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# A Bibliometric Mapping of the Research Trends of Public Governance and Entrepreneurship Framework

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**Abstract:** The involvement of governments and public institutions in entrepreneurial activity has grown considerably in the last years. Public governance has begun to pay more attention to the fact that, in order to achieve the goal of economic development in a country, it is necessary to increase entrepreneurship both qualitatively and quantitatively. Most governments have created significant actions that encouraged and supported the entrepreneurial activity and also they have contributed to supporting the private sector in the economy. The present paper analyses the scientific works related to entrepreneurship and public governance, as well as to investigate the connection between these topics. The study presents a bibliometric analysis of the importance of the nexus public governance and entrepreneurship. The proposed research studies 201 references collected from the Clarivate Analytics, Web of Science Core Collection database. The research methodology performed to graphically map the literature is bibliometric analysis. The analysis is carried out on three distinct levels, namely the analysis of the co-occurrence of keywords, co-citation and co-author by means of (VOS) viewer program. This approach allows us to highlight the main results presented in journals, magazines, documents, subjects, authors, institutions but also results recorded at the country level. The study also evidence the main trends and impact of research in the form of a visual and schematic research framework on the relationship between public governance and entrepreneurship and its related elements, namely innovation and development.

**Keywords:** *public governance; entrepreneurship; bibliometric analysis; visualization.*

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## 1. Introduction

Governance is of interest to both government and business policy environments. It is important to understand and conceptually delimit the two phenomena: i) public governance is highlighted at the level of the decision-making process and the institutional framework through which the authority of a country is exercised; ii) Entrepreneurship is considered an instrument even have a channel through which economic growth and innovation can be generated, regardless of the stages of a country's development. Therefore, understanding the complex link between governance and entrepreneurship remains an important area of research, policy discussions and strategic analysis and decision-making in recent years.

The role of entrepreneurship in economic development vary from economy to economy, depending on its material resources, the industrial climate and the receptivity of the political system to the entrepreneurial function. The economic history of many countries highlights the fact that the economy is sustained and is largely influenced by entrepreneurship. Many experts have tried over time to separate entrepreneurship from public strategies and policies, arguing that entrepreneurship is practically a passion and that entrepreneurs start their business out of enthusiasm. However, over time it has been noticed that entrepreneurial behaviours change in response to changes in public policy. Thus, it is essential to delimit the concept of public governance from that of entrepreneurship, the term governance is characterized by a process of decision-making, regulations and rules in force, but also to consider the implementation of all rules, taking into account the main factors of governance, these being both of a political nature, state security, and of an economic nature, key points that give the business environment, entrepreneurship long-term stability at a national level. Entrepreneurship is known as one of the most important links, it is essential for the continuous development of the modern market economy, taking into account the fact that the opening of as many start-up enterprises leads to the stimulation of economic growth. As a global perspective to ensure sustainable development of the entrepreneurial environment, certain aspects specific to each nation must be taken into account, such as i) political stability; ii) the effectiveness of government decision-making; iii) the rule of law; iv) control of corruption; v) independence of the judiciary.

Taking into account the previous theoretical and empirical literature that has repeatedly highlighted the influence of the quality of public governance at the national level that it can have on entrepreneurship, we

consider necessary to investigate the relationship between the two phenomena in all its forms, using biometric analysis for a period. long time to observe the research methodologies and the results obtained by the researchers in the field.

The rest of the paper is structured as follows: Section 2 presents the methodological aspect of performing a bibliometric analysis, Section 3 presents relevant results after performing bibliometric analysis and Section 4 concludes.

## **2. Literature review**

Many authors argue that entrepreneurship is considered a potential driving force for economic growth given several channels through which it exerts its impact, the most important being the level of production, jobs and even the generation of innovation in the economy. (Frankfort, 1976; Jovanovic, 1992; Lichtenberg, 1992; Volkov, 1993; Coe & Helpman, 1995; Engelbrecht, 1997). Although the positive relationship between growth and entrepreneurship is undeniable, some authors suggest that the productive or unproductive trend of the economy depends mainly on the state of a country and its characteristics: inflation, unemployment, income inequality, investment, innovation (Wong, Ho & Autio, 2005), including macroeconomic and political stability (Wennekers, Van Wennekers, Thurik & Reynolds, 2005). As regards public governance, economists of development consider that governance would have both a direct and indirect effect on economic growth, evidenced through different econometric studies (Kaufmann et al., 2006; Khan, 2007; Aspara, Lamberg, Laukia, & Tikkanen, 2011; Liu & Hsu, 2011; Park, Yul Lee, & Hong, 2011; Schunkert et al., 2011; Smolarski & Kut, 2011).

