

A BIBLIOMETRIC STUDY OF SCIENTIFIC PRODUCTION ON EDUCATION IN ADMINISTRATION

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ABSTRACT

This article presents results of a survey that aimed to analyze the academic scientific production on education in administration using Bibliometria approach. The units of analysis of the study consisted of articles published in journals and educational and research journals in Brazil. Existing digital libraries in the country took part in this survey, as these are an important source of research for mapping the Brazilian science. 86 papers, books, reviews, doctoral theses, dissertations, in the period of 1995 to 2014 were analyzed; was reached after surveying the universe from the bank of articles in national journals- RAC, RAE, RAP AND RAUSP, CAPES, academic Scielo, Google scholar. The bibliometric study suggests that there is a remarkable growth in the academic scientific literature on education in Brazil, present in the Brazilian digital library from 2004.

Keywords: Education in Administration. Bibliometrics. Papers. Digital libraries.

INTRODUCTION

In this article the results of a research that aimed to analyze the results of academic scientific literature on teaching in administration are presented. The study units of analysis consisted of articles, books, book reviews, dissertations and doctoral thesis in education in administration. As research source, digital libraries from CAPES and Scielo Scholar were chosen.

Regarding the choice of the theme, it appears that the Brazilian scientific literature on the subject is not given the same degree of importance of other subjects. It was noted that there is a gap on the subject, both in postgraduate studies as well as scientific events. While some themes and periods give prestige, the theme of education in administration does not arouse the same interest. It can be seen that in the period from 1975 to 2006 only two articles were published.

From this perspective, it is believed that the study could contribute to the areas of education, since there is the imminent need for studies that can map and get indicators of academic scientific production on education in management, as well as the area of science and education.

According to Nicolini (2003, pg. 44), "the administration in undergraduate education in Brazil was characterized by transferring management technology, mainly from the US, and later by untying the teaching and research activities."

Brazil is experiencing since the early twenty-first, a period of intense change, both technological and commercial. In the context of mergers of domestic and foreign companies, it is necessary to have administrators with a systemic view, able to be active, with perception and quick thinking as well as detached from prejudices.

It is noticed that there are few studies on education in administration. This corroborates the statement from Nicolini (2003), the lack of scientific production, which is in the form of books and scientific works in administration is amazing, as is the amount of analytical advice that comes down to a minimum.

Nicolini (2003) also contributes: "on the education administration in Brazil, the first courses in the country date back to 1902 in two private schools in Rio de Janeiro School Alvares Penteado, and São Paulo, the Trade Academy".

Administration education was regulated only in 1931, with the creation of the Ministry of Education. According to Nicolini (2003), in the area of higher education it was created the Administration and Finance Course, this course formed the graduates in Economic Science. At this time, business schools were still three decades away from its regulation. However the change and the development of Brazilian society since the Industrial Revolution of 1930 demanded the preparation of human resources with advanced methods and techniques, largely due to economic growth.

The spread of more sophisticated methods in management science stood out:

The teaching of Administration, initially confused with the teaching of Economics, was first set in 1931, when the capitalism that was installed late in our country needed skilled professionals to manage industrial organizations that settled. In the 1950s, when the new Vargas government sought the social economic development of the country, followed by Kubitschek, teaching in Administration was structured from the influences generated by the Getúlio Vargas Foundation and, more specifically, by the São Paulo Business Administration School, established in 1954. With the development stimulated by the military governments and the "economic miracle", the nation favored large companies, multinationals and state funded- especially the latter. The teaching of Administration expanded at a rapid pace as a result of regulation of the profession [...] professionals able to face the world and its new demands (NICOLINI, pg.53, 2003).

There is no way to separate the study of Brazil's college education from the study of public policy. Tinocco (2005), the progressive and developmental policies, and the growing need for skilled professionals to meet both the state machine as large international companies that were fixed in the country, made the college degree a possibility of social mobility.

However, with the amount of existing titles, it is increasingly difficult for a scientist to decide which journal will be the disseminators of information. In addition, there are several factors that can interfere in this decision. To make sure that the data will be disseminated efficiently, and the article will be clearly evaluated by peers, the researcher needs a reference, that is, information about the journal you want to use. It is known that the journals are reliable sources of information.

The journals or scientific journals are the most important means of dissemination of science. This is a way of conveying the results of research, as can be seen by the increasing number of titles in recent years.

