BIBLIOMETRIC OUTLOOK OF THE MOST CITED DOCUMENTS IN BUSINESS, MANAGEMENT AND ACCOUNTING IN IBERO-AMERICA

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Abstract.

Research on business, management and accounting (BMA) in the past century has been overwhelming. Regardless of its significance, regions such as Ibero-America have been overlooked from exhaustive studies on bibliometrics in the subject of BMA. Here, a bibliometric outlook of the subject of BMA in Ibero-America was conducted by analyzing the ten most cited documents in BMA in each country from 1996 to 2017 using the citation database Scopus. The main findings showed: a rapid increase in documents' production; both Spain and Portugal domain the overall documents' production and citations; most of the documents are pay-walled; the most-desired journal in the region is also the most-suspicious; a Pareto distribution in both citations by documents and authors by documents; and institutional status has a significant effect on AACSB accreditation.

Keywords: Business; Management; Accounting; Bibliometrics; Ibero-America.

JEL Classification: M10, M40, O30, Z1.

1 Introduction

Since the publication of the first volume of *Management Science* in 1954 by The Institute of Management Science at Columbia University, research on business, management, and accounting (BMA) has been exceptionally fertile. This tide of intellectual productivity over the past half-century requires bibliometric methods such as citations, co-citations, bibliographic coupling, co-authoring, and co-wording to comprehend the dynamics related to document production and impact by journals, authors, institutions, and countries; and the mutual influence between disciplines and the social capital of scholars from a quantitative angle (Zupic and Čater, 2015). These bibliometric analyses also have been abundant. By performing a Boolean search on bibliometric studies on BMA (Bib-BMA) using Scopus, 200 documents were found (*i.e.*, 159 papers, 35 conference papers, and six book chapters) from 1996 to 2016 (Scopus, 2018). Regardless of these developments, several Bib-BMA focused on specific countries were found, and yet no study was focused on Ibero-America (*i.e.*, Latin America, Spain, and Portugal). Moreover, neither institutions nor authors from outside the United States of America (USA) have been pinpointed either when conducting exhaustive Bib-BMA (Podsakoff *et al.*, 2008) nor mapping *scientific excellence* around the globe (Mapping Scientific Excellence, 2018).

The intention of studying a defined set of countries instead of either the most cited documents or authors/journals with the highest h-index in Ibero-America was to amplify the inclusion criteria of researchers and institutions from the region excluded by previous assessments. Considering the significant correlation between journal productivity and citations (Tsay and Ma, 2003) a study focused on analyzing the aforementioned variables in Ibero-America would be biased towards documents published by researchers from Spain, Brazil, and Portugal, as these are the most productive countries. While researchers from Panama, Nicaragua or Venezuela would be out of focus. This broad inclusion would allow a refined understanding of each country instead of focusing on a select group. Therefore, the objective of this study was to comprehend

the bibliometric features of the subjects of BMA in Ibero-America by analyzing the ten most cited in BMA documents in each country from 1996 to 2017 using the citation database Scopus. A comprehensive framework of 18 variables was developed to conduct the bibliometric overview.

In the next section, the literature review is presented, then, the bibliometric outlook is divided in seven subsections: regional and countries, publication, citations and h-index, title text-mining analysis, authors, and status and accreditation. In the seventh section, we conducted an analysis on the differences among institutional status on the Field-Weighted Citation Impact, authors' h-index, documents published, journals' h-index, leading authors, and open access. Afterward, the results are discussed. Finally, the conclusions are presented.

