

Business and Management Research in Latin America:

A country-level bibliometric analysis

Abstract

Bibliometrics is a scientific discipline that studies quantitatively the bibliographic material of a particular topic. This study analyzes the management research developed by Latin American countries between 1990 and 2014. The work uses the Web of Science database and provides several country-level bibliometric indicators including the total number of publications and citations, and the *h*-index. The results indicate that Brazil, Chile and Mexico led the region's scientific publication on the field. The results also show that operations research and finance are the most significant topics in the region.

Keywords: Latin America; Management; Bibliometrics;

Introduction and Relevant Literature

Business and Management are old disciplines that are intended to improve the performance of organizations. Thus, they are supposed to help economies to provide job opportunities, growth, and as result, to improve living conditions of the population. Consequently, Business and Management research should be of interest particularly for emerging economies such as Latin American countries.

Today the number of publications in Latin America is very low compared to the levels of developed nations, especially in top journals (Olavarrieta & Villena, 2014). There are some existing initiatives in order to solve this weakness. For example, it is worth noting the creation and consolidation of journals in the region including Academia – Latin American Journal of Administration, Innovar – Journal of Administrative and Social Sciences, and Management Research: Journal of the Iberoamerican Academy of Management. Additionally, several journals publish special issues focused exclusively in business and management issues in

Latin America including the *Journal of Business Research* (Raventos & Ospina, 2013; Sanz & Jones, 2013), *Management Decision* (Robles, 2013), and the *Journal of Organizational Change Management* (Ribeiro-Soriano, 2012).

There are also few studies that analyze the development of business and management research in Latin America. Koljatic & Silva (2001) provide a general overview considering both business and economics. They find that only four countries have a significant research production: Argentina, Brazil, Chile, and Mexico. Researchers have also studied the academic collaboration between Latin-American and Ibero-American countries (Cardoza and Fornés, 2011; Ronda-Pupo et al., 2015). Rodríguez-Pereira et al. (2000) studied the evolution of scientific research on Brazil. However, none of these studies has focused on identifying the leading countries on business and management research in the region during the last 25 years.

The purpose of this paper is to gain an impression of management research in Latin America and its evolution by country and by fields over the last 25 years by using bibliometric methods. The term bibliometrics refers to the mathematical and statistical analysis of patterns that appear in the publication and use of documents (Diodato, 1994). Therefore, starting from the hypothesis that the level of publications in each country is a reliable indication of a country influence on the management literature, the aim of the present study is to identify the more influential countries. Note that in the literature, there are many bibliometric studies analyzing a wide range of areas including in finance (Niemi, 1987; Borokhovich et al., 1995), accounting (Merigó and Yang, 2015), economics (Conroy et al., 1995; Scott and Mitias, 1996; Coupé, 2003), entrepreneurship (Landström et al. 2012), innovation (Fagerberg et al. 2012; Merigó et al. 2015a), international business (Treviño et al. 2010), and health economics (Wagstaff & Culyer, 2012).

Specifically in management, Podsakoff et al. (2008) present a general overview of the most influential authors and institutions. Some other works provides similar results although

focusing in some other related concepts including the work of Aguinis et al. (2012) that analyze authors and Stahl et al. (1988) that study institutions. And some other articles focus on a specific journal, often motivated by a remarkable anniversary or event of the journal. For example, Van Fleet et al. (2006) and Bauer (2009) focus on the Journal of Management to celebrate its 30th and 35th anniversary respectively. And Knight et al. (2000) focus on the Journal of Business Research between 1985 and 1999, and Merigó et al. (2015c) between 1973 and 2014.

Today, there are many rankings of business schools in Latin America according to a wide range of general indicators. But no one focus strictly on a research perspective at a country level. The results indicate that the leading countries, by far, are Brazil, Chile, and Mexico. Since business and management is a very broad discipline, the work also considers different subfields. In general, Innovation and Entrepreneurship, Operations Research and Finance are the most popular categories in Latin America according to the number of articles published in the Web of Science (WoS) journals.

