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**Article**

## Analysis of scientific production on organizational innovation

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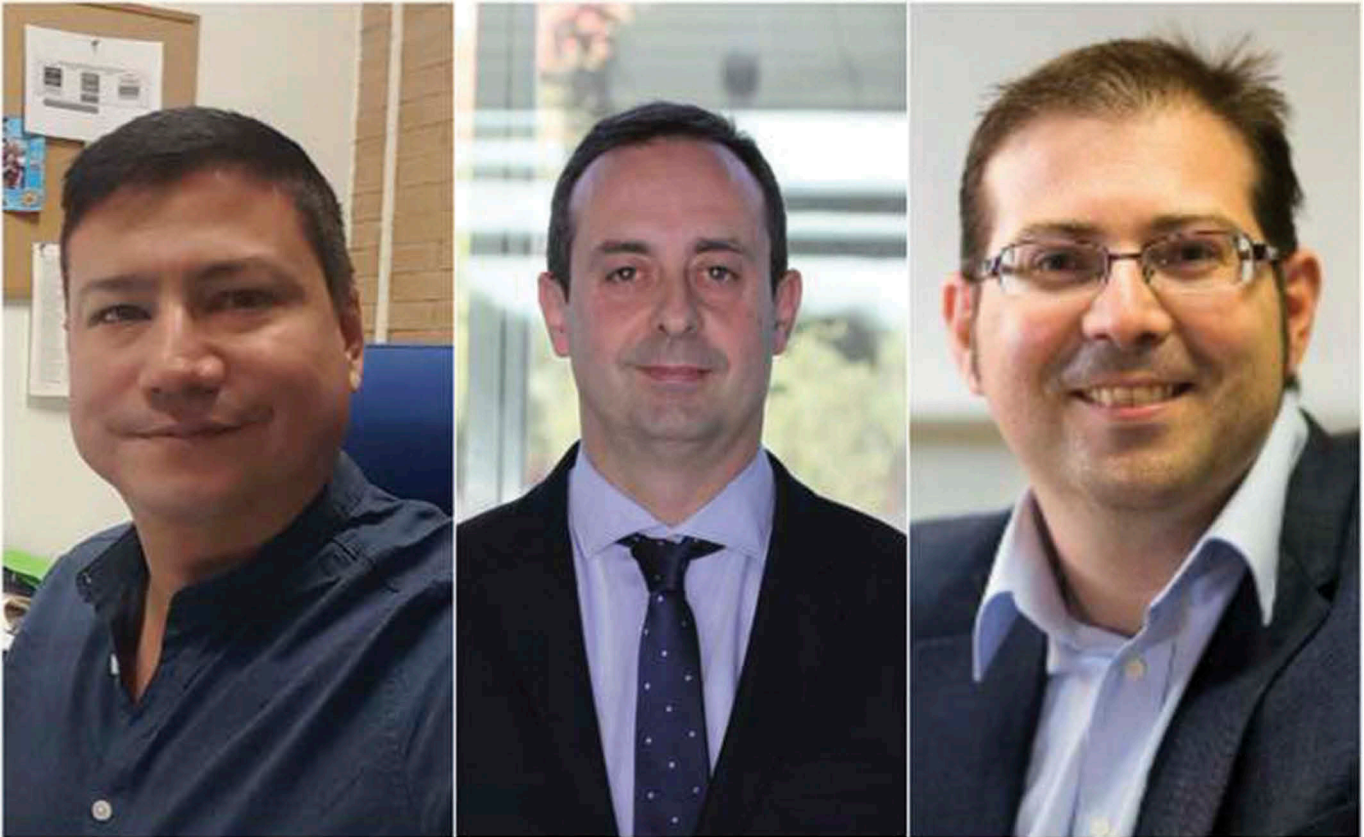
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## MANAGEMENT | RESEARCH ARTICLE

# Analysis of scientific production on organizational innovation

Néstor Montalván-Burbano<sup>1,2</sup>, Miguel Pérez-Valls<sup>2</sup> and José Plaza-Úbeda<sup>2\*</sup>

**Abstract:** Studies in organizational innovation have shown rapid growth in the last two decades, so it is necessary to perform a qualitative and quantitative analysis of scientific production to know its current status and development in business activity. In this research, bibliometric analysis and mapping were performed on the publications indexed in the Scopus database between 1996 and 2015, obtaining relevant information on scientific production, contributions by region/country, institutions involved, topics and influential authors. A map of terms was generated that establishes research areas related to organizational systems, firm relations and organizational change, as well as a map of citations showing the disciplines of administration, dynamic capacities and organizational learning related to the subject of study and its main exponents. The findings of the study allow identifying areas of current interest and research potential in Organizational Innovation.

**Subjects:** Strategic Management; Management of Technology; Innovation Management; Small Business Management

**Keywords:** bibliometrics; bibliometric mapping; scientific production; organizational innovation; management innovation

### 1. Introduction

Economic and business development are linked to innovation through their interactive nature of involving companies and adapting quickly to changes in their surroundings (Andersen & Drejer, 2008; Nieves & Segarra-Ciprés, 2015), as well as to achieve both social and economic objectives (Ferreira et al., 2015; Volberda et al., 2013). At the business level, innovation provides creativity, skills development, competitive advantage and performance (Damanpour, 2014; Damanpour et al.,



Néstor Montalván-Burbano

### ABOUT THE AUTHOR

The three authors of this paper are researcher focused on organizational capabilities. More specifically Nestor A. Montalvan is a Phd Student of Management and SMEs. Both Miguel Perez-Valls and Jose A. Plaza-Úbeda are his supervisors and, at present, are senior lectures of the University of Almería with research focus on stakeholder management, sustainability, alliances, human resource management as well as organizational innovation. These authors has published prior articles in different to journal focused on ethics, management, sustainability and human resource management. These authors has developed this research in the context of a doctoral dissertation about organizational innovation and other management capabilities.

