

Academic Production Patterns in Public Administration: An Analysis Based on Scopus

¹Jenny-Paola Lis-Gutierrez, ¹Mercedes Gaitan-Angulo, ¹Paula Viviana Robayo,
¹Doris Aguilera-Hernandez and ²Amelec Vilorio
¹Fundacion Universitaria Konrad Lorenz, Bogota, Colombia
²Universidad de la Costa, Barranquilla, Colombia

Abstract: This study analyzes the academic production on public administration for the period between January, 1930 and June, 2016 with emphasis on production from 2010 to June 2016. For this purpose descriptive bibliometric indicators will be used: volume of production, typology of documents, number of citations, institutional affiliation of the researchers, sources, main journals, countries of origin of the researchers and the H, G, R, i10 and A indices from the records of the Scopus bibliographic index.

Key words: Bibliometry, scientometrics, economics, public administration, H index, R index, index A, scopus

INTRODUCTION

The analysis of trends in academic production in a specific area of knowledge enables researchers to identify the evolution of production, the impact and geographic distribution of scientific production.

According to Rodriguez (2015) bibliometrics has three main functions: descriptive through quantitative information that allows comparative analysis of production evaluative which allows the valuation of the investigation in a scientific field in determined periods; monitoring and diagnosis (Gutierrez and Olivera, 2016).

However, according to (Gutierrez and Olivera, 2016a, b), recent trends in bibliometrics can be classified as: analysis and evaluation of specific areas (Costa, 2015; Fuentes *et al.*, 2014; Hidalgo *et al.*, 2014; Armfield *et al.*, 2014); Analysis of the behavior of the metrics for the researcher (Junior *et al.*, 2016; Abramo *et al.*, 2014; Bouyssou and Marchant, 2014); improvement of techniques and analysis used in bibliometrics (Diaz and Sanchez, 2012; Munoz and Delgado, 2016; Diaz-Faes, 2015; Brzezinski, 2014); identification of gaps in the literature (Brones *et al.*, 2014; Arango and Alvarado, 2016); cross-sectional studies, applied to journals Andrade *et al.*, 2016; Laiglesia *et al.*, 2014; Koc and Boz, 2014) and evaluation of production in a specific country (Rosario *et al.*, 2014).

On the other hand, it should be mentioned that bibliometrics also relies on indicators which correspond to statistical data associated with the

different characteristics of scientific publications, their dissemination and the transmission of the knowledge created in the research (Filippo and Fernandez, 2002). In this study, we propose a descriptive and citational bibliometric analysis of the production in public administration, based on information from the SCOPUS indexing and summary service between January 1930 and June 2016. The indicators that will be considered in this work correspond to: volume and the H, G, R, i10 and A indices (Hirsch, 2005) as well as the number of citations, institutional affiliation of researcher, sources, (Egghe, 2006).

MATERIALS AND METHODS

The first step to start the bibliometrics exercise was to select the bibliographic index to be used. Scopus was chosen and not ISI, since:

- The coverage of Latin American countries is higher in the first index
- According to the academic database assessment tool, 92.41% of ISI indexed journals were also indexed in scopus
- The microdata available from Scopus are wider than those available for ISI

Second, the following algorithm was established as a search criterion in Scopus: TITLE-ABS-KEY ("public administration") OR TITLE-ABS-KEY ("administration publique") OR TITLE- OR TITLE-ABS-KEY ("public

administration”). This means that the search yields documents that include in the title, abstract or keywords the term “public administration” in 4 languages: Spanish, french, english and portuguese. Although, records exist since 1908 in Scopus, a contrast between the information will be presented in two periods: 1930 to June, 2016, 2010 to June, 2016, based on the indicators presented below.

RESULTS AND DISCUSSION

Basic indicators: To begin, it is necessary to make a revision of the volume of scientific production that is available in scopus. The number of documents indexed in Scopus between 1930 and June, 2016 amounted to 11,875 documents and between 2010 and 2016 6,454 papers were identified. The largest number of documents were

published in 2015 (1,120) and the highest growth rate was between 2004 and 2005 (49% from 233 jobs to 347). As shown in Graph 2, the increasing trend of production began in 1995 when the limit of 100 publications was exceeded.