This paper is organized as follows. The next section briefly explains the bibliometric methods. The following section presents a description of the empirical results. Finally, the last section presents a summary and discussion of the conclusions to be drawn from this investigation, identifies limitations, and suggests future research.

2. Methods

The Web of Science (WoS) is the database that we use in order to collect the articles included in our study. Currently, it includes more than 50.000.000 articles that are classified in about 250 categories and 150 research areas. The information was collected between March and April of 2015. In this section we explain the criteria used to select: Latin American countries, subfields from business and management, high-quality journals, and Latin American articles. Finally, we also present the variables used for the bibliometric analysis.

Latin American Countries

Nicholls-Nixon et al. (2011) defines Latin America as “the independent countries south of the United States, where Spanish or Portuguese are the dominant languages”. In order to be inclusive with others countries in similar economic and social conditions, we follow the geographical location and not the language to consider as Latin American countries the following: Argentina, Haiti, Belice, Honduras, Bolivia, Jamaica, Brazil, Mexico, Colombia, Nicaragua, Costa Rica, Panama, Cuba, Paraguay, Dominica, Peru, Ecuador, Dominican Republic, El Salvador, Saint Lucia, Granada, Saint Vincent and The Grenadines, Guatemala, Suriname, Guyana, Venezuela and French Guyana.

Management’s and Business Management’s Subfields

Consistent with the Comité National de la Reserche Scientifique’s (CNRS) Economic and Management Section (section 37), we decompose business and management in thirteen categories, which are presented in Table 1. This is, at the top of our knowledge, one of the most accepted methodologies for classifying scientific research. For example, the Chilean National Science Foundation (CONICYT) uses this report in order to allocate funding through different disciplines (<https://www.gate.cnrs.fr/spip.php?rubrique31&lang=en>). Additionally, in order to control for the influence of Latin American journals, we have also included a category “Spanish and Portuguese Journals”.

Insert Table 1 about here

Management’s and Business Management’s High-Quality Journals

Because of the region’s outlets have not frequently reached the leading journals (Donoso and Crittenden, 2008; Bonilla et al. 2015), it is not possible to develop comprehensive rankings considering only Top 10 or Top 30 journals as it is been used in World rankings (Podsakoff et al. 2008). In order to solve this problem, we use as a sample

349 journals that: (1) are available in the WoS categories of Business, Business Finance and Management (<http://ip-science.thomsonreuters.com/cgi-bin/jrnlst/jlsubcatg.cgi?PC=SS>); and (2) are also included in the Journal Citation Reports (JCR) of WoS.

We introduced a quality criterion by selecting all the journals that receive an evaluation of 1 or 2 in the CNRS report in the business and management categories. Of the 329 journals previously selected, only 102 reach the high-quality evaluation (Coronado et al. 2015; available at: <http://www.cid.uchile.cl/wp/WP-2015-05.pdf>). The first Top 8 journals received an evaluation of 1 “plus”, which signals for a particularly remarkable quality. The next top 31 journals received an evaluation of 1, and the remaining Top 61 outlets received an evaluation of 2.

This study considers the number of publications, the number of citations, and the *h*-index (Hirsch, 2005). Note that the *h*-index combines articles and citations in the same indicator. That is, if a set of publications has an *h*-index of 30, inside the set, there are 30 articles that have received 30 citations or more. Consistent with the importance of combining publications and citations (Merigó et al. 2015b), we use *h*-index as the main criterion for generating the country-level ranking of publications, which is calculated by considering the top 102 journals. In case of equal *h*-index, the second criterion for the ranking is total number of citations.

3. Results

The search process is developed by searching for articles with Latin-American affiliation during the period of twenty-five years from 1990 until 2014. Currently, there are 1335 articles in the Top 102 journals and 3656 in all journals. This Section presents the results of the bibliometric country-level analysis in two parts: (1) the leading countries in business and management in Latin America; and (2) the leading countries in different subfields.