### PUBLIC INTEREST STATEMENT

This paper shows the rapid growth of an emergent research area: Organization Innovation. The bibliometric analysis, carried from 1996–2015, shows the more relevant contributions by region/country, institutions involved, topics and influential authors. The paper presents in which literature of the concept is structured during the analysed period: the concept of organizational innovation, the connection of organizational innovation with different management areas, such as financing, healthcare, organizational model or consumer satisfaction; and the third one organizational change.

2009; Moreira, et al., 2017), and it includes both technological and non-technological firm aspects (Armbruster et al., 2008). In this line, scholars have studied different aspects of innovation such as product innovation, process innovation, marketing innovation and organizational innovation.

#### A BRIEF OVERVIEW OF ORGANIZATIONAL INNOVATION CONCEPT:

Organizational innovation is a key point in the growth of the company and is considered a differentiation tool that creates competitive advantages (Ganter & Hecker, 2014; Moreira et al., 2017). However, organizational innovation remains a relatively under-explored field of research (Azar & Ciabuschi, 2017; Ganter & Hecker, 2014).

The main reason is that most of the studies on innovation have been focused on technological innovation, leaving aside the managerial implications related to its implementation. (Dougherty, 2017; Kim & Chung, 2017).

In the literature, organizational innovation is also found under other terms such as: managerial innovation or administrative innovation. Birkinshaw et al. (2008, p. 825) specifically define organizational innovation (management innovation) as “*the invention and implementation of a management practice, process, structure or technique that is new to the state of the art and is intended to further organizational goals*”. Other authors have directly linked the term organizational innovation to new processes or processes of change, “not-technological” (Sanidas, 2005). More recently, as some authors point out (e.g., Meroño-Cerdán & López-Nicolás, 2017), following Damanpour (2014), the concept is encompassed as “management innovations”—also called organizational, administrative, and managerial innovations-, such as those non-technological innovations that pertain to new organizational structures, administrative systems, and management practices. However, the literature recognizes a lack of consensus in the definition of organizational innovation (Camisón & Villar-López, 2014; Meroño-Cerdán & López-Nicolás, 2017).

Despite this situation, Damanpour and Aravind (2012, p. 423) argue that these terms complement each other and define the whole as managerial innovation. Managerial Innovation refers to the “new approaches to devise strategy and structure of tasks and units, modify the organization’s management processes and administrative systems, motivate and reward organizational members, and enable organizational adaptation and change”.

However, different types of organizational innovation with their different attributes and characteristics, sometimes make their effects divergent, but complementary to each other. This way, their effect on organizational performance is widely recognized. (Damanpour et al., 2009; Moreira et al., 2017). Currently, organizational innovation is a central topic in different areas such as public administration, marketing, management, and political science (Shoham et al., 2012; Meroño-Cerdán & López-Nicolás, 2017).

Organizational innovation is also a field of research in management (Zhu & Guan, 2013) which is associated with the adoption of new behaviours and ideas within the company (Daft, 1978; Damanpour, 1996).

The innovation process explains on exploring how the idea of innovation is originated, its development, its commercialization, its dissemination, its adoption and its implementation (Klein & Sorra, 1996; Rogers, 1995; Schroeder et al., 2000). The innovation process includes multiple patterns, states and phases that have been grouped into two large groups: the process of generation and the process of adoption of ideas (Damanpour & Aravind, 2012; Roberts, 1988; Schroeder et al., 2000).

This type of innovation is related to changes in strategies, systems and administrative procedures which are introduced into the firm to improve coordination between departments and

employee motivation (Damanpour & Aravind, 2012; Gallego et al., 2012; Mol & Birkinshaw, 2009). Organizational innovation allows the firm to develop knowledge and creativity and other firm capabilities related with learning (Basile & Faraci, 2015; Hargadon & Fanelli, 2003; Nieves, 2016; Vaccaro et al., 2012; Zhou & Hoever, 2014), a better understanding of business (Damanpour, 2014), the achievement of competitive advantages (Vaccaro et al., 2012), or the development of dynamics capabilities because it help the firm to detect, leverage and reconfigure business practices (Gebauer, 2011).

Therefore, organizational innovation aims at improving organizational performance and competitiveness (Bolton, 2008; Evangelista & Vezzani, 2012; McDermott & Prajogo, 2012) through the development of new practices, process and structures (Hamel, 2006; Hollen et al., 2013; Volberda et al., 2013).

However, organizational innovation is a topic that has scarcely been studied, primarily due to different interpretations of the term and the difficulties to elaborate measurements and indicators (Armbruster et al., 2008). There do exist certain literature reviews related to its conceptual aspect (Wolfe, 1994), organizational change (Hage, 1999), determinants (e.g., Meroño-Cerdán & López-Nicolás, 2017; Montalvan-Burbano et al., 2019), conceptions and processes (Damanpour & Aravind, 2012; Desouza et al., 2009), typologies and measurements (Damanpour, 2014), or that present a multi-dimensional framework (Crossan & Apaydin, 2010). These studies address the field of organizational innovation in general, but they fail to detail its evolution, main trends or intellectual structure.