Public governance can affect the dynamics of entrepreneurial activity, by directly influencing the economic environment; through the development of infrastructure and support for the generation of research and innovation. Nevertheless, regarding the analysis of the links between entrepreneurial activity at the micro-level and governance at a macro level, the typology of the causal relationship is not clear. Research in the field highlights a relationship of reverse causality, as the emergence of an active entrepreneurial environment can provide reliable support, both for designing and implementation of public policies and development strategies (Dima, Lobont & Moldovan, 2016). Thus, in this paper, we consider that public governance and entrepreneurship represent two complementary phenomena, which cannot be analyzed separately, but only together to

obtain the most conclusive results, including in the analysis other phenomena such as innovation and economic growth. Many studies have investigated how innovation, entrepreneurship and public governance can influence economic development. For example, taking into account the influence of the main determinants in the business environment, Thai & Turkina (2014) highlighted that the quality of governance positively influences formal entrepreneurship, not being able to mention this aspect in the case of informal, with the same opinion as Dau & Cuervo-Cazurra (2014). It also explains the existence of a positive relationship between the development of the entrepreneurial environment and the degree of implementation of governance principles because “entrepreneurs consider it easier and less expensive to start new companies and get involved in economic relations because they can trust the regulatory framework, which ensures the settlement of disputes with others at a low cost. Kaufmann et al (2006) also stated that the efficiency of the quality of governance, at the organizational and government level, determines a development in the entrepreneurial sector. Also, Klapper et al. (2007) considered in the analyzed studies that entrepreneurship is closely related to the application of the principles of quality governance, the making of the best decisions by political decision-makers.

We noticed that the literature in the field of public governance, entrepreneurship, but also the correlation between the two has seen, especially in the last years, a remarkable increase in the number of articles and studies. To extract and manipulate complex data sets or information, as well as implies the analysis of the public governance-entrepreneurship correlation, bibliometric methods are often performed, based on the analysis of content or citations that allow the processing of computerized information. Given that in recent years there has been an increase in the number of publications in the field, it becomes increasingly obvious the need to apply computerized methods, which require a certain volume of data to be statistically reliable. The results of the bibliometric approaches reveal a series of information, including reserach trends, topics addressed by researchers, but also the evolution of their impact within journals, articles, topics, authors, institutions and countries.

The novelty of this research is that it aims to provide a more accurate picture of the research trends in the correlation between public governance and entrepreneurship. The proposed research approach supports researchers and practitioners, ensuring a visual understanding and a schematic architecture for research on this topic. Thus, our research focuses both on the correct conceptualization of the entrepreneurial environment

and public governance, as well as on the identification of the perspectives of the methodological framework developed in this sense, encountered in other researches dedicated to the fields.

### **3. Research methodology**

This study proposes a bibliometric analysis of the state of knowledge in the field, to highlight all the valences of the entrepreneurial environment capable of generating a positive economic and social impact, in the context of a regulatory and strategic intervention of public policies oriented towards it. In order to perform a robust empirical analysis, able to identify the conceptual structure of the proposed research field, we considered the importance of selecting a software that facilitates how information can be viewed and analyzed.

The software tool selected for the construction and visualization of bibliometric networks targeted the VOS Viewer software, a similarity visualization (VOS) program to graphically map the material, considering science mapping. (Table 1) The analysis involves keywords, co-citations and co-authors. This software is a widely used tool in bibliometric research because it facilitates the understanding of a studied field, rendering the results in the form of bibliometric maps, providing information on the structure and networks of authors, typology of journals, institutions, research centres or universities interested in a particular field. respectively the countries in which the subject is of interest.. Straightforwardly, VOSviewer is a software tool that allows the construction and visualization of the so-called bibliometric networks, respectively the links between all those involved in the research of a certain topic: journals, research authors or research groups or individual publications. These networks can be built on citations, bibliographic links or co-author relationships. Thus, the aspects that can be studied aim at: i) the co-appearance of keywords, scientific authorship, respectively the number of co-authors among the most productive sources; and co-citation.

VOSviewer also offers text mining functionality that can be considered to build and observe co-occurrence networks of important terms extracted from the literature database in social science (i.e., Web of Science, Scopus, EBSCO, EconLit files, Dimensions, PubMed, Crossref, OpenCitation) and reference manager files (i.e. EndNote, Reference Manager, RIS file and RefWorks files) can be provided as input to VOSviewer.