1. Bibliometry

For Fonseca (1986, pg. 10), "bibliometrics is the quantitative and statistical technique for measuring production rates and dissemination of scientific knowledge." Bibliometry emerged at the beginning of the century because of the need to study and evaluate the scientific production activities. Thus, Guedes and Borschiver (2005) say that bibliometrics are a set of laws and empirical principles which contributed to establish the theoretical foundations of information science

The most commonly used concept of bibliometry was defined by Pritchard (1969), it is the set of all studies attempting to qualify the written communication processes, including the Latka (1926) method of measuring productivity of scientists, Bradford (1934) scientific knowledge dispersion law, and the Zipf (1949) distribution model and frequency of words in a text .

Whereas in the application of statistical and mathematical techniques to describe aspects of literature and other media, bibliometrics was originally known as "statistical bibliography" a term coined by (Hulme in 1923), the term "bibliometrics" created by Otlet in 1934 in his "Traité de Documentation". However, the term became popular only in 1969, from a Pritchard's article, which discussed the controversy "Statistical bibliography or bibliometrics" (Guedes, 2005).

Leaving aside the judgments of value, it seems clear the importance of having a distribution that informs us about the number of authors, works, countries or magazines that exist in every category of productivity, utility or whatever else we want to know (PRICE, p. 39, 1976).

In Brazil, the bibliometric studies proliferated in the 1970s, mainly to studies in the Brazilian Institute of Bibliography and Documentation - IBBD, today Brazilian Institute for Scientific and Technical Information – IBICT.

In a specific way, the principle of bibliometrics is to analyze the scientific or technical activity by the quantitative study of publications and its main objective is the development of increasingly reliable indicators. Indicators can be defined as the parameters used in the evaluation processes of any activity. They can also indicate and infer that the greater the number of publications made better the journal.

2. THE THREE CLASSICAL LAWS

The Lotka's Law, formulated in 1926, was built from a study on the productivity of scientists from the authors present in Chemical Abstracts, between 1909 and 1916. Lotka found that a large proportion of the scientific literature is produced by a small number of authors, and a large number of small authors equals in production, the small number of large authors. From then formulated the law of inverse frames.

Bufrem and Prates (2005) emphasize that the bibliometric laws most commonly used are those related to scientific productivity (Lotka's Law), the dispersion of scientific production (Bradford's Law) and the occurrence of words in the text (Zipf's law). Their original applications were giving way to changes and mergers, structuring in a theoretical framework that justified the status of science to the body of knowledge that are shaping up around information.

The bibliometrics applied with a high degree of methodological rigor becomes an important tool to analyze the scientific production and qualify the evolution of the knowledge produced by researchers and students.

An important element in the realization of cognitive and social institutionalization of a field is the scientific article. Mueller (2001) comments that both articles, as the journals are important sources of knowledge dissemination.

Study the researchers and their contributions enriched and allows the sharing of information. Thus, to know the main authors and what they are searching, and it is also shared and known authors who are cited throughout the research.

Thus, this article seeks to highlight research in educational administration in Brazil, based on the quotes made in scientific articles, management journals, dissertations, book reviews, books and doctoral dissertations, from 1995 to 2014, in order to identify the scientific characters and their contributions to science.

Bibliometrics, as an area of study of Information Science, has an important role in analyzing the scientific production of a country, since its indicators can portray the behavior and development of an area of knowledge. The main motivation for the research presented here is to investigate the bibliometric studies conducted in Brazil, making a cut in the scientific production generated by Brazilian graduate, regardless of subject area (Araújo, p. 52.2007).

In Brazil, however there is a growth in scientific production specifically in educational administration from 2004 and reaching the highest production in 2013.

Table 1 lists the main laws and bibliometric principles, their study focuses and their main applications in knowledge management information.

Table 1: Major Laws of bibliometrics.

Information Science		
Bibliometrics		
Laws and Principles	Focus of study	Main applications
Bradford's Law	Journals	Estimate how relevant journals are.
Lotka's Law	Authors	Estimate the degree of relevance of authors.