The objective of the present work is to contribute to the field of Organizational Innovation through the measurement of the scientific production and its publishing patterns by means of bibliometric analysis. Such results make it possible to obtain an overall view of Organizational Innovation and its intellectual structure referred in various fields of study, as well as its main works of reference. We believe this article offers an important contribution to scholars and researchers interested in the subject as it provides a solid base for intellectual structure and new or scarcely studied fields, serving as a point of reference for future researchers and business people seeking to learn about the topic or obtain a general overview.

The current work is divided into four sections. The first presents the importance of Organizational Innovation in the business world. The second section explains the methodological structure of the bibliometric analysis and its mapping. The third details the qualitative and quantitative results of scientific production in Organizational Innovation during the period 1996–2015. The final section presents the conclusions obtained in the study.

## 2. Methodological approach

### 2.1. Bibliographic analysis

Bibliometrics is a scientific field that quantitatively studies scientific production, its measurements and the evaluation of its results (Archambault et al., 2009; Heersmink et al., 2011). This type of analysis is considered reliable and objective, allowing researchers to obtain additional information not presented by traditional literature reviews. Thus, it is not a substitute but rather a complement to academic research (Campbell et al., 2010; Keathley-Herring et al., 2016; Zupic & Čater, 2014).

Bibliometric analyses encompass two general approaches: performance analysis and bibliometric mapping of scientific production (Noyons et al., 1999). The former focuses on analyzing the production of scientific research based on documents, countries, institutions, journals and authors (Andrés, 2009). As for the latter, bibliometric mapping, or science mapping (Van Eck & Waltman, 2010) makes it possible to observe connections between the structures of different investigations conducted in the scientific knowledge system, the interrelationship of disciplines and research fields (Cobo et al., 2011; Wallin, 2012). This mapping process creates structures

organized into a network whose elements display homophiles formed by clusters. Inside each cluster, circular structures can be observed which are referred to as nodes (representing publications, words or authors) and connectors (relationship between nodes and their relationship strength) (Bohlin et al., 2014; Van Eck & Waltman, 2014). The size of the nodes is proportional to the number of occurrences of the document or studied term.

Two types of bibliometric maps were utilized which complement one another in the evaluation of organizational innovation. The first consists of extracting latent topics by means of a network of co-occurrences that uses terms appearing in titles, abstracts and keywords, which is called a bibliometric term map. The semantic map that is created enable to observe the conceptual structure of the research field (Van Eck & Waltman, 2010; Zupic & Čater, 2014). The second map is a co-citation network of authors which reveals the intellectual structure that has influenced the field of organizational innovation (Rossetto et al., 2018). The construction and graphic representation of the bibliometric maps was carried out using Vosviewer software developed at the University of Leiden (the Netherlands), which facilitates the construction of the bibliographic network and its graphic representation of distance in two dimensions, displaying the scientific structure and its development (Van Eck & Waltman, 2010). Vosviewer software was applied in this study to analyze different academic fields, among which management is included (Chandra, 2018; Rossetto et al., 2018).

#### 2.1.1. Dataset

Information was obtained from the Scopus database of literature reviewed in pairs, which contains primary documents; that is, the author is the researcher and their results have been published in scientific journals, books and conference reports. At present, it is considered the largest database of arbitrated scientific documentation (De Moya-anegón et al., 2007; De Nascimento & Rodrigues, 2015).

Bibliometric studies are carried out on a specific field of research, set of journals or documents (Wallin, 2012), therefore the present exploratory study shows a body of literature based on the concepts proposed in the literature regarding Organizational Innovation and that the authors use and interpret in their works. The extraction of data was performed with the Scopus database using the following descriptors: “Organizational Innovation”, “Organisational Innovation”, “Management Innovation”, “Managerial Innovation” and “Administrative Innovation”. These terms are used indifferently when referring to Organizational Innovation, according to the administrative changes or management changes in the company (Damanpour & Aravind, 2012). The term social innovation is excluded because it is related to the satisfaction of social needs and the policies implemented (social level) and not in administrative or management changes (organizational level) in the company (Damanpour, 2014).

The search was carried out on titles, abstracts, books and keywords from published documents (e.g., articles, conference articles, reviews, books and book chapters), as they are considered fundamental to the advancement of the topic of study (Sasseti et al., 2018). The study period is 1996–2015 in the fields of business, administration and accounting.

Data extraction was carried out in November 2016, obtaining a complete list of: a) Types of documents; b) Information of the authors (names and institution or organization to which they belong); c) Sources of Information (name of the magazine or publisher, year of publication); d) Title of the document; e) Keywords of the work and f) References. During this process, the program Excel 2013 was utilized to organize the data (Benckendorff & Zehrer, 2013). In addition, these data were subsequently normalized, which minimizes errors that may exist in the database extracted (Cobo et al., 2011). Thus, synonyms, singular and plural words were grouped together, as well as variations based on geographic location (Leung et al., 2017; Mesdaghinia et al., 2015).

### 3. Results and discussion

The study conducted a 20-year analysis (1996–2015) of scientific publications in the field of organizational innovation. The results are presented in this section through a bibliometric analysis with two approaches: First, an analysis of the performance of scientific production, depending on

the type of publications, contributions by country and institutions, journal performance and influential authors. Second, an analysis from the perspective of mapping science (bibliometric mapping) based on terms, authors co-citation and journals.

### 3.1. Performance analysis of scientific production

#### 3.1.1. Production of publications

A total of 1854 publications met the selection criteria. In general terms, 12 types of documents are obtained. Scientific articles (1242) represented 67% of the total, followed by conference articles (212), reviews (180), book chapters (81), notes (45), review conferences (28), books (24), press articles (17), editorials (13), short surveys (9), letters (2) and errata (1).