**Table 1** The functionality of the VOSviewer bibliometric software

<i>Research tools</i>	<i>VOSviewer Software tool for viewing networks (bibliometric)</i>
VOSviewer users	Researchers and research institutions Universities and academic libraries Research funders Scientific publishers Industry Others
Bibliometric networks in VOSviewer	Web of Science Scopus PubMed
VOSviewer functionality	VOSviewer was developed in the Java programming language Creating maps based on network data Visualizing and exploring maps
User interface	VOSviewer ofera The VOSviewer user interface provides <ul style="list-style-type: none"> <li>- 5 panels are displayed in the main window: (1) the main panel, (2) the options panel, (3) the information panel, (4) the overview panel and (5) the action panel.</li> <li>- three active maps in the main panel, called Network Visualization, Overlay Visualization, and Density Visualization</li> </ul>

*Source: Data processed by the authors from VOSviewer Manual (Van Eck and Waltman, 2020).*

Our research considers data extracted from Clarivate Analytics platform, Web of Science Core Collection database. WoS is one of the two most popular and accredited databases at an international level because incorporates high impact journals.

Considering to focus only on public governance and entrepreneurship material, the results were filtered using the keywords and expressions such as: “public governance” OR “good governance” OR “governance effectiveness” OR “public institutions” AND “entrepreneurship” OR “entrepreneurial activity” for all the knowledge areas in the WoS. Even though the keywords are numerous, they are closely related to public governance and the concept of entrepreneurship. The sample includes all papers (documents) published until 2019, limited only to articles, resulting only 201 documents.

In the VOSviewer practice it is important to know and understand the terminology used by the software (Table 2).

**Table 2** Summary of the main options offered by the Create Map wizard

<i>Data type</i>	<i>Data source</i>	<i>Links</i>	<i>Elements</i>
Bibliographic data	Bibliographic database (i.e., Web of Science) Reference manager files APIs (i.e., Microsoft Academic API, Crossref API, Europe PMC API)	Co-author	Authors Organizations Countries
		Co-occurrence	Keywords
		Citations	Documents Sources
		Bibliographic analysis	Authors Organizations Countries
		Co-citation	Cited references Cited sources Cited authors
Text data	VOSviewer files Database Reference manager APIs	Co-occurrence	Terms

*Source: Data processed by the authors from VOSviewer Manual (Van Eck and Waltman, 2020).*

Articles are viewed as objects of interest. Articles can be, for example, publications, researchers or terms, so there can be a link between any pair of articles. A link represents a connection or a relationship between two elements, examples of such links are the links of the bibliographic link between publications, the links of co-authority between researchers and the links of coincidence between terms. Each connection has a power, represented by a positive numerical value, as follows: the higher this value, the stronger the connection. The strong point of a link may be, for example, the number of cited references that two publications have in common (in the case of bibliographic links), the number of publications that two researchers have as co-authors (in the case of links co-authorship), or the number of publications in which two terms appear together in an article (in the case of coincidental links). A cluster is a set of elements included in a map, which is identified and does not overlap in VOSviewer. In other words, an element can belong to a single cluster. Clusters do not have to cover all the elements in a map, so items that do not belong to any cluster can be registered. Clusters are labeled for specific cluster numbers and detect

communities. The end result can be considered that the elements can thus have various attributes in VOSviewer. Thus, if items have been assigned to clusters, cluster numbers are an example of an attribute. Of particular relevance are the attributes of weight and score, and an article is considered more important if it is marked more strongly in our analysis, compared to another less visible.

Attention should be paid to the fact that there are two standard weight attributes, which indicate both the number of links and the intensity of the link, called the Links attribute and the Total Link Intensity attribute.

#### 4. Empirical Results

For the construction and visualization of bibliometric networks, scientific mapping, VOS visualization software was applied.

##### 4.1. Keywords Analysis

In keyword analysis, we can focus on the distribution of the most common keywords by matching keywords. This approach supports the research approach, highlighting the most important research topics in the field of public governance and entrepreneurship. This analysis counts the number of documents in which two keywords appear together. After examining the 201 related papers, the VOS Viewer software indicates the existence of 328 keywords. (Figure 1) It can be noticed that a group of associated keywords or a group of keywords is highlighted in the same colour for nine clusters within our search, but only six important for the relationship between public governance and entrepreneurship.