2 Literature review

English-language research on Bib-BMA has orbited around three centers of gravity: BMA-related subjects, economic sectors, and specific journals. First, the main BMA-related subjects have been accounting (Chung *et al.*, 1992), business ethics (Ma *et al.*, 2012; Talukdar, 2011), business and management education (Arbaugh and Hwang, 2015), corporate social responsibility (De Bakker *et al.*, 2006), dynamic capabilities in strategic management (Vogel and Güttel, 2013), mergers and acquisitions (Ferreira *et al.*, 2014), global strategy (Peng and Zhou 2006), supply chain management (Feng *et al.*, 2017), and university–industry–state collaboration (Abramo *et al.*, 2009; Marsilio *et al.*, 2011). The most studied subjects (≥ 3 documents) have been entrepreneurship (Merigó and Yang, 2017; Rey-Martí *et al.*, 2016; Wallin, 2012), marketing (Baumgartner, 2010; Fetscherin and Heinrich, 2015; Kim and McMillan, 2008), innovation (Lazarrotti *et al.*, 2011; Randhawa *et al.*, 2016; Yeo *et al.*, 2015), and tourism (Koseoglu *et al.*, 2016; Ruhanen *et al.*, 2015). Second, the most studied economic sector (≥ 3 documents) has been the pharmaceutical industry (Koenig, 1983; Narin and Rozek, 1988). This is predictable, as studies on patent citations are commonly conducted to measure the industry's knowledge production and technological impact. Third, Bib-BMA have examined specific journals such as *Family Business Review* (Casillas and Acedo, 2007), *Journal of Product Innovation Management* (Durisin *et al.*, 2010), *Knowledge-Based Systems* (Cobo *et al.*, 2015), *Harvard Business Review* (Schulz and Nicolai, 2015), *International Small Business Journal* (Volery and Mazzarol, 2015) and *Journal of Emerging Technologies* (O'Leary, 2009). These studies aimed to measure the productivity and impact of researchers, journals, business schools, and institutions (mostly universities); to map the social capital of authors and institutions (through co-authorship) and the intellectual structure of the field (through co-citations or bibliographic coupling); to identify consolidated or trending themes; and to restate bibliometric laws (*e.g.* Bradford's law or Lotka's law).

The study conducted by Podsakoff *et al.* (2008) must be analyzed in detail. This aimed to identify the universities and scholars that had the greatest impact and its causes in the field of management from 1981 to 2004. The authors found that only a few universities and scholars accounted for the majority of the citations; university size, the number of PhDs awarded, research expenditure, and endowment assets had the biggest impact on university publications, while total number of publications, years in the field, graduate school reputation, and editorial board membership had the biggest effect on scholars' citations. It is important to note that only 15 universities from outside the USA and none from Ibero-America were ranked in the 100 most cited universities.

On the other hand, the Spanish/Portuguese-language Bib-BMA literature has focused on two main areas: BMA-related topics and specific journals. First, the main BMA-related subjects that were identified were accounting (Moya and Prior, 2008), business process management theory (Iritani *et al.*, 2015), corporate governance (Flórez-Parra *et al.*, 2014) and entrepreneurship (Arias *et al.*, 2016; Servantie *et al.*, 2016). An emergent subject that was not found in the English-language literature was women's access to management positions (Selva *et al.*, 2011). Second, specific journals were studied such as *Revista Europea de Dirección y Economía de la Empresa* (Lamazaresa and Chicónb, 2012). These studies' objectives were similar to those

mentioned in the English-language review, hence, to determine *who published and where* common methodologies and mapping of emerging themes.

Considering the developments of previous studies, this study would contribute in six fronts, namely: a regional-focus in Ibero-America; to diminish the disengagement from authors, journals, and universities/business schools from the Global-South (plus Spain and Portugal); analyzing the presence of business schools with international accreditation (*i.e.*, the Association to Advance Collegiate Schools of Business [AACSB]); defining the status of the most influential institutions in the region, be they private, public or multilateral, and their effect on Field-Weighted Citation Impact, authors' h-index, documents published, journals' h-index, leading authors, and open access (OA); mapping the current state of the use of OA journals; and making available an OA database to perform replications or conduct further studies in response to recent requests from the scientific community (Aarts *et al.*, 2015).

3 Methodology

3.1 Sample countries

Table 1 presents the sample of countries and codes.

Table 1 Sample countries		
#	Country	Code
1	Argentina	AR
2	Bolivia	BO
3	Brazil	BR
4	Chile	CL
5	Colombia	CO
6	Costa Rica	CR
7	Cuba	CU
9	Dominican Republic	DO
8	Ecuador	EC
10	El Salvador	SV
12	Guatemala	GT
13	Honduras	HN
14	Mexico	MX
15	Nicaragua	NI
16	Panama	PA
17	Paraguay	PY
18	Peru	PE
19	Portugal	PT
20	Puerto Rico	PR
11	Spain	ES
21	Uruguay	UY
22	Venezuela	VE

This table presents the sample of countries and their abbreviation codes. Source: International Organization for Standardization – ISO 3166 (n.d.).