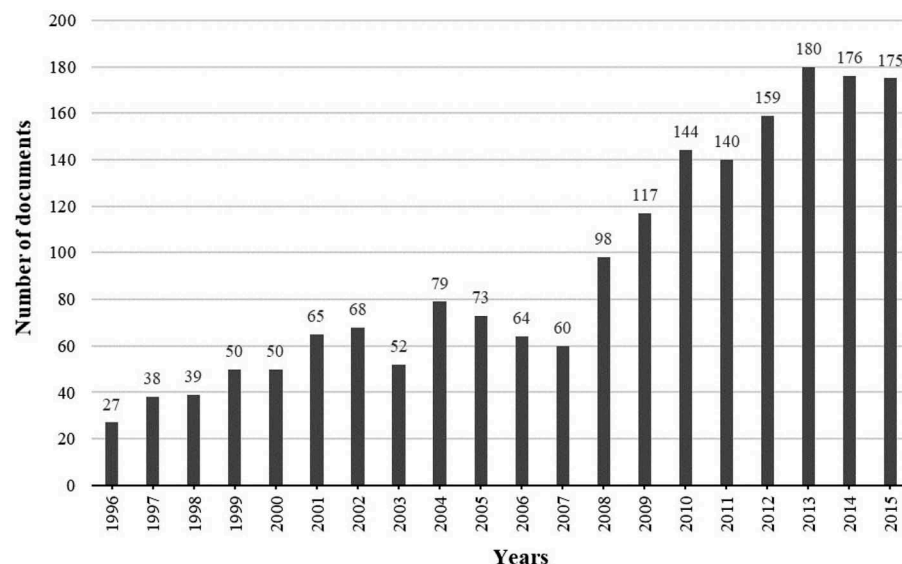
These works were published between 1996 and 2015, during which time the production of the scientific literature experienced a positive growth trend (Figure 1). Between 1996–2007, publications did not surpass an average of 80 works per year, but they gradually increased between 2008 and 2013, reaching a maximum of 180 publications in 2013, and finally finishing the study period with 175 documents in 2015. 97.08% of the scientific production is produced in English, while the rest is published in Spanish, Portuguese, Chinese, Russian, Italian, German, Czech and Japanese.

Figure 2 shows the two main contributors to the scientific production: scientific articles and conference articles. The former display a strong, positive growth trend, increasing from 22 to 127 documents in the period 1996–2013. The second contributor is conference articles, which are presentations or reports that respond to social concerns. This type of publication obtains effective and efficient information (Roosendaal et al., 2010) and quickly presents the findings, novelties and questions they generate. Thus, in 1996, two articles appeared at the Annual Meeting of the Decision Science Institute, the first by Paul (1996), “Organizational determinants of business process innovation initiation and implementation”, and the second by Wagner et al. (1996), “Integrative model of the impact of telecommunications on organizational innovation”. Conference articles make scant contributions between 1996 and 2004, slightly increasing to reach a maximum of 38 in 2010 and stabilizing as of 2012 with an average of 18 documents.

#### 3.1.2. Contribution by country

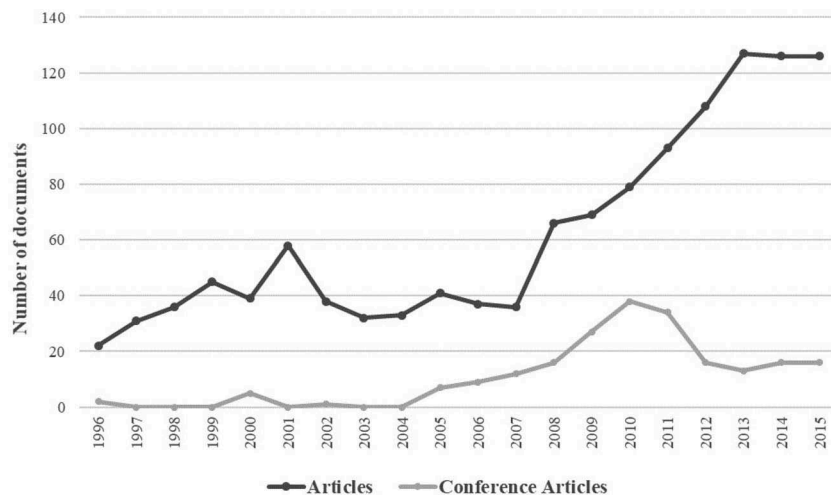
It is no coincidence that the most productive countries in the academic world of publications are also the most developed and industrialized, as can be observed in Figure 3. This chart displays the