Zipf's Laws	Words	Automatic indexing of scientific and technological articles.
Golffman's Transition point (T)	Words	Automatic indexing of scientific and technological articles.
Invisible colleges	Quotes	Identification of elite researchers.
Factor immediacy or impact	Quotes	Estimate the degree of relevance of scientific journals, in particular area of knowledge.
Bibliographic coupling	Quotes	Estimate the degree of bonding two or more articles.
Co-citations	Quotes	Estimate the degree of bonding two or more articles.
Literature obsolescence	Quotes	Estimate the decline of literature in a particular area of knowledge.
Half-life	Quotes	Estimate the half-life of a unit of literature of a given area of knowledge.
Epidemic theory of Goffman	Quotes	Estimate the growth and decline rate of a particular area of knowledge.
Law of Elitism	Quotes	Estimate the size of the elite population of certain authors.
Front Search	Quotes	Identification of a standard relationship between multiple authors which quote each other.
80/20 Rule	Information demand	Composition, enlargement and reduction of collections.

Source: Prepared by author

3. METHODOLOGICAL METHODS AND PROCEDURES

Contributions are made by the scientific articles, reviews, books, dissertations and theses published in journals dealing on education in administration from 1995 to 2014, available electronically, and references contained in the bibliography of scientific articles.

The methodological procedures used for this study are described below: identifying the number of articles published from 1995 to 2014 in the administration of journals with the "Education in Administration" expression. This period was chosen by the availability of electronic information.

The first step in conducting the research was the creation of two bases of interrelated data and citing articles, ie articles published in those vehicles and articles. In the first database, for each of the articles published in the area between 1995 to 2014, the following information was raised: publishing area, text expertise, authors of the article. From this first survey, the second database was created, inter-related to the first, number of authors, journals, year of publication and objectives of each publication.

The second step was the intersection and the consolidation of information as follows: authors count, most influential work and number of publications per year.

The methods used were quantitative, qualitative and inductive. The research is characterized as exploratory and descriptive through bibliometrics. As Silva (2009), the bibliometric research can be defined as the application of mathematics to books, articles and other media. Bibliometry is already considered the measurement of literature, therefore, the quantitative measurement of scientific publications.

The method proposed by empiricists Bacon, Hobbes, Locke and Hume believes that knowledge is fundamental in the experience, not taking into account pre-established principles. In inductive reasoning, generalization is derived from cases of observations of reality. The particular findings lead to the development of generalizations (GIL, 1999; Lakatos, 2001). While scientific research is the investigation process, used for the search for truth and solve problems, (THIOLLENT, 2009).

Exploratory research as to the purposes, according to Vergara (2002), is performed in an area where there is little scientific knowledge accumulated or systematized, because it is a research that seeks to explore concepts and facts of limited bibliography. Moreover, by its nature of research, it does not contain assumptions which may, however, arise during the research (TRIVIÑOS, 1987).

While for Gil (2005), a descriptive and qualitative exploratory research is one that aims to explain and provide greater understanding of a given problem.

It is also noted that the search can be performed by practical or applied reasons. It can be said that they are to achieve something more efficiently (GIL, 2005).

As for its qualitative form, he states that it does not use statistical tool in the analysis process of a problem. About this kind of research, Minayo (1993) asserts that it is an appropriate way to get the knowledge of the nature of a social phenomenon, given the fact the researcher collect data actually searched for later review it inductively.

Data collection is how to obtain the data necessary to address the problem (VERGARA, 2000). Thus the means used for research data were digital library research.

The option for the selection of publications bases is characterized as intentional and non-probability motivated by the premise that they regularly publish articles related to the field.

It was used the capture of files in PDF format available on the websites of newspapers, definitions and formatting of the database, as well as the fields and their structures; data tabulation was made in Microsoft Excel.

4. CLASSIFICATION OF RESULTS

Tables 2 to 4 and Figures 1 to 3 present the results obtained.

Table 2 - Authors with the highest number of publications

Authors with the highest number of publications	Quantity
OHIRA, Regina Hiltomi Fukuda.	3
CORDONI, Luiz, Jr.	3
NUNES, Elisabete de Fatima Polo de Almeida.	3
DOMINGUES, Maria Jose Carvalho de Souza.	2
WISSMANN, Alexandre Dal Molin.	2
MAINARDES, Emerson Wagner.	2
GOMES, Andreia Patrícia.	2
PORTELLA Montardo, Sandra.	2
SIQUEIRA, Batista Rodrigo.	2
REIS, José Roberto.	2