**Table 3** Summary of keywords analysis results

<i>Cluster type</i>	<i>Keywords associated with cluster</i>
1. Yellow cluster	“governance”, “entrepreneurial activity”, “institutions”
2. Purple cluster	“entrepreneurship” or “entrepreneur” and “entrepreneurial intention”
3. Dark blue cluster	“European Union”, “sustainable development”
4. Green cluster	“good governance”, “sustainability”, “performance”
5. Red cluster	“social entrepreneurship” and “social economy”
6. Light blue cluster	“innovation”, “technology transfer”, “university”

Source: Authors’ own conception

Figure 1 evidences the 16 keywords with the most frequent co-occurrences (considering a threshold of 2 co-occurrences).



**Figure 1:** *Co-occurrence network of author keywords of public governance and entrepreneurship related publications.*

**Source:** authors' design through VOSviewer.

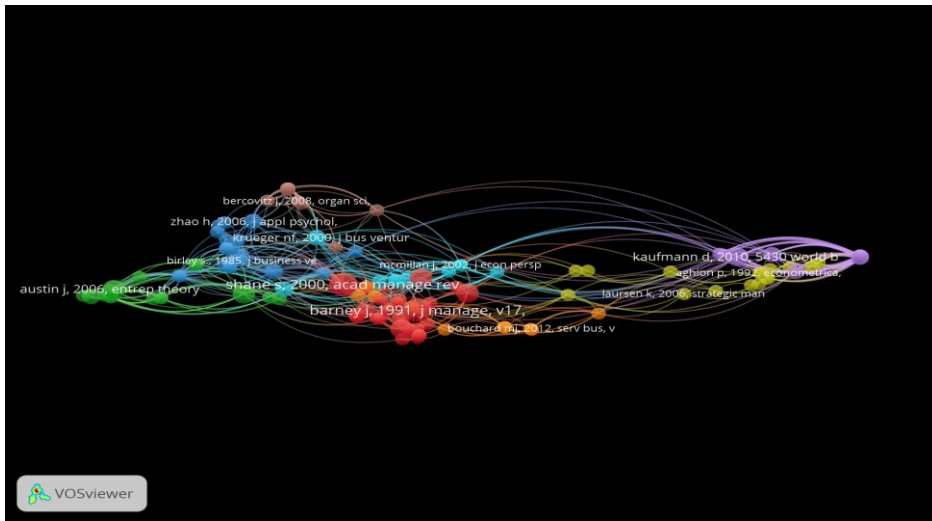
Figure 1 highlights not only the main keywords but also the node size and the relationship between them. Thus, the large highlighted node and keyword highlight the importance, and the thicker lines express a more frequent co-occurrence. The small distance between the nodes reflects the strong relationships they have.

The classification criteria for establishing the ranking were: distance to the centre of the figure and distance to the clusters represented by "governance" and "entrepreneurship". We can identify that the distance between the cluster represented by "governance" and the cluster represented by "entrepreneurship" is the shortest. This remark strengthens the relationship between the two topics analyzed.

#### ***4.2. Reference, Journal and Author Co-Citation Analysis***

In order to identify the most relevant bibliographical references, the co-citation analysis is indicated, as it can highlight the simultaneous citation of two documents, author or journal by a third document.

And to highlight the results of this empirical approach, bibliometric documents are grouped into clusters with network analysis. (Figure 2)



**Figure 2:** *Co-citation of cited references on public governance and entrepreneurship documents.*

**Source:** authors' design through VOSviewer.

This approach identifies the relationships, the structure, the characteristics and the development of public governance related to entrepreneurship and maps these relationships. The co-citation references detect main research themes about public governance and entrepreneurship. Figure 2 point out that the publication by Shane (2000) was cited 6 times (the highest number of citations). We also obtained the same result for another publication who belongs to Barney (1991). The document published by Shane in 2000 has a higher strength of link than the other (42), followed by the publication by Kaufmann (2010) who has 4 citations with strengths of the link of 40. As we can see in figure 2, the results obtained led us to the 8 clusters. The first of these, in red, comprises 28 items and is led by Barney's studies, followed by the second and third cluster, in green and blue, both with 20 cites. These studies were conducted by authors such as Alvord et al. (2004), Austin et al. (2006) and Aldrich and Martinez (2003) The rest of the clusters are more dispersed (yellow, purple, orange and brown) and does not reflect a strong connection between the elements included.