Leading countries in business and management in Latin America

Table 2 presents the Latin American countries ranked by h -index by considering the publications on the top 102 journals. Overall, the publications of Brazil (1° place), Chile (2° place) and Mexico (3° place) explain 76% of scientific production of Latin America in the Top 102 journals (the results are similar when all the journals are considered). The case of Chile is very remarkable considering that it is ten times smaller than Brazil and Mexico and it is the leader in top 8 journals with the same number of articles than Brazil and Mexico together. The rest of the countries do not reach a significant position in the field yet.

Insert Table 2 about here

When population is included to control for country size, the results are significantly different. Chile obtains remarkable results leading with an average of 14,87 publications per million habitants approximately. Far from this productivity per capita, Costa Rica is in second place with around 9,85 publications per million habitants. Then, in third and fourth place appear Uruguay and Jamaica with 4,11 and 3,68 publications per million habitants respectively. Interesting to notice the last two cases that are ranked 9th and 13th by h -index respectively but they are among the most productive when considering the population.

Insert Table 3 about here

Another interesting issue is to consider the collaboration network of Latin-American countries with foreign ones. For doing so, Table 3 presents the h -index based ranking of the 22 collaborating countries according to the Top 102 journals. United States of America (USA) is the country with the highest degree of collaboration with Latin-American countries according to the number of studies co-authored in the Top 102 journals. Spain appears in the second position, which is very remarkable considering that it is much smaller than the USA

and has a lower publication record. England and Canada are in the third and fourth position very close to Spain.

Leading countries in different business and management categories

In order to provide a deeper analysis of the previous results, this section classifies the publications by the thirteen categories presented in Table 1. Table 4 to Table 6 presents the leading institutions in the most relevant categories (more than 5% of the Latin American Publications) by considering all journals (e.g. 329 journals). From a general perspective, Brazil, Chile, and Mexico maintained a remarkable position and leads each category except by: Finance where Argentina is in the second place and Mexico in a fourth place (Table 5).

Insert Table 4 – Table 6 about here

In terms of leading categories, the publications in the Spanish and Portuguese journals, Operation Research (both in Table 6), and Finance (Table 5) explain more than 50% of the publications of the region (22%, 21%, and 15% respectively). Then, the categories of General Management, Other Business and Management Activities (both in Table 4), and Innovation and Entrepreneurship (Table 5) present an interesting development (around 8 % each). However, none of the remaining 7 categories have a significant impact on the literature and they clearly represent areas where improvement is needed.

4. Conclusions

This work presents a general overview of the leading countries in business and management research in Latin America between 1990 and 2014. The findings indicate that Brazil is the most relevant country in the region. Chile gets the second position close to Mexico. The case of Chile is very remarkable because it is ten times smaller than Brazil and six times smaller than Mexico. In general, Latin-American institutions tend to collaborate more with the USA and Europe. Inside Europe, the Spain and UK are the most connected

countries with the region.

Focusing on topics, the publications in the Spanish and Portuguese journals, Operation Research, and Finance explained more than 50% of the publications of the region. On the other hand, accounting, business strategy and International Management, human resource management, management information systems, marketing, organization studies, production and Operations Management are the topics with the lowest publication record by Latin-American countries. Important to notice the high influence of the Spanish and Portuguese journals since these represent a preference for culturally closer countries when Latin American authors look for journals to target their publications. This is also consistent with Martinez and Kalliny (2012) who identified that an important challenge for empirical research in the context of Latin America is that researchers do not know English sufficiently well.