**Figure 1. Information sources (1996–2015).**

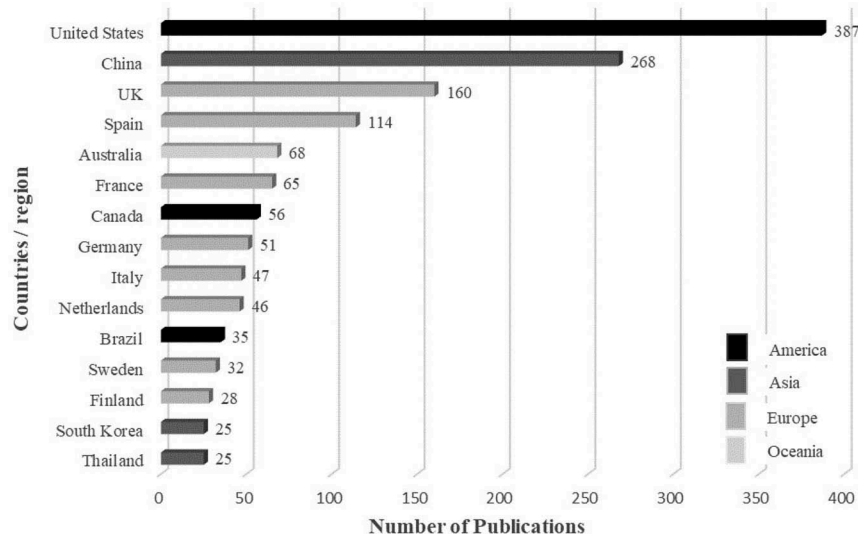




**Figure 2. Articles and Conference Articles.**



**Figure 3. Productivity by country and Region.**

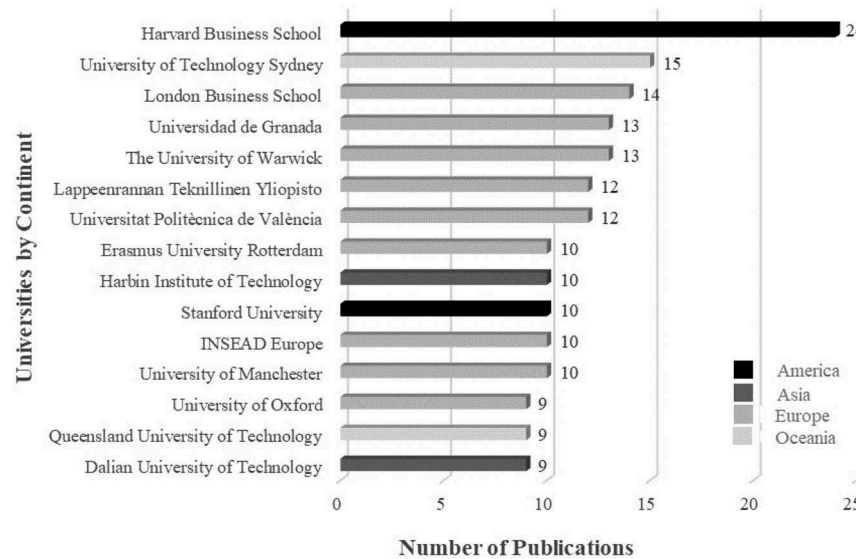


15 main contributing countries that represent 75.89% of scientific production. The United States is the leading country with a total of 387 scientific publications, contributing 20.87% of the information shared worldwide in the last two decades of research. China is second with regard to publications (268; 14.46%), followed by the United Kingdom (160; 8.63%), Spain (114; 6.15%), Australia (68; 3.67%), France (65; 3.51%), Canada (56; 3.02%), Germany (51; 2.75%), Italy (47; 2.54%) and the Netherlands (46; 2.48%). Overall, these countries are the ten most productive in research, accounting for 68% of scientific publications on organizational innovation. Brazil, Sweden, Finland, South Korea and Thailand occupy positions eleven to fifteen, respectively.

### 3.1.3. Institutional contribution

This aspect refers to the academic support provided to researchers. The most productive affiliations to institutions come from Europe (9), America (2), Asia (2) and Oceania (2), as can be seen in Figure 4, which represents the Institutions that register the most collaborations worldwide. In first position is Harvard Business School, at Harvard University, which leads in the field of business and administration studies in the QS World University Ranking of 2016. It contributes research on

**Figure 4. Institutional Contribution.**



Organizational Innovation in 24 publications, most notably The Ambidextrous Organization (O'Reilly & Tushman, 2004), with 625 citations. In second position is the University of Technology at Sydney, located between positions 51–100 in the QS World University Ranking 2016) in the field of business and administration studies, contributing 15 publications. In third position, the London School of Business with 14 publications, followed by the University of Granada (13) and University of Warwick (13), among others.

#### 3.1.4. Journal performance

This type of analysis allows knowing in a general way the journals in which the documents under study have been published, providing an overview to know if the concept of Organizational Innovation has been used in one or several academic fields. Table 1 displays the fifteen most important journals, which are organized according to their productivity. Additionally, the table also includes indicators, which indicate the prestige of scientific journals: Scimago Journal Rank (SJR), Impact per Publication (IPP) and Source Normalized impact per Paper (SNIP). The most notable journals are: Harvard Business Review, in first position, with an SJR of 0.401 and 231 publications; and, in second position, Frontiers of Health Services Management, published by the Foundation of the American College of Healthcare Executives, with 0.227 (SJR) and 48 publications. Based on the prestige of journals (SJR), the most important are Organization Science, Research Policy, Technovation, Journal of Business Research and Journal of Knowledge Management.

It is important to note that more than 1/3 of the papers referred on Table 1, were published in Harvard Business Review and also in several healthcare journals. In addition, given that most of the American contributions appeared on this journal, there might be some bias on the geographical distribution. In any case, it is certain that the use of “organizational innovation” has been heavily influenced by these journals in previous years and that American research institutions played a key role in expanding the concept of “organizational innovation”.