3.2 Data sources

Two of the most popular data sources for scientometrics studies are Clarivate Analytics' Web of Science (WoS) and Elsevier's Scopus. Scopus was selected for the following reasons: institutional access; greater journal coverage (Scopus: 20.346 journals vs. WoS: 13.605 [149% more journals]); greater social sciences coverage (Scopus: $\approx 25\%$ vs. WoS: $\approx 15\%$ as a proportion of Ulrich's periodicals directory); greater coverage of both articles and journals published by countries in Ibero-America (e.g., Spain and Brazil); overlapping coverage ($\approx 84\%$ of active titles in WoS were also indexed in Scopus); and the recent implementation of the Field-Weighted Citation Impact (FWCI) (Gavel and Iselid, 2008; Mongeon and Paul-Hus, 2016). The starting point for the analysis was fixed as 1996 because Scopus has only been adding cited references since then (Scopus, 2015). The AACSB website provided information on accredited business schools. The data used in this study can be accessed at [Link will be displayed if article accepted] or by using the QR code displayed below [QR code will be displayed if article accepted].

3.3 Subject area categories

Table 2 presents the subject area of BMA and its categories.

Table 2 Categories within the subject area of BMA

Subject categories
Accounting
Business and International Management
Business, Management and Accounting
Industrial Relations
Management Information Systems
Management of Technology and Innovation
Marketing
Organizational Behavior and Human Resource Management
Strategy and Management
Tourism, Leisure and Hospitality Management

This table presents the subject area of BMA and its categories established by SCImago. Source: SCImago (n.d.).

3.4 Variables

Table 3 presents the 18 variables used to conduct the bibliometric outlook.

Table 3 Variables used in the study

1	Country affiliation	The country in which the organization was located where the authors were affiliated at the time the document was published. Source: Scopus
2	Type of document	Whether the document was an article, a book, a book chapter, or a conference paper. Source: Scopus
3	Open access	Whether the document is available via open access. Scopus
4	Citations	Number of citations in a given document. Source: Scopus
5	Field-Weighted Citation Impact (FWCI)	Indicates how the number of citations received by a document compares with the average number of citations

received by all other similar publications. The FWCI for a set of N publications is defined as:

$$FWCI = \frac{1}{N} \sum_{i=1}^N \frac{c_i}{e_i},$$

(1)

Where c_i represents citations received by publication i and e_i represent the number of citations that is expected to be received by all similar publications in the publication year and the following 3 years. Thus, a FWCI of 1.00 indicates that the publication has been cited exactly as would be expected based on the global average for similar publications, an FWCI >1.00 indicates that the publication has been cited more than would be expected (e.g. 2.20 means that it has been cited 120% more than the global average), and an FWCI of <1.00 indicates that the publication has been cited less than would be expected (e.g. 0.75 means that it has been cited 25% less than the global average). Source: Scopus

6	Authors	The number of authors of a given document. Source: Scopus
7	Year	Year in which a document was published. Source: Scopus
8	Name	Name of the first author (in order of appearance) with at least one affiliation to any organization from Ibero-America. Source: documents
9	Lead author	Whether the author with at least one affiliation to any organization from Ibero-America figured as the lead author. Source: Scopus
10	Documents	The number of documents published in Scopus by the author with at least one affiliation to any organization from Ibero-America. Source: Scopus
11	Author h-index	H-index of the author with at least one affiliation to any organization from Ibero-America. An entity, whether an author or a journal, has an index of h if h of the author's or journal's papers have at least h citations each and the remaining papers have $\leq h$ citations each (Hirsch, 2005). For instance, Hirsch has an h-index of 55 (Scopus, 2018), which means that his 55 most cited papers have each received at least 55 citations. Source: Scopus
12	Journal h-index	H-index of the journal in which the article was published. Source: SCImago
13	Affiliation	Name of the organization with which a given author was affiliated at the time a given document was published. Source: Scopus
14	Status	Status of the organization where a given author published a given document in Scopus (whether private or public). Source: institutional websites
15	Title	Title of the document analyzed. Source: Scopus
16	Keywords	Keywords of the document analyzed. Source: Scopus

17	Source name	Name of the source (e.g. journal, proceedings, or book) in which the document was published. Source: Scopus
18	AACSB accreditation	Whether the business school with which the author was affiliated is currently accredited by the AACSB. AACSB accreditation is seen as one of the “Triple Crown” of accreditations along with the Association of MBAs (AMBA) and the European Quality Improvement System (EQUIS). Since its foundation, the AACSB has been virtually unchallenged in its accreditation activities, and its standards are acknowledged as some of the most rigorous and selective in business education (Durand, McGuire 2005). Both research output and impact are included in the AACSB’s standards (Standard 2: Intellectual contribution, impact, and alignment with the mission statement) (AACSB, 2017a, p. 18). So by considering the AACSB, we added research impact and output amid a broader frame of excellence in management education. Source: AACSB website.