According to Table 1, the leading journals in public administration publication, regardless of the period are public administration review, australian journal of public administration and public administration which concentrated 15.2% of publications between 1930 and June 2016 and 16.02% between 2010 and June 2016. In both periods, the 20 journals with the most publications concentrated around 37% of the total academic production of the period in Scopus.

Table 2 presents the main indicators of the journals with the highest number of documents on public administration. There is evidence of a strong geographic

Table 1: Main magazines that published articles on public administration

Names of the journal	1930, June of 2016	Names of journal	2010, June of 2016
Public Administration Review	998	Public administration review	560
Australian Journal of Public Administration	449	Australian journal of public administration	255
Public Administration	359	Public administration	219
International Review of Administrative Sciences	317	Canadian public administration	178
Journal of Public Administration Research and Theory	299	Journal of public administration research and theory	160
Canadian Public Administration	254	International review of public administration	157
International Journal of Public Administration	249	International journal of public administration	100
International Review of Public Administration	216	Lecture notes in computer science including subseries lecture notes in artificial intelligence and lecture notes in bioinformatics	95
Lecture notes in computer science including subseries lecture notes in artificial intelligence and lecture notes in bioinformatics	203	International review of administrative sciences	94
Administration and Society	198	Administration and society	80
American Review of Public Administration	187	Public policy and administration	75
Public Administration and Development	134	Revista de administracao publica	69
International Journal of Public Sector Management	115	Transylvanian review of administrative sciences	69
Transylvanian Review of Administrative Sciences	91	Public administration and development	59
Public Policy and Administration	90	American review of public administration	57
Revista De Administracao Publica	83	Mediterranean journal of social sciences	42
Revue Francaise D Administration Publique	65	Revue francaise D administration publique	42
Administration Society	63	International journal of public sector management	36
Public Management Review	54	Reforma Y democracia	36
Review of Public Personnel Administration	54	Public management review	34

Own elaboration from the data of Scopus

Table 2: Main indicators of journals with the highest number of documents published between 1930 and June 2016

Names of journal	Quartile in Scopus to 2015	H to 2015	Countries	Editors	Percentage of international collaboration in 2015
Public Administration Review	Q1	88	United Kingdom	Wiley-blackwell	6.75
Australian Journal of Public Administration	Q3	29	Australia	Blackwell publishing Inc	8.82
Public Administration	Q1	63	United Kingdom	Wiley-blackwell	18.68
International Review of Administrative Sciences	Q1	32	United Kingdom	SAGE publications	21.43
Journal of Public Administration Research and Theory	Q1	73	United Kingdom	Oxford University Press	22.92
Canadian Public Administration	Q2	16	Canada	Institute of Public Administration of Canada	3.57
International Journal of Public Administration	Q2	19	US	Marcel Dekker Inc.	18.85
International Review of Public Administration	Q3	5	South Korea	Korean association for public administration	28.00
Lecture notes in computer science including subseries lecture notes in artificial intelligence and lecture notes in bioinformatics	Q3	177	Germany	Springer verlag	23.95
Administration and society	Q1	39	US	SAGE publications	9.80