#### 3.1.5. Influential authors

The fifteen authors with more contributions on organizational innovation are shown in Table 2, along with other indicators that provide greater detail about the authors, such as their institution, country and publications. H-Index is also included as the measure of individual scientific production and impact on the academic community (Hirsch, 2005), thus reflecting the importance of the investigations conducted. *It is important to note that this table shows the authors with the highest*

**Table 1. The fifteen most important publication sources**

Journal Source	Number of Publications	Scimago Journal Rank (SJR)	Impact per Publication (IPP)	Source Normalized impact per Paper (SNIP)
Harvard Business Review	231	0.401	4,000	13,001
Frontiers of Health Services Management	48	0.227	-	-
Health Care Management Review	40	0.806	1,418	1,009
Healthcare Financial Management Journal	34	0.118	-	-
Clinical Leadership and Management Review	26	-	-	-
European Journal of Innovation Management	26	0.596	1,466	1,671
Inter. Journal of Technology Management	24	0.428	0.880	0.597
Journal of Technology Management and Innovation	20	0.206	0.221	0.285
Fortune	18	0.101	-	-
Technovation	18	1,794	3,074	2,169
Inter. Journal of Human Resource Management	16	0.705	1287	0.923
Research Policy	16	3,536	4,695	3,126
Journal of Business Research	15	1,682	2,644	1,889
Int. Journal of Innovation and Learning	14	0.252	0.599	0.549
Evaluation and Program Planning	13	0.470	1,119	0.914
Industrial Management and Data Systems	13	0.630	1,624	1,088
Journal of Knowledge Management	13	1,12	2,356	1,975
Management Decision	13	0.909	1,825	1,39
Organization Science	13	7,037	3,932	2,26
Total Quality Management and Business Excellence	13	0.662	1,512	1,269

*number of contributions in the organizational innovation. However, if we focus our attention on their h-index and their total production of papers, it can be concluded as in many cases they are young authors whose scientific trajectory is in its growth stage. This can also lead us to interpret that the field of organizational innovation is being explored strongly in recent years (in many cases by authors with incipient research production). Therefore, it is expected that production can increased significantly in the next years*

The country with the highest number of authors is the United Kingdom: Birkinshaw, J., Hamel, G and McCabe, D. The first two belong to the London Business School, an institution which, according to the Academic Ranking of World Universities (ARWU), is 43<sup>rd</sup> in the world in the field of economics and business, and author McCabe, D. is from the University of Lancaster, which is ranked among positions 151–200 on the same list. France boasts three authors: Kim, W.C. and Mauborgne, R. from INSEAD Europe, which offers one of the most widely-acclaimed MBAs in the world according to the 2016 Ranking of the Financial Times, and author McCabe, D. from the

**Table 2. The fifteen most important authors**

Authors	Institution	Country	Number of Global Publications	Number of Local Publications	H-Index
García-Morales, V.J.	University of Granada	Spain	43	10	16
Birkinshaw, J.	London Business School	United Kingdom	127	9	41
Damanpour, F.	Rutgers, The State Univ. of New Jersey	United States	40	8	20
Hamel, G.	London Business School	United Kingdom	23	8	15
McCabe, D.	University of Lancaster	United Kingdom	51	6	16
Mothe, C.	Universite de Savoie	France	37	6	8
Fongsuwan, W.	King Mongkuts Univ. of Technology	Thailand	43	5	1
Ganter, A.	University Seeburg Castle	Austria	6	5	4
Hecker, A.	University Seeburg Castle	Austria	12	5	5
Kim, W.C.	INSEAD Europe	France	20	5	13
Lin, L.H.	National Kaohsiung University	China	29	5	7
Mauborgne, R.	INSEAD Europe	France	23	5	15
Saunila, M.	Lappeenranta Teknillinen Yliopisto	Finland	19	5	4
Volberda, H.W.	Erasmus University Rotterdam	Netherlands	95	5	31
Brown, J.S.	Deloitte Center for the Edge	United States	54	4	20

University of Savoie. The United States has two institutions: Rutgers, The State University of New Jersey (ranking 51–75) and the Deloitte Center for the Edge, located in Silicon Valley; Deloitte Touche Tohmatsu Limited is a private company devoted to research, business and technology. The authors representing these institutions, in order, are Damanpour, F. and Brown, J.S.

Other authors who are not native English speakers Ganter A. and Hecker A. from the University of Seeburg Castle. (Austria); Fongsuwan, W. from King Mongkuts University of Technology (Thailand); Lin, L.H. from National Kaohsiung University (China); Saunila, M. from Lappeenranta Teknillinen Yliopisto (Finland) and Volberda, H.W from Erasmus University Rotterdam (Netherlands). The author with the most publications on the topic of Organizational Innovation, is García-Morales, V.J. from the University of Granada (Spain).

*It is a bit surprising that among leading authors there no representatives from China (the second country with most publications) and only two Americans authors. This situation is indicating that authors with highest ranking do not reflect productivity of countries. Additionally, we can infer that the production of countries with more contributions is more widespread while in countries with less contribution, articles focused on “organization innovation” are concentrated in few authors.*

#### 4. Bibliometric mapping

In this section, the cognitive structure and its evolution in the field studied regarding organizational innovation is shown. For this purpose, the generated science maps are exposed:

##### 4.1. Bibliometric mapping of terms

During the construction of this web map, terms extracted from the database were taken from a sequence of nouns and adjectives. On the map, the distances of the terms indicate the amount of co-occurrences of the terms. Terms found in titles, abstracts and keywords are used as the units of analysis, in keeping with the procedure proposed by Van Eck and Waltman (2010, 2014). Thus, at least 20 occurrences were established for the study period, with 109 terms fulfilling the requirement. The bibliometric term map is displayed in Figure 5, which contains three clusters that group the main topics analysed in this field of research. Descriptions of these clusters are provided in the following paragraphs.

