origin even if he currently teaches in France, as he graduated from the University of Granada.

The 984 articles are cited 10,606 times with a Hirsch Index (H Index) of 44. The citations for the first 5 articles are as follows:

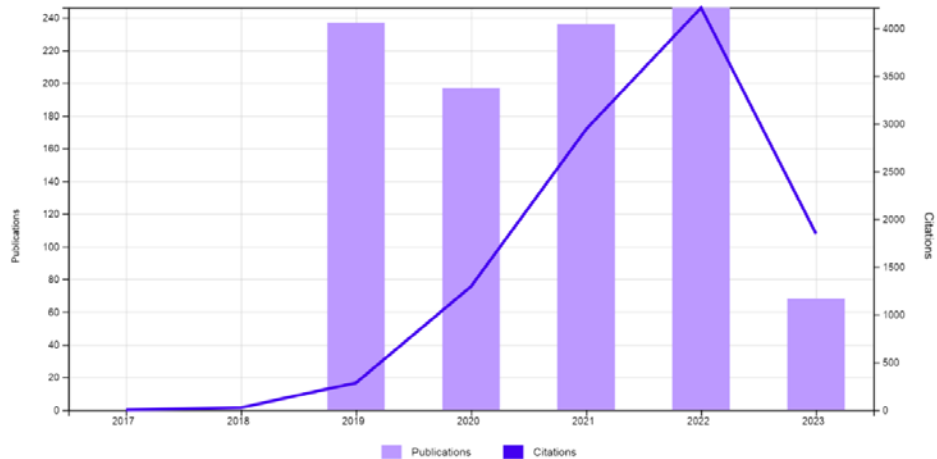
Table no.5 The first 5 articles in terms of the number of citations obtained from the Web of Science query

No. crt	Article title	Publication year	Total citations	from which:				
				2019	2020	2021	2022	2023
Total			10.606	284	1.294	2.941	4.216	1.846
1	How to perform and report an impactful analysis using partial least squares: Guidelines for confirmatory and explanatory IS research	2020	478	1	43	142	201	91
2	Twenty-five years of research on institutions, entrepreneurship, and economic growth: what has been learned?	2019	205	13	39	56	71	26
3	Regional development and carbon emissions in China	2019	204	7	48	55	68	26
4	Special issue on entrepreneurship and crises: business as usual? An introduction and review of the literature	2019	168	0	16	73	58	21
5	Entrepreneurial ecosystem research: present debates and future directions	2019	163	9	27	59	48	20

Source: Own conceptualization, following data processing from Web of Science (accessed on 04.06.2023)

The combined graph for a number of articles and a number of citations is as follows:

Figure no. 6 Number of articles and number of citations



Source: Web of Science (accessed on 04.06.2023)

According to the criteria selected in Romania, there are 7 articles. The publication of the articles was as follows:

Table no. 6 Articles published in Romania resulting from the Web of Science query

Year	2022	2021	2020	2019
Number articles	3	1	1	2

Source: Own conceptualization, following data processing from Web of Science (accessed on 04.06.2023)

The University affiliation of the authors was as follows: University A.I. Cuza (3), University of 1 Decembrie 1918 Alba Iulia (1), ASE Bucharest (1), University of Oradea (1) and West University of Timișoara (1). All articles were written in English.

The financing for the writing of the articles comes from European funds (European Commission, POC, PNCDI, Interreg Romania - Hungary) or through the national structures that administer education and research (Ministry of Education, National Council of Scientific Research CNCS and UEFISCDI).

After applying the filters for the Scopus database, 945 documents were found that were cited 6581 times. The citations for the first 5 articles are as follows:

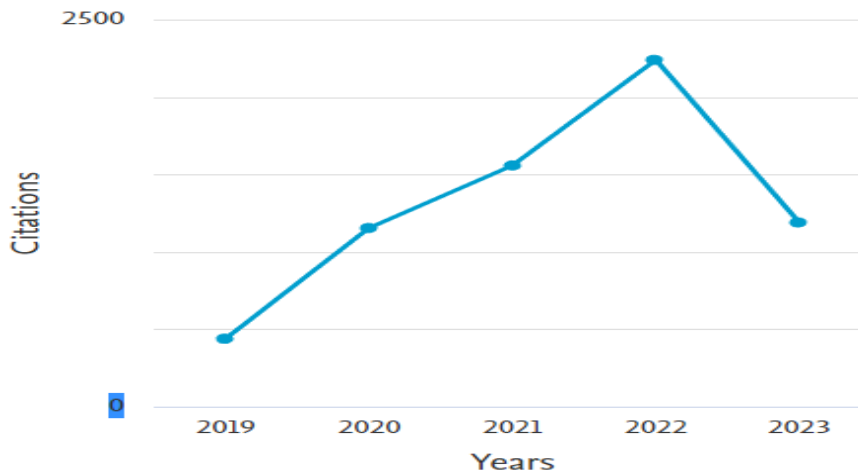
Table no. 7 Top 5 articles by number of citations from the Scopus query