Own elaboration from the data of Scopus and Scimago Group

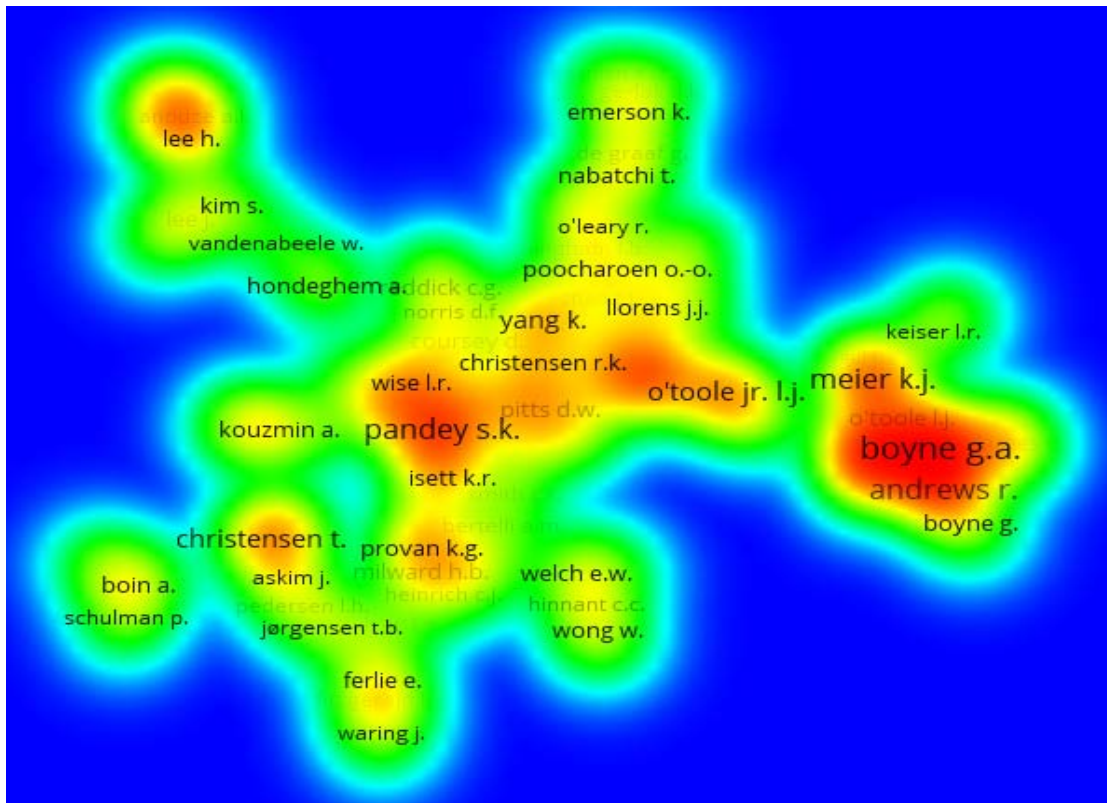


Fig. 1: Density of co-authorship of the 2,000 most cited documents (1930, June 2016). Own elaboration from Scopus data using VOSviewer

concentration of journals in the United Kingdom and the levels of international collaboration are >25% with an average of 16.28%. It is possible to mention the great dispersion in the index H of the magazines.

However, the total number of sources between 2010 and June, 2016 amounted to 2,429 but those that have published between one and two documents (2,026) accounted for 29.02% of total published output. Seen from another perspective the first 10 journals centralize the 46.17% of the academic production (2,980 articles).

It is worth mentioning that among the 2,000 most cited Articles 1,955 were written in English, only 10 in Spanish and the rest in French, German, Italian, Lithuanian and Portuguese. What implies that in this issue, the probability of publishing the document in English increases if it is written in English.

However, Fig. 1 shows the density of co-authorship of the 2,000 most cited articles between 1930 and June 2016. VOSviewer identified 17 different clusters (i.e., researchers working together) being the researchers with the highest number of co-authors: BOYNE GA,

WALKER RM, MEIER KJ, PANDEY SK and REWS R and O'TOOLE JR. L.J. with 15, 14, 10, 9, 9 and 8, co-authors, respectively.

Most articles between 1930 and June 2016 and in the subperiod from 2010 to June 2016 were produced by the same universities: The University of Georgia, Australian National University, Erasmus University Rotterdam, Indiana University and City University of Hong Kong. In the subperiod indicated, some institutions gained relevance such as: Universitatea Babes-Bolyai din Cluj-Napoca with 42 papers, Aarhus Universitet with 38 documents and University of Sao Paulo-USP, Goteborgs Universitet, University of Granada, University of Ljubljana with 35 texts each.