This table presents the 18 variables used in this study and their respective definition/description and sources. Source: Author.

4 Results

4.1 Regional and countries overview 1996-2017

The increase of documents published by researchers from Ibero-America in BMA has been remarkable, with a total of 51,082 documents published during 1996-2017. The total number of publications per year has also increased significantly, rising from 235 documents in 1996 to 6,564 in 2017 (Figure 1). There were two outliers: Spain and Brazil (Figure 2). Both countries published 33,471 documents during 1996-2017 (65% of the total). Indeed, a *Pareto distribution* emerged whereby Spain, Brazil, Portugal, and Mexico (20% of the countries) published 43,233 documents (84% of the total).

Figure 1 Total number of BMA publications by year 1996-2017. Source: Scopus (2017)

Figure 2 Top eight countries using a log-5 scale 1996-2017. Source: Scopus (2017)

4.2 Publication overview

It was planned to analyze the 10-most cited documents from each of the 22 countries of Ibero-America (a total of 220 documents) but the sample was reduced to 208 because documents from Honduras, Paraguay, and El Salvador did not have at least one citation. The most cited documents were paywalled (94%) English-language (78%) articles (75%). Other types of publications were book chapters (15%), conference proceedings (9%), and books (1%). The second and third most common languages were Spanish (17%) and Portuguese (5%), which was something of a paradox in a Spanish-Portuguese dominated region. Only 6% of the documents were OA.

The journal *Espacios* was the *most desired* journal in the region as researchers from 13 out of 22 countries had published at least one article. This is critical in countries such as Brazil (2,896 articles), Colombia (464) and Venezuela (101). The data also showed that this journal has published +4,500 documents since 2007, whereas the *Academy of Management Journal*, a top-tier journal, has published only 1,636 documents since 1975.

4.3 Citations and h-index overview

The average citations (137.2), FWCI (5.3), year (2007.6), and journal h-index (88.44) and complementary descriptive statistics and correlations are presented in the Annex. The top five countries in terms of document citations were Spain (745), Portugal (437), Brazil (315.7), Mexico (286.4), and Chile (242.4). The top five in terms of FWCI were Spain (20.8), Colombia (20.4), Mexico (16.1), Portugal (11.7), and Brazil (7.6). Regarding the top five countries in terms of their journal h-index, Chile (133.6), Uruguay (131.6), Bolivia (125.5), El Salvador (124.2), and Portugal (123.1) had the most documents published in journals with a high h-index. It was found that the methodological strategies of the 50 most cited documents were either quantitative (44%), theoretical (35%), qualitative approach (13%) or mixed (8%).

Figure 3 shows a skewed citations distribution, as only 1% of the documents (n=2) had between 951 and +1,000 citations, whereas 48% (n=94) had between 1 and 50 citations. The citations distribution is being skewed daily. During a 2-week period (end of January and beginning of February 2018), 17 of the 20 most cited documents received 2.2 citations on average. The outlier article among this group was: “*A new criterion for assessing discriminant validity in variance-based structural equation modeling*”, which received five citations (+1.3%).

Figure 3 Numbers of citations and documents. Source: Scopus (2017)

4.4 Title text-mining analysis

A text analysis of the documents' titles was conducted to pinpoint common themes that have been under the research lens in the region. This approach has been widely used in Bib-BMA (Kostoff *et al.*, 2001). Voyant Tools was implemented: an open-source Web-based text reading and analysis environment that allows to investigate patterns of words/concepts and to explore and visualize large bodies of text systematically, tasks that would be difficult to perform manually (Sinclair and Geoffrey, 2016). Two analyses were conducted: frequency of terms (*i.e.*, the number of times a word is mentioned in a body of work), and collocation graphs. A collocation graph is a network of terms with higher frequency and proximity. The keywords are shown in dark gray and the proximity words are shown in light gray. Table 4 shows the results for the Top five frequency of terms and Figure 4 shows the collocation graph.