Source: Prepared by author

Figure 1: Graphic representation of academic productions

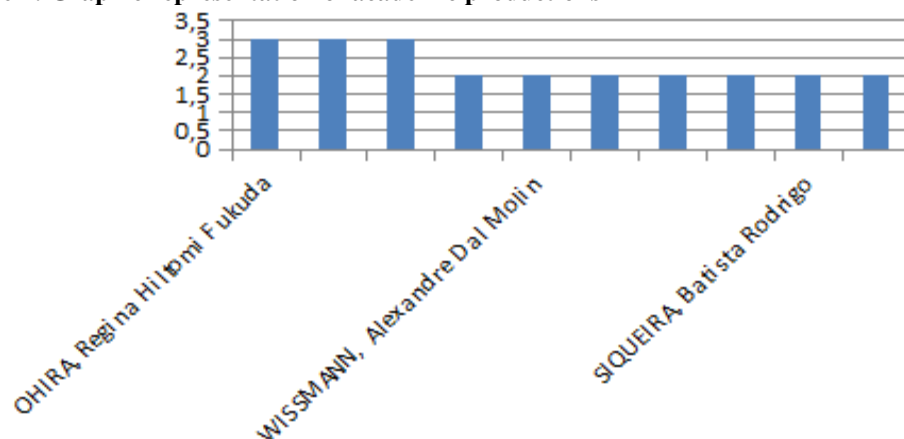


Table 3 - Scientific Productions from 1995 to 2014

Year of production	Amount of articles produced
2004	1
2005	1
2007	4
2008	4
2009	4
2010	4
2011	6
2012	2
2013	7
2014	3

Source: Prepared by author

Figure 2 - Percentage of publications per year.

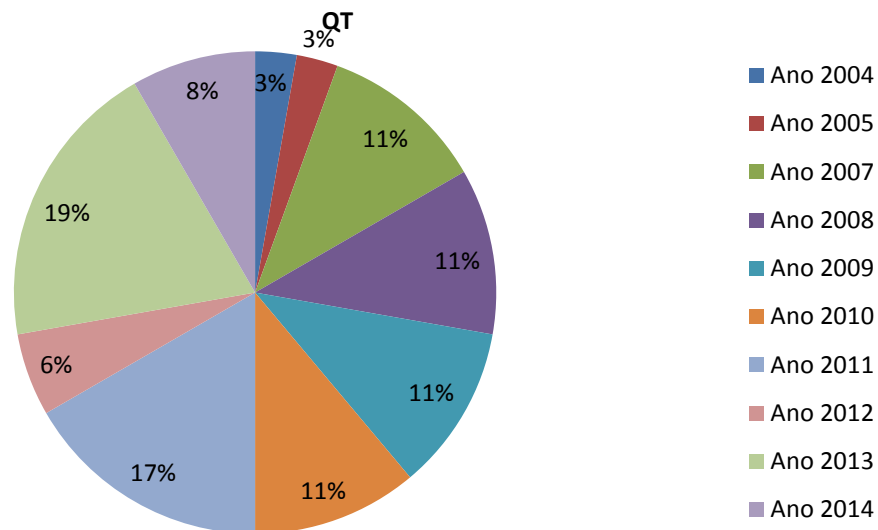


Table 4 - Periodic and magazines that participated in the study

Magazine with coverage on "education in administration"	Year
Revista de Gestão USP	2012
Ra'e GA	2011
Revista de Gestão e Projetos	2013
Revista de Gestão, Finanças e Contabilidade.	2013
Revista de Adm. Contemporânea	2009
Psicologia Reflexão e Crítica	2009
Revista Gestão USP REGE-USP	2008
Journal of Information Systems & Tecnology Managemant	2007
Era Eletrônica	2008
Revista Nera	2010
Rac-Revista de Adm. Contemporânea	2011
Rac- Revista de Adm. Contemporânea	2013
Rac-Revista de Adm. Contemporânea	2011
Revista Cientifica Sensus Adm.	2013
Revista Adm. São Paulo	2014
RECADM	2005

RECADM	2010
RECADM	2012
RECADM	2003
RECADM	2007
Revista USP	2008
Digital Library USP	2008
RAE Eletrônica	2007
Lilacs Revista ADM.	2007
Revista Adm. Pública	2014
Revista Gestão na Universidade América	2013
ERA Eletrônica	2009
REA-UFSM Revista de Adm.	2011
FGV-EBAPE	2010
RAP: Revista Brasileira	2014
Revista Capital Científico Eletrônica (RCCE)	2010
XXI Seminário de Iniciação Científica-UNIJUI	2013
Seminário em Adm. XIV SemeAD	2011
VIII Jornada Científica e Desenvolvimento Tec. IFETES ES	2013
LILACS Revista Adm.	2004
RECADM	2011
ReA-UFSM Revista de Adm.	2009