With regard to geographical concentration, it is evident that most authors have an institutional affiliation of the United States which contrasts with the results of the journals in which public administration research is disseminated, since in that If the geographical concentration was associated with the United Kingdom. The results can be seen in Fig. 2, identifying that the country with the largest number of researcher who wrote in the period on Public Administration was United States followed by Italy, United Kingdom and Spain. Colombia

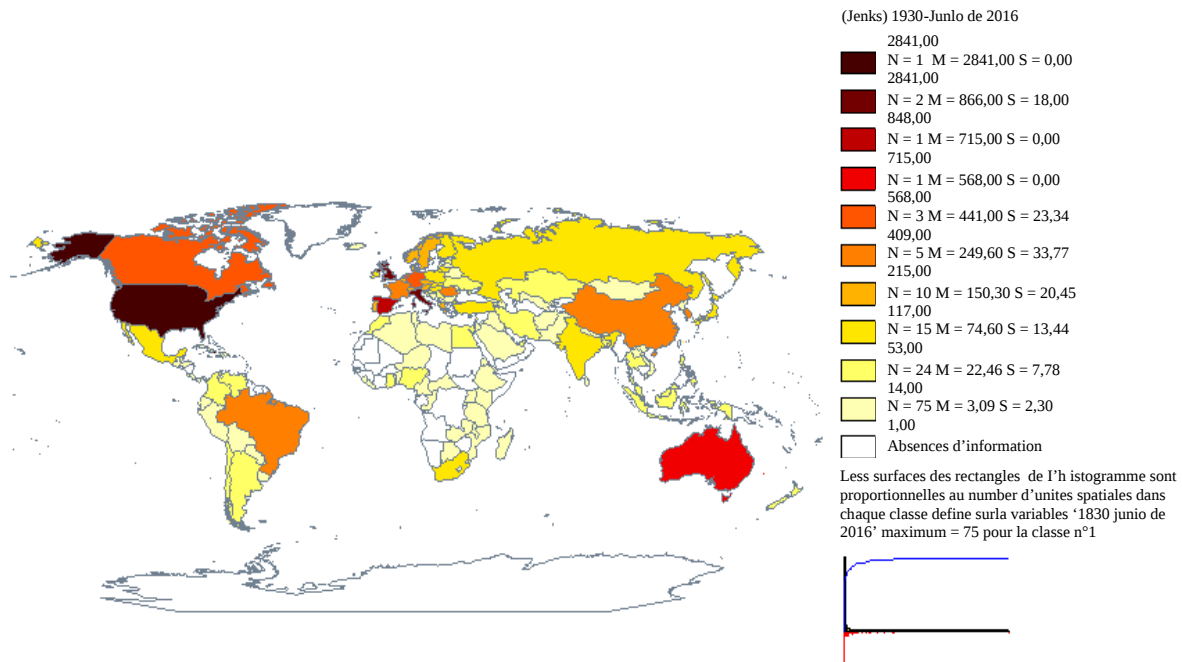


Fig. 2: Main countries of the institutional affiliation of the authors 1930, June 2016. Own elaboration from Scopus, using Philcato

is in position 52, among 143 countries with 20 articles published in the period. With regard to citations, it should be mentioned that the first article quoted on public administration was “Some conditions of social efficiency in relation to local public administration” by Newsholmet, A., published in 1908. Between 1930 and June, 2016, Cited had received between 8 and 1,030 citations.

The most cited work received in the aforementioned period was “The New Public Management in the 1980s: variations on a Theme”, published in 1995 in accounting, organizations and society. 437 (21.85%) of the most cited articles were published in public administration review and 169 (8.45%) in public administration. The total number of citations received by the public administration review was 14,931 and the second most cited citation was public administration review with 7,180 citations, followed by Public Administration with 5,637 citations.

However, concentrating on the work from 2010 to June 2016 of the 1,313 works produced in the mentioned period, only 2,947 documents had been cited. In other words, 54.34% of the, documents produced between January 2010 and June 2016 had no impact on subsequent academic production. On the other hand, the total number of citations received amounted to 19,454 that is an average of 3 citations per document and 6.6 citations per document actually cited. It is worth mentioning that 2,422 papers cited received between 1 and 9 appointments, concentrating 82.18% of the works and

38.07% of the appointments received (7,408). This contrasts with the fact that 5 documents concentrate 3.84% of the appointments.