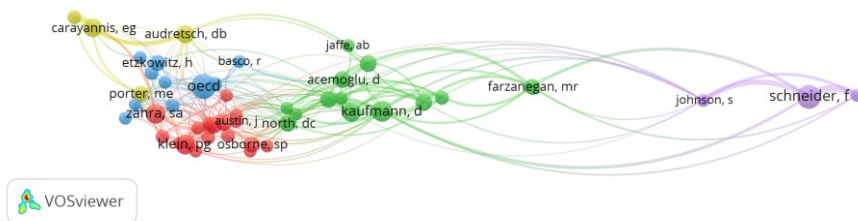
Shane's (2000) publication is a book about the phenomenon of entrepreneurship in which different theoretical aspects regarding entrepreneurship are presented, such as the definition of entrepreneurship, the arguments for which entrepreneurship is a topic that needs to be

carefully analyzed, as well as about the opportunities that entrepreneurship will generate in the future.

Barney's (1991) publication is another book in which other theoretical aspects of entrepreneurship are described, but which depart from the scope of the topics analyzed in our paper. His study focuses more on the strategic management research area. Barney's work concludes by examining the implications of this firm resource model of sustained competitive advantage for other business disciplines.

### ***4.3. Author co-citation network on public governance and entrepreneurship***

The third proposed analysis focuses to evidence the author's network and aims at the analysis of co-citation. Figure 3 evidence the results of the analysis, which generated five clusters comprising 50 authors, out of 3057 citations, with a threshold of 5 citations.



**Figure 3:** *Author co-citation network on public governance and entrepreneurship.*

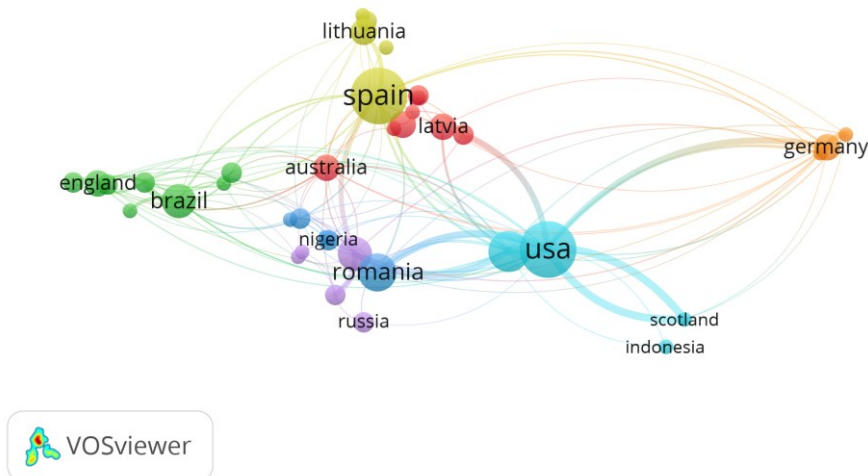
**Source:** authors' design through VOSviewer.

Regarding the number of authors, we perform the following selection: i) the first cluster in red (also the main cluster), positioned on the left side of the figure, includes 19 items; ii) the second cluster in green, on the right side of the figure, comprises 13 objects; iii) the third cluster of several components is in blue and includes 10 authors; iv) the fourth cluster, with only 4 authors, is in yellow, on the far left of the figure and v) the fifth and last cluster, in purple, contains only 3 items. The main cluster (red) focuses on entrepreneurship and is led by Klein et al. (2010, 2013), the author with the highest number of citations (11) and with the highest strength of link (1023). The red cluster also presents two other important authors, being among the top 10 authors depending on the citation or the strength of the linking criteria, namely Zahra et al. (2009) (11 citations, 55 strength of link), Shane (2000) (8 citations, 58 link strength) according to the link strength criterion. This cluster also includes among the top 10 authors, one institution, namely the European Commission.

The cluster highlighted in green is the second most important and includes Kaufmann as first author (2006, 2010) (12 citations, 126 link strength), and three other authors included among the top 20 authors in this list: World Bank (2014) (10 citations, 53 link strength), Acs (2006) (8 citations, 65 link strength), Acemoglu (2003) (8 citations, 28 link strength). The third cluster (blue), which contains 10 items, includes one of the most important authors which is OECD (17 citations, 37 link strength). The fourth and fifth clusters (yellow and purple) are also important because they contain authors that are included among the 20 most cited authors list: Carayannis and Grigoroudis (2016) (10 citations, 96 link strength), Schneider et al. (2011) (16 citations, 160 link strength), Acs et al. (2007) (9 citations, 73 link strength) and Hoskisson et al. (2002) (5 citations, 86 link strength). Last but not least, we should mention that most groups contain authors who have further developed the notion of entrepreneurship. Consequently, the topic of our study is less addressed in the works performed by them.