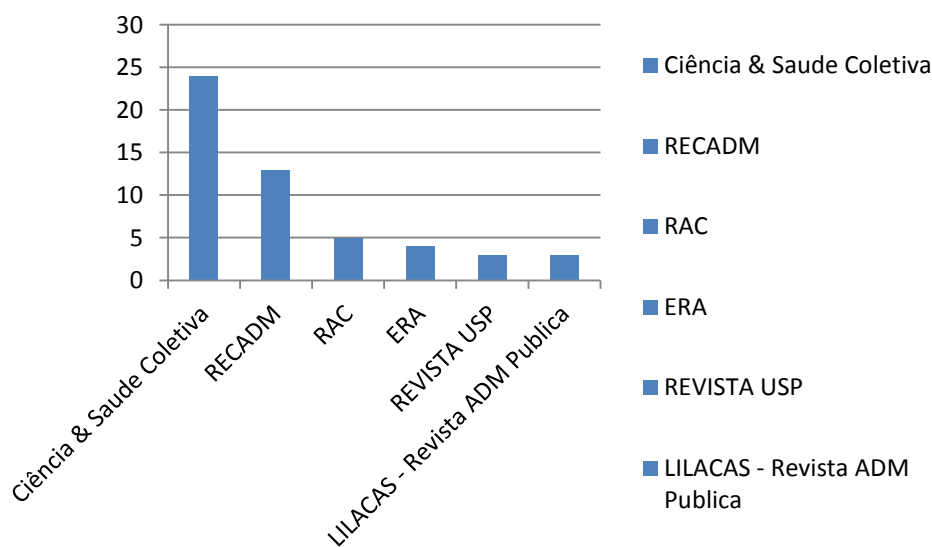
Source: Prepared by author

Table 5 - Magazines which obtained the highest number of publications in the period 1995-2014.

Magazine	Number of productions
CIENCIA & SAUDE COLETIVA	24
RECADM	13
RAC	5
RAE	4
REVISTA USP	3
LILACAS - REVISTA ADM PUBLICA	3

Source: Prepared by author

Figure 3 - Magazines with more publications



CLOSING REMARKS

This research has selected articles which included the word "school administration" in their abstracts, digital journals, in order to analyze what has been published about the proposed subject.

The assessment of the data provides a set of journals in the scientific production in bibliometrics, published in national and international journals published from 1995 to 2014.

So 87 articles met the prerequisites, with greater coverage in the southeastern region of the country, there were 263 authors, and most of the articles had its coverage in the areas of education, health, economic development, public health administration, collaborative networks, strategic networks, characterization of the profile of managers and other matters. In its contents included the term "education in administration," but isolated, which did not meet the study objective. Therefore, it was necessary to classify the articles contained in the summary the term "school administration" and that its development had scientific contribution to the study. Of this total, 36 (41.38%) articles with coverage on "education in administration," and of all the authors who participated in the survey only 3 (1.14%) authors published 3 articles, 7 published 2 (0.76%) articles each. The other only contributed with one article in the period studied. The magazine that had the highest number of publications in the period was *Ciência & Saúde*, with 24 contributions, but they did not meet the goal. The *RECADM* magazine contributed with 13 publications the first objective, followed by the *RAC* with 5, *RAE* with 4, 3 and *USP Magazine Magazine LILACAS- Public Administration* 3.

When comparing the production during the study period from 1995 to 2014 it is noted that in 1995 had only one article, and the next publication occurred only in 2000 and 2003, in 2006 again had a gap, got no publication. The publications began to be common in other periods. It was found the first publication with the word "education in administration" only in 2004. There has been a gradual increase in publications on "education in administration", and peak occurred in 2013 with 7 publications.

It is emphasized that it is necessary to introduce undergraduate and graduate subjects in teaching in administration for research on education in management can be made. One option would be to introduce them in the disciplines focused on education, entrepreneurship, economics, especially in disciplines that provide training to students.

The indicators presented in this study had a picture of scientific development, which is the year 2014 with a production of 3 articles. The possibility of further studies in this number surpass the previous years can not be refuted, since they are still being submitted articles for publication.

Thus it is possible that there may be a new panorama, especially with the development of other research. However, it is not excluded the possibility of including other sources of research, including only with Master and Doctoral Theses.

With the end result of bibliometric analysis, it appears that 41.38% of the articles surveyed are related to the proposed subject, which shows there is a gap, and through this the possibility of investing in the scientific literature on education in Business Administration.

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