Index H, G, R, i10 y A: Although, traditionally, the H index is calculated, other indicators such as G, i10, R and A have recently been used (Diaz-Faes, 2015; Jorge and Espino, 2008). The analysis of citations made previously allows to calculate each of them: the H index (Hirsch, 2005) of public administration production between 1930 and June, 2016 is 27 which means that 27 articles have at least received 27 citations during the period. Considering the subperiod 2010 to June 2016, the H index is 17.

For its part, the index G¹ (For the calculation of the G Index, the articles are listed in descending order according to the number of citations received by each of them. Subsequently, a second column calculates the value of the square of the digit that reflects the position of the item in the list (g₂). And in a third is reflected the number of citations accumulated (H). The index g is determined by the position of the last article in which the square value of that position is less than the number of accumulated citations (Pereira *et al.*, 2009). Egghe (2006) corresponded to 152 for the whole period and for subperiod 61. The advantage of this index is to consider the number of citations received by the most cited articles. The index R (Egghe, 2006) corresponds to

the square root of the sum of citations received by the articles that form part of the H index. For the whole period it was 144.89 and for the subperiod 105.09. The i10 index corresponds to the number of publications that have been cited at least 10 times. For the full period it was 164 that is 8% of the 2000 most cited works and 1.4% of the total works. In the subperiod this index was reduced to 62 that is <1% of the total of documents. Finally, index A (Egghe, 2006) corresponds to the sum of citations received by the articles that form part of index H divided by index H. For the total of the period was 749.3 and for the subperiod 649.7.

Considering the results of the previous indices it can be deduced that there are significant differences in the behavior for the two periods. The H index for the whole period is 37% higher than the H index for the subperiod 2010-June 2016, the same is true for the i10 which for the first case is 60% higher.

CONCLUSION

A look at the basic indicators of publications shows that for the period under study most of the works in public administration were published as articles that on average between 1930 and June 2016 the number of works annually published is 136, No. However, since 2002, the number of works published in the area has exceeded 200.

With regard to sources, the major circulation journals on public administration have not undergone significant changes when comparing the last 87 years compared to the last 7 years that is no other significant sources of disclosure of production have been included. A strong geographic concentration of journals in the United Kingdom is also evident, although the predominant institutional affiliation comes from the United States which would also be associated with the English language being published in the most cited articles. Likewise, it was possible to identify that the levels of international collaboration are >25% with an average of 16.28%. On the other hand with regard to the analysis of citations, it is observed that between 1930 and June 2016, the 2,000 articles most cited had received between 8 and 1,030 citations but concentrating on the works from 2010 to June, 2016. That 54.34% of the documents produced had no impact on subsequent academic production.

REFERENCES

Abramo, G., T. Cicero and C.A. D'Angelo, 2014. Are the authors of highly cited articles also the most productive ones?. *J. Inf.*, 8: 89-97.