##### 4.1.1. Cluster 1—Organizational innovation

It is the first research front according to its weight and number of keywords that amount to 47. It is located on the right side of Figure 6, showing a structure formed by 2 nuclei “Organizational Innovation” and “Innovation”. Other terms (40) are located around the nuclei. The main words that make up the cluster and its occurrence are Organizational Innovation, innovation, industry, management and knowledge management.

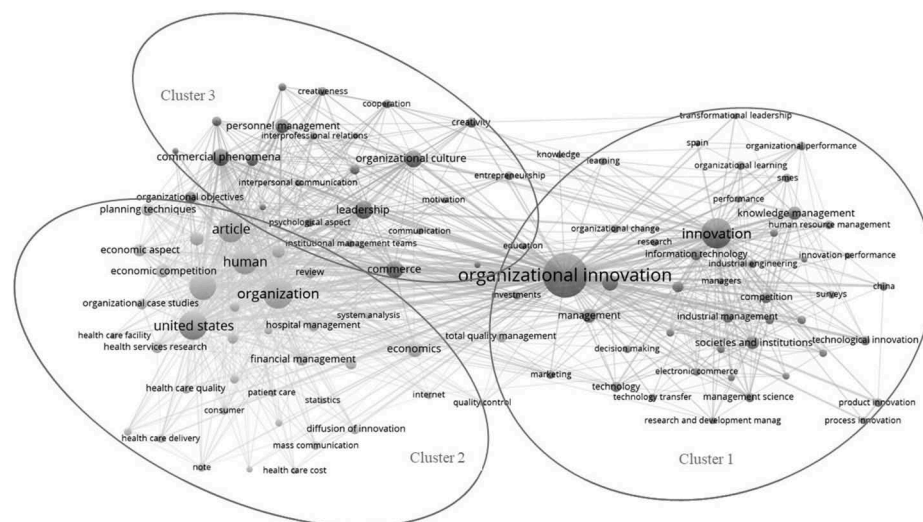
##### 4.1.2. Cluster 2—Organization and management

This cluster is located on the lower left-hand side of Figure 5. In terms of spatial distribution, it can be observed that the nucleus is comprised of 7 items and 31 elements in its periphery. The words comprising this nucleus: are Organization, United States, Article, Organization and Management, Human, Efficiency, organizational and methodology. The terms in the cluster reflect lines of research in Management (Financing, Healthcare, overall quality), organizational efficiency, organizational models and consumer satisfaction.

##### 4.1.3. Cluster 3—Organizational change

Located in the upper right-hand side of Figure 5, this cluster is the smallest with 24 items. The main words in this cluster are Leadership, Commercial Phenomena, Commerce, Organizational Culture, and Personnel Management. In terms of topics, it is closer to Cluster 2.

**Figure 5. Bibliometric Map of Terms.**



#### 4.2. Authors co-citation mapping

This map makes it possible to analyse the intellectual structure of the discipline, in which the unit of analysis is the authors who appear in the references of the documents examined (Zupic & Čater, 2014). All publications from the study period were utilized, except those not containing references. Using a similarity measurement for the co-occurrence data, known as association strength, and fractional counting method (Van Eck & Waltman, 2010), it was determined that the minimum number of citations per author was 40, thus fulfilling this requirement 286. The bibliometric map (Figure 6) contains six clusters, which are examined in greater detail below:

##### 4.2.1. Cluster 1—Generation of capacities

Comprised of 81 authors, most of whom are linked to the topics of competitive advantage, strategic administration, innovation capacities and dynamic capacities of companies; the latter two give the cluster its name. The main authors are: Barney, J.; Cooper, R.; Calantone R.; Zahra, S.A.; Senge, P. This cluster is located at the bottom of Figure 6.

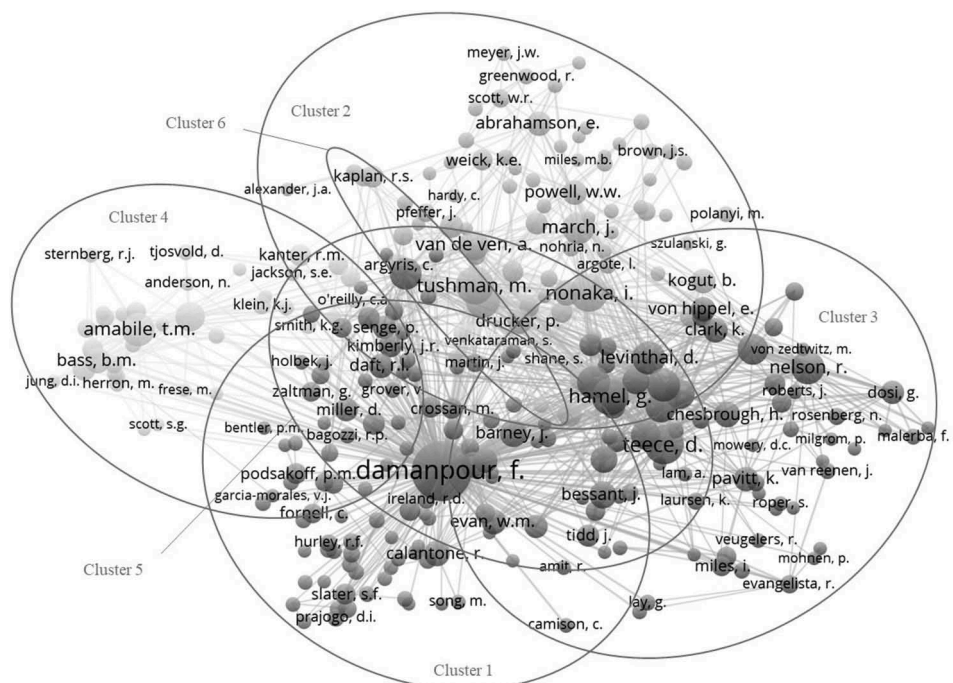
##### 4.2.2. Cluster 2—Organizational learning

Presented in green and comprised of 72 authors, the most notable authors in this cluster are: Nonaka, I.; Tushman, M.; Eisenhardt, K.; March, J. and Van de Ven, A. Most of the topics in the cluster address knowledge creation, dynamic capacities, organizational learning and innovation management. It can be found in the upper portion of Figure 6.