Useful value added is offered by this paper, not only because it is the first to apply bibliometric techniques to management research literature in Latin America, but also because, in so doing, it complements and improves the findings of other studies that have approached the subject from the qualitative perspective. It is, however, no substitute for extensive reading and fine-grained content analysis (White and McCain, 1998). The influence and prestige of each country in Latin American's management-literature are of interest to researchers, universities, journal publishers, and policy makers for a variety reasons. Researchers are concerned with country influence because it may serve as evidence of the existence of appropriate conditions to work as a researcher on the field (Franke, Edlund, and Oster, 1990; Kirkpatrick and Locke, 1992; Niemi, 1988). As a result, those leading countries may attract researchers not only by offering higher salary or research funds, but also by offering better environment for research and, as a result, for tenure access (Gomez-Mejia and Balkin, 1992; Johnson and Podsakoff, 1994; Kirkpatrick and Locke, 1992). Knowledge about the influence of a country is also valuable to researchers because it provides a mechanism for scholars to

search for coauthors who may help to increase the likelihood of being published in a top journal. Universities are also interested in information about country influence and prestige because it may inform decisions such as strategic alliances and long-term relation with foreign institutions that are more likely to influence the development of a successful research agenda. Policy makers are concerned with information about different countries' impact on management research because it may help to design policies for higher education intended to facilitate the scientific development in the country. This type of information may help them to identify the different policies, and the respective consequences in countries with similar conditions.

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Table 1: Thirteen economic categories according to the CNRS report

Acronym	Category	NJ	TP	TP-LA	%LA
ACC	Accounting	25	10658	18	0,17%
BSIM	Business Strategy & International Management	14	7892	84	1,06%
FIN	Finance	73	89058	540	0,61%
GM	General Management	48	40709	382	0,94%
HRM	Human Resource Management	18	13226	64	0,48%
IE	Innovation & Entrepreneurship	27	21818	301	1,38%
MIS	Management Information Systems	16	6175	40	0,65%
MKT	Marketing	31	22901	130	0,57%
OBM	Other Business and Management Activities	31	25589	279	1,09%
OR	Operations Research	16	31002	780	2,52%
OS	Organization Studies	27	19563	120	0,61%
POM	Production & Operations Management	19	10491	125	1,19%
SPJ	Spanish and Portuguese Journals	7	1428	650	45,52%

Abbreviations: NJ = Number of journals; TP = Total publications; TP-LA = Total publications with Latin American affiliation; %LA = Percentage of Latin American publications (TP-LA/TP).

Table 2: Global ranking of Latin American countries in business and management research

R	Country	Top 102				Top 8	Top 41	All Journals				Population	TP/Popul.	TC/Popul.
		TP	TC	H	TC/TP	TP	TP	TP	TC	H	TC/TP			
1	Brazil	572	6926	37	12,11	8	279	1572	9438	40	6,00	200.361.925	2,85	34,57
2	Chile	262	4042	30	15,43	18	127	590	5894	32	9,99	17.619.708	14,87	229,40
3	Mexico	218	2863	26	13,13	10	96	511	4252	32	8,32	122.332.399	1,78	23,40
4	Argentina	74	904	17	12,22	3	38	244	1751	21	7,18	41.446.246	1,79	21,81
5	Colombia	80	976	14	12,20	0	35	232	1360	16	5,86	48.321.405	1,66	20,20
6	Venezuela, RB	44	316	11	7,18	0	29	318	432	12	1,36	30.405.207	1,45	10,39
7	Costa Rica	48	301	9	6,27	0	5	82	354	11	4,32	4.872.166	9,85	61,78
8	Peru	26	160	8	6,15	0	8	103	431	11	4,18	30.375.603	0,86	5,27
9	Uruguay	14	110	5	7,86	0	6	40	251	8	6,28	3.407.062	4,11	32,29
10	Cuba	6	97	4	16,17	1	5	13	102	4	7,85	11.265.629	0,53	8,61
11	Guatemala	3	143	3	47,67	0	3	8	147	3	18,38	15.468.203	0,19	9,24
12	Dominican Rep.	4	37	3	9,25	0	3	4	37	3	9,25	10.403.761	0,38	3,56
13	Jamaica	10	22	3	2,20	0	0	28	69	4	2,46	2.714.734	3,68	8,10
14	Bolivia	6	104	2	17,33	0	4	13	162	4	12,46	10.671.200	0,56	9,75
15	Nicaragua	12	15	2	1,25	0	0	20	19	2	0,95	6.080.478	1,97	2,47
16	Ecuador	3	11	2	3,67	0	0	11	27	3	2,45	15.737.878	0,19	0,70
17	Guyana	1	50	1	50,00	0	1	2	50	1	25,00	799.613	1,25	62,53
18	Honduras	1	2	1	2,00	0	0	1	2	1	2,00	8.097.688	0,12	0,25
19	Panama	1	1	1	1,00	0	0	6	5	1	0,83	3.864.170	0,26	0,26