#### 4.4. Country and Institution/University Co-Author Analysis

As a latter, the proposed analysis focuses on co-author analysis in order to examine the structure of the authors and the links between them regarding research collaboration in a specific area of scientific interest. This approach allows us to analyze the behaviour of research teams and their network of relationships, identifying influential countries or institutions.



**Figure 4:** Countries co-authorship network of public governance and entrepreneurship.

**Source:** authors' design through VOSviewer.



The most influential institution from our analysis is represented by The Bucharest University of Economic Studies with 3 published documents and 291 total link strength. Another remarkable institution is represented by the University of A Coruna from Spain which has assigned 2 documents with 73 total link strength. Complutense University from Madrid is another institution from Spain which has 2 documents with 119 total link strength. Also, the soft generated 9 clusters. From all of this, we identify 4 main clusters which contain in the most part organisations from countries like Spain, Romania, USA, England, China, Lithuania and other.

## 5. Conclusions

This study analyzes the relevance of public governance and entrepreneurship research through the use of bibliometrics. However, this study covers a research gap, addressing the evolution of entrepreneurship and public governance, by presenting the results visually. From our point of view, this analysis not only confirmed the link between public governance and entrepreneurship but also discovered other areas of research close to the topics addressed.

The results lead to the following conclusions. Firstly, keyword analysis focuses on identifying the most common keywords and how they are distributed through keyword co-occurrence. The keywords co-occurrence reveals that the main subjects on public governance and entrepreneurship belong to four main areas, three related to entrepreneurship, and two related to public governance or public institutions. Hence, the most frequent keywords are social entrepreneurship, governance, entrepreneurship, innovation, and good governance. Specifically, the main words that are connected to entrepreneurship and governance in the same cluster are words like sustainable development, performance, innovation, entrepreneurial intention, institutions and entrepreneur. From our point of view, this analysis not only confirmed the connection between public governance and entrepreneurship but also discovered other research areas close to the topics addressed.

Secondly, the co-citation of cited references on public governance and entrepreneurship documents has an important role in our analyses. This approach revealed which are the main sources that were the basis of the analyzed materials on the topics discussed. The main documents who have been cited most often belong to Barney, Shane and Kaufmann. After analyzing their materials, we discovered that they researched different theoretical concepts related to entrepreneurship such as the definition of

entrepreneurship, the arguments for which entrepreneurship is a topic that needs to be carefully analyzed, as well as about the opportunities that entrepreneurship will generate in the future. This analysis only responded to a certain extent to our needs because the main results did not refer to the concept of public governance or public administration.

Thirdly, the author co-citation analysis yields five clusters of authors. The three main authors identified are mentioned above. The plus that this analysis brings is that it also identified institutions or organizations that researched the studied fields. The main and the most important institutions are the World Bank, the OECD and the European Commission.

The countries co-authorship analysis of public governance and entrepreneurship documents identifies six nodes of countries, led by the USA, Romania, Germany, Spain, Brasil and England. Finally, the leading universities come from Romania, with The Bucharest University of Economic Studies; other universities from Spain, USA, England are also well placed. In this regard, the study succeeded to map the research dimensions of public governance and entrepreneurship, their relevance and their evolution and influence factors. These results are important for decision-makers and practitioners when developing sustainable economic policies, which take into account the complexity of the subject from a managerial, sociological or economic perspective.

This study concludes that performing this methodology has led to results that, for the most part, refer to the concept of entrepreneurship and less to the concept of public governance. However, the involvement of governments and public institutions in entrepreneurial activity cannot be denied. Based on the results obtained, we consider that these conclusions are important both for policymakers when considering new regulations for the sustainable development of the economy, and companies at national and international level.

In recent years, most governments have created significant actions that encouraged and supported the entrepreneurial activity, but scientific research on these actions is still quite limited. For this reason, we consider this to be the biggest research limitation of our study, but it can also be viewed as an advantage because there is enough space for new approaches in this area. In addition to the directly highlighted results of the correlation between entrepreneurship and public governance, there are also other related phenomena, such as innovation or economic development.

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