No. crt	Article title	Publication year	Total citations	from which				
				2019	2020	2021	2022	2023
Total			6581	439	1154	1558	2240	1190
1	Global climate change and greenhouse effect	2020	146		10	40	54	42
2	A model for estimating social and economic indicators of sustainable development	2019	107	30	23	31	19	4
3	Rebirth of Industrial Policy and an Agenda for the Twenty-First Century	2020	101		9	30	34	28
4	Evaluation of the energy security as a component of national security of the country	2019	74	6	16	26	16	10
5	Selection of strategic priorities for sustainable development of tourism in a mountain region: Concentration of tourist infrastructure or nature-oriented tourism	2019	70	3	38	21	6	2

Source: Own conceptualization, following data processing from Scopus (accessed on 06.06.2023)

The citations per year chart is represented as follows:

Figure no. 7 Number of citations obtained from the Scopus query



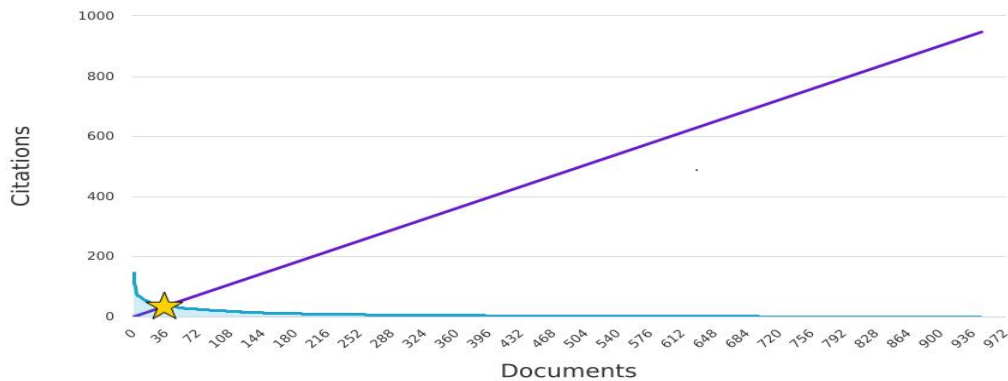
Source: Scopus (accessed on 06.06.2023)

The Hirsch Index (H Index) for the selection made in the Scopus database according to the presented selection is 36 because the first 40 articles have a minimum of 36 citations. Graphic representation:

Figure no. 8 Hirsch Index (H Index)

These documents h-index36

Of the documents considered for the h-index, have been cited at least times



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Source: Scopus (accessed on 06.06.2023)

5. Conclusions

Based on what was analysed in the statistical and bibliometric research, we can draw a series of conclusions that are relevant to the research topic that was addressed. A first conclusion is related to the need to support research in the field of regional development, considering the need to eliminate imbalances between the various regions of Europe, the realization of common and aggregated policies at the European level, the decentralization of the decision-making process in all European countries and the participation of all actors involved in taking decisions and the development of each region. Regarding the results obtained by the statistical - bibliometric analysis, they show the fact that the subject analysed was of interest to the scientific community, through the 484 research published in the last 5 years. The spread of the subject at the European level and the achievement of

objectives formulated for regional development means that attention and material efforts are directed towards the aspects that are more difficult to achieve for each region.

A specific case, resulted from the statistical and bibliometric analysis, is that of Spain, which saw in the existence of structural and cohesion funds an opportunity for balanced development and the reintegration of disadvantaged areas by finding solutions through scientific articles. Thus, the first 8 authors in terms of the number of scientific articles included in the selection criteria of the current study are of Spanish origin, this is due to the fact that the Spanish government and regional administrations supported the publication of articles.

The authors of present paper commit to carry out future research, in which to address the field of regional development, that can have both practical and theoretical implications, to better identify the elements that influence regional economic development, the fulfilment of the integration criteria at the European level, increasing the degree of cooperation at the regional level and highlighting measures to ensure economic resilience, thus contributing to the improvement of knowledge and scientific literature in the field of regional development.

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