Abbreviations: R = Rank; TP and TC = Total number of publications and citations; H = H-index; TP/Pop, TC/Pop = Papers and cites divided by population.

Table 3: Leading foreign countries co-authoring with Latin America

R	Country	Top 102				Top 8	Top 41	All Journals				Population	TP/Popul.	TC/Popul.
		TP	TC	H	TC/TP	TP	TP	TP	TC	H	TC/TP			
1	United States	370	8115	43	21,93	24	196	704	10991	49	15,61	316.128.839	1,17	25,67
2	Spain	101	1349	20	13,36	1	44	285	1909	22	6,70	46.617.825	2,17	28,94
3	United Kingdom	98	1453	19	14,83	0	38	212	2299	24	10,84	63.181.775	1,55	23,00
4	Canada	71	1051	17	14,80	1	40	118	1302	20	11,03	35.154.279	2,02	29,90
5	China	28	481	11	17,18	1	17	43	513	11	11,93	1.357.380.000	0,02	0,35
6	France	50	471	13	9,42	2	24	99	640	14	6,46	65.939.866	0,76	7,14
7	Germany	38	802	10	21,11	0	17	58	952	14	16,41	80.651.873	0,47	9,94
8	Netherlands	27	424	10	15,70	0	14	53	606	12	11,43	16.804.432	1,61	25,23
9	Portugal	28	281	9	10,04	1	12	52	309	9	5,94	10.457.295	2,68	26,87
10	Australia	23	186	9	8,09	0	5	53	295	11	5,57	23.129.300	0,99	8,04
11	Italy	21	206	8	9,81	0	11	37	250	9	6,76	60.233.948	0,35	3,42
12	Switzerland	16	280	6	17,50	1	8	31	405	9	13,06	8.087.875	1,98	34,62
13	Taiwan	11	197	6	17,91	0	3	13	216	7	16,62	23.373.517	0,47	8,43
14	India	9	177	6	19,67	0	2	16	208	7	13,00	1.252.139.596	0,01	0,14
15	Israel	12	152	6	12,67	0	4	18	175	7	9,72	8.059.500	1,49	18,86
16	Japan	9	128	6	14,22	0	4	16	164	7	10,25	127.338.621	0,07	1,01
17	New Zealand	13	116	6	8,92	0	6	31	184	9	5,94	4.442.100	2,93	26,11
18	Norway	11	110	6	10,00	0	7	21	157	8	7,48	5.080.166	2,17	21,65
19	Austria	9	174	5	19,33	0	4	11	182	6	16,55	8.479.823	1,06	20,52
20	Belgium	9	154	4	17,11	0	7	19	286	6	15,05	11.182.817	0,80	13,77

Abbreviations: R = Rank; TP and TC = Total number of publications and citations; H = H-index; TP/Pop, TC/Pop = Papers and cites divided by population.