##### 4.2.3. Cluster 3—Organizational change

Related to topics on dynamic capacities, competitive advantages, economic change theory, innovation and organizational innovation. The publications in this cluster were produced by 63 authors, most notable of whom are Teece, D.; Porter, M.; Nelson, R.; Levinthal, D.; and Cohen, W. Cluster 3 is located in the lower right-hand side of Figure 6.

**Figure 6. Authors Co-Citation Mapping.**



#### 4.2.4. Cluster 4—Leadership

Located on the extreme left of Figure 6, this cluster is removed from the main structure as its contributions are not directly related to the study topic. 39 authors are included in this cluster, the most cited of which are Amabile, T.M.; West, M.A.; Hitt, M.A.; Bass, B.M.; Avolio, B.J.

#### 4.2.5. Cluster 5—Innovation and organizational theories

Located in the center of Figure 6, this cluster can be linked to other clusters: Administration and Capacities, Organizational Learning and Organizational Change. The overlapping of clusters demonstrates the existence of sub-topics which are in development. Cluster 5 contains 27 authors, most notably Damanpour, F.; Hamel, G.; Birkinshaw, J.; Rogers, E. and Mol, M. on topics related to innovation: both open and organizational innovation, and in general terms. It is also worth noting that Damanpour, F. (Rutgers, The State University of New Jersey) is the center (Figure 6) because of volume of citation.

#### 4.2.6. Cluster 6

This is a small and irrelevant cluster in relation to the study topic.

Additionally, overlapping can be observed among clusters, suggesting the existence of new fields of study. There is a strong interrelationship between Generation of Capacities—Innovation and Organizational Theories; a moderate interrelationship between Generation of Capacities—Organizational Change; a slight interrelationship between Organizational Learning—Organizational Change and Innovation and Business Theories and Organizational Learning.

### 5. Conclusions

This article presents a review of the academic research performed on Organizational Innovation during the period 1996–2015. Qualitative and quantitative methods referred to as bibliometric analysis were utilized for measuring scientific production, which was compiled from academic literature published in the Scopus database. The following conclusions were obtained:

Research on Organizational Innovation has rapidly grown over the last two decades, as can be seen in terms of production (1854 documents). This rise clearly demonstrates the interest of scholars in the fields of business, administration and accounting. Developed countries like the United States, China, the United Kingdom, Spain, Australia, France, Canada, Germany, Italy and the Netherlands are responsible for 68% of the scientific publications in this field worldwide. The United States contributes 20.87% of the scientific production on Organizational Innovation. The most productive Institution in terms of publications is Harvard Business School, with 231 publications.

The most important indexed journals according to their prestige, based on the Scimago Journal Rank (SJR) are Organization Science, Research Policy, Technovation, Journal of Business Research and Journal of Knowledge Management. The leading authors in the field (according to volume of publications) are: García Morales V. J., from the University of Granada (Spain); Birkinshaw J., from London Business School; Damanpour F. from Rutgers, The State University of New Jersey (United States); Hamel G. and McCabe, D., from the United Kingdom, specifically the London Business School and University of Lancaster.

Bibliometric analysis revealed existing connections between investigations on Organizational Innovation, producing the following conclusions:

Firstly, bibliometric mapping identified topics related to organizational innovation, organization, administration, and organizational change, which constitute the pillars that, support the field of study itself. The presence of these clearly distinguished subjects suggests that the topic will develop similarly in the future. Furthermore, the proximity of the organization and administration clusters to organizational change suggests development that combines these subjects. For

example, strong relationships are observed between the terms human—organizational culture and between organization—leadership, which represent topics well worth exploring.

Secondly, a variety of clusters are displayed in the co-citation mapping of authors, demonstrating that organizational innovation is related to business and management: Generation of Capacities, Organizational Learning, Organizational Change, Leadership, Innovation and Organizational Theories. Four of the clusters are interrelated as they relate different disciplines such as the generation of capacities, dynamic capacities and organizational learning to Organizational Innovation. This overlapping indicates active development and expansion of these sub-topics, revealing an opportunity to conduct both theoretical and empirical studies.

Finally, the findings reveal an extensive generation of knowledge between the generation of capacities, learning and organizational change and innovation and company theories. This increase in knowledge is an indication of continuous development, which should be observed by researchers, and its applicability in related fields.

An obvious limitation of this work is in how the “organizational innovation” is operationalized. According with bibliometric papers (Wallin, 2012), it is clear that the method does not capture all papers addressing “organizational innovation”. The paper also displays limitations with regard to the time period of the data, the selection of keywords identifying the field of study and the database used. As a possible alternative, subsequent studies might opt to identify clusters differently. Nevertheless, the present work demonstrates the use of a reliable database, the selection of words based on theory and the analysis of a recent period of evolution, thereby making the study a point of reference in the field of organizational innovation.

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