- Andrade, L.F.S., D.A.L. Paiva, D.C.V. Alcantara and M.J. Brito, 2016. [Unveiling the field of strategy as practice and its relationships (In Portuguese)]. *Iberoam. J. Strategic Manage.*, Vol. 15,
- Arango, C.R. and U.R. Alvarado, 2016. [Metrics of the literature on the indigenous of Mexico (In Portuguese)]. *Encounters Bibli Electron. J. Librarianship Inf. Sci.*, 21: 104-120.
- Armfield, N.R., S. Edirippulige, L.J. Caffery, N.K. Bradford and J.W. Grey *et al.*, 2014. Telemedicine-a bibliometric and content analysis of 17,932 publication records. *Intl. J. Med. Inf.*, 83: 715-725.
- Bouyssou, D. and T. Marchant, 2014. An axiomatic approach to bibliometric rankings and indices. *J. Inf.*, 8: 449-477.
- Brones, F., D.M.M. Carvalho and D.S.E. Zancul, 2014. Ecodesign in project management: A missing link for the integration of sustainability in product development?. *J. Clean. Prod.*, 80: 106-118.
- Brzezinski, M., 2014. Power laws in citation distributions: Evidence from scopus. Master Thesis, University of Warsaw, Warsaw, Poland.
- Costa, P.R.D., 2015. [Innovation in teaching and learning in finance: Analysis of the literature between 2005 and 2015]. Master Thesis, Fundacao Escola de Comercio Alvares Penteado, Sao Paulo, Brazil.
- Diaz, I.A.L. and R.Y. Sanchez, 2012. [Analysis of the H, G and R indices in the Cuban agricultural sector through scopus, 2005-2009 (In Spanish)]. *Ann. Doc.*, 15: 1-17.
- Diaz-Faes, A.A., 2015. [New methodological approaches to the study of collaboration in science through scientific publications (In Spanish)]. Ph.D Thesis, University of Salamanca, Salamanca, Spain.
- Egghe, L., 2006. Theory and practise of the g-index. *Scientometrics*, 69: 131-152.
- Filippo, D.F.M.T. and M.T. Fernandez, 2002. Bibliometrics: importance of bibliometric indicators. Center for Studies on Science, Development and Higher Education (REDES), Argentina, South America. https://translate.google.com.pk/translate?hl=en&sl=es&u=http://www.ricyt.org/manuales/doc_view/113-bibliometria-importancia-de-los-indicadores-bibliometrico.
- Fuentes, J.M., R.J. Diaz, M.A.J. Gallut, M.J.J. Paya and D.M.E. Bano-Aledo, 2014. [Characterization of the intellectual base of physiotherapy through analysis of cocitation of documents (In Spanish)]. *Physiother.*, 36: 167-176.
- Gutierrez, J.P.L. and B.J.P. Olivera, 2016. [Patterns of Colombian academic production in economics and administration (1974-June 2014): A bibliometric analysis based on scopus (In Spanish)]. *Manage. Dev. Mag.*, 46: 47-54.

- Gutierrez, J.P.L. and B.J.P. Olivera, 2016. [The participation of women in Colombian economics and administration publications indexed in scopus (1974-June 2014) (In Spanish)]. *Res. Reflection J.*, 2: 30-40.
- Hidalgo, J.L.T., B.J. Gallisa, O.D. Beltran and B.J.A. Saameno, 2014. [Bibliometric map of research carried out in primary care in Spain during the period 2008-2012 (In Spanish)]. *Physiother.*, 36: 167-176.
- Hirsch, J.E., 2005. An index to quantify an individual's scientific research output. *Proc. Natl. Acad. Sci. USA.*, 102: 16569-16572.
- Jorge, R.A. and C.R. Espino, 2008. [The H, G and R indices: Their use to identify leading authors in the area of communication during the period 2001-2006 (In Spanish)]. *Acimed*, 17: 1-9.
- Junior, C.M., D.S.M.T. Saraiva, D.P.I.R. Santos and A. Palmisano, 2016. [The laws of Bibliometrics in different scientific databases (In Portuguese)]. *J. Manage. Sci.*, 18: 111-123.
- Koc, E. and H. Boz, 2014. Triangulation in tourism research: A bibliometric study of top three tourism journals. *Tourism Manage. Perspect.*, 12: 9-14.
- Laiglesia, M.A.V.D., F. Alfonso, O. Miro, J. Casademont and B.P. Santos *et al.*, 2014. [Characteristics and longevity of electronic citations in four leading biomedical journals in Spain (In Spanish)]. *Spanish J. Cardiol.*, 67: 837-843.
- Munoz, O.E. and H.Y. Delgado, 2016. [Detection of communities from co-authorship networks in RDF graphs (In Spanish)]. *Cuban J. Inf. Health Sci.*, 27: 90-99.
- Pereiraa, B.G., G.V.P. Boteb and M.F. Anegonc, 2009. The SJR indicator: A new indicator of journals scientific prestige. MSc Thesis, University of Extremadura, Badajoz, Spain.
- Rodriguez, M.C.L., 2015. [Bibliometric analysis of the scientific production in management and accounting 1929-July 2014]. Master Thesis, Central University, Bogota, Colombia. (In Spanish)
- Rosario, D.A.V., C.G. Gracitelli, M.M.V. Luzo, C.M. Filho and M. Cohen *et al.*, 2014. [Levels of evidence for knee surgery in national journals. *Braz. J. Orthopedics*, 49: 13-16.