Table 4: Leading countries in OBM and GM

R	Country	Other Bus. and Manag. Act.				R	Country	General Management			
		TP	TC	H	TC/TP			TP	TC	H	TC/TP
1	Brazil	94	484	12	5,15	1	Brazil	126	1003	12	7,96
2	Mexico	66	404	11	6,12	2	Chile	68	643	12	9,46
3	Chile	19	208	7	10,95	3	Mexico	52	422	10	8,12
4	Peru	20	122	5	6,10	4	Costa Rica	50	183	7	3,66
5	Colombia	26	56	5	2,15	5	Colombia	30	122	6	4,07
6	Venezuela	18	50	4	2,78	6	Peru	21	99	6	4,71
7	Jamaica	10	34	3	3,40	7	Argentina	18	92	5	5,11
8	Argentina	27	39	2	1,44	8	Venezuela	9	46	4	5,11
9	Dominican Rep.	2	32	2	16,00	9	Nicaragua	12	15	2	1,25
10	Ecuador	2	19	2	9,50	10	Guyana	1	50	1	50,00
11	Costa Rica	4	5	2	1,25	11	Uruguay	2	13	1	6,50
12	Cuba	3	3	1	1,00	12	Jamaica	5	4	1	0,80
13	Uruguay	1	0	0	0,00	13	Ecuador	2	2	1	1,00
						14	Panama	1	0	1	0,00
						15	Guatemala	1	0	0	0,00

Table 5: Leading countries in IE and Finance

R	Country	Innovation & Entrep.				R	Country	Finance			
		TP	TC	H	TC/TP			TP	TC	H	TC/TP
1	Brazil	137	1237	16	9,03	1	Chile	138	1881	15	13,63
2	Mexico	54	402	12	7,44	2	Argentina	71	873	15	12,30
3	Chile	34	255	10	7,50	3	Brazil	186	1002	14	5,39
4	Argentina	28	181	8	6,46	4	Mexico	86	756	14	8,79
5	Colombia	23	83	5	3,61	5	Colombia	26	73	5	2,81
6	Bolivia	6	151	3	25,17	6	Uruguay	12	110	4	9,17
7	Uruguay	7	58	3	8,29	7	Venezuela	15	23	3	1,53
8	Peru	6	23	2	3,83	8	Peru	12	21	3	1,75
9	Venezuela	5	10	2	2,00	9	Jamaica	5	5	2	1,00
10	Jamaica	4	5	2	1,25	10	Costa Rica	3	0	0	0,00
11	Costa Rica	2	5	1	2,50	11	Panama	2	0	0	0,00
12	Guatemala	1	14	1	14,00	12	Bolivia	1	0	0	0,00
13	Ecuador	1	1	1	1,00	13	Ecuador	1	0	0	0,00
14	Cuba	1	0	0	0,00	14	El Salvador	1	0	0	0,00
						15	Guyana	1	0	0	0,00
						16	Nicaragua	1	0	0	0,00

Table 6: Leading countries in OR and SPJ

R	Country	Operation Research			
		TP	TC	H	TC/TP
1	Brazil	388	3756	30	9,68
2	Chile	158	1628	24	10,30
3	Mexico	106	992	18	9,36
4	Colombia	54	885	12	16,39
5	Venezuela	25	247	9	9,88
6	Argentina	35	219	7	6,26
7	Uruguay	13	67	5	5,15
8	Peru	10	60	5	6,00
9	Cuba	5	80	3	16,00
10	Jamaica	1	9	1	9,00
11	Bolivia	2	3	1	1,50
12	Ecuador	2	3	1	1,50
13	Costa Rica	2	2	1	1,00
14	Guatemala	1	1	1	1,00
15	Panama	1	1	1	1,00

R	Country	Spanish and Portuguese J.			
		TP	TC	H	TC/TP
1	Brazil	394	111	4	0,28
2	Chile	79	25	2	0,32
3	Mexico	48	9	2	0,19
4	Colombia	40	12	1	0,30
5	Venezuela	229	11	1	0,05
6	Nicaragua	7	4	1	0,57
7	Argentina	20	2	1	0,10
8	Peru	13	2	1	0,15
9	Costa Rica	10	1	1	0,10
10	Uruguay	3	1	1	0,33
11	Panama	1	1	1	1,00
12	Cuba	2	0	0	0,00
13	Bolivia	1	0	0	0,00
14	Ecuador	1	0	0	0,00
15	Guatemala	1	0	0	0,00
16	Jamaica	1	0	0	0,00