Table 4 Frequency of terms

Number of words		2,299
Words	Frequency	Lead document (most cited) in which the word is mentioned
<i>based</i>	14	<i>An empirical comparison of the efficacy of covariance-based and variance-based SEM</i>
<i>analysis</i>	13	<i>Non-additivity in portfolios of exploration activities: A real options-based analysis of equity alliances in biotechnology</i>
<i>management</i>	13	<i>Quality management re-visited: A reflective review and agenda for future research</i>
<i>social</i>	12	<i>Corporate social responsibility theories: Mapping the territory</i>

<i>model</i>	10	<i>Common method bias in regression models with linear, quadratic, and interaction effects</i>
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This table presents the frequency of terms extracted from the text-analysis from the titles of the documents of the sample. The frequency of terms is the number of times a word is mentioned in a body of text. Source: Scopus (2017) using Voyant Tools (2016)

Figure 4 Collocation graph. Source: Scopus (2017) using Voyant Tools (2016)

4.5 Author overview

The average number of authors per paper is 4.34. In 48% of the papers, authors with an affiliation in the region figured as the lead author. The average of documents and h-index were 23.6 and 7.36 respectively. A document worth mentioning in terms of the number of authors is *Culture-specific and cross-culturally generalizable implicit leadership theories: Are attributes of charismatic/transformational leadership universally endorsed?* This document has more than twenty authors from countries around the world. The top five countries by the average number of authors were Chile (8), Bolivia (7.2), Brazil (6.9), Guatemala (6.2), and Paraguay (6.2). Spain, Paraguay, Colombia, and Cuba were ranked equal first in terms of lead authors (70%) followed by Nicaragua (60%). The most productive authors in terms of the average number of documents published in Scopus were from Panama (81.3), Spain (54.9), Chile (51.7), Mexico (49.8), and Portugal (36.6). This landscape changed abruptly in relation to the average h-index of authors, where the top five countries were Nicaragua (19.9), Paraguay (17.8), Panama (15.8), Chile (14.6) and Uruguay (11.3). Figure 5 shows a skewed distribution in relation to documents and authors, as 1% (n=2) of the authors had published between 340 and 380 documents, while 55% (n=114) had published between one and ten documents.

Figure 5 Numbers of documents and authors. Source: Scopus (2017)

4.6 Status and accreditation overview

Fifty-three percent of the organizations were private, while 47% were public. In the case of business schools, only 32% are currently accredited by the AACSB. Private organizations dominated BMA publishing in Peru (100%), Paraguay (90%), Mexico (90%), Costa Rica (80%), and Bolivia (80%). Conversely, the public sector dominated in Venezuela (100%), Panama (100%), Dominican Republic (78%), Portugal (82%), and Uruguay (70%). The top-ranked countries in terms of having at least one of the authors affiliated with an AACSB-accredited business school were Mexico (80%), Chile (70%), Portugal (70%), Guatemala (60%), and Spain (50%).

4.7 Differences among university status in FWCI, authors' h-index, documents published, journals' h-index, leading authors, and open access.

Four ANOVA (one-way analysis of variance) were conducted in *Stata*. The first was conducted to explore the differences among institutional status on the FWCI (Table 5). There were two groups: group1: private; and group2: public. The results showed that there was not a statistical significance in the FWCI at the $p < .05$ [$F(1, 202) = .00, p = .96$]. Therefore, public and private institutions did not differ significantly in terms of FWCI.

Table 5 ANOVA results of FWCI for status

Source	SS	df	MS	F	Prob > F
Between groups	.410612446	1	.410612446	0.00	0.9615
Within groups	35536.1704	202	175.921636		
Total	35536.581	203	175.057049		

This table presents the ANOVA for exploring the differences among institutional status on the FWCI. Source: Scopus (2017).

The second ANOVA was conducted to explore the differences among institutional status on the authors' h-index (Table 6). Considering the same two groups, there was not a statistical significance at the $p < .05$ in the authors' h-index scores [$F(1, 202) = .03, p = .86$]. Consequently, public and private institutions did not differ significantly in terms of authors' h-index.

Table 6 ANOVA results of authors' h-index for status

Source	SS	df	MS	F	Prob > F
Between groups	3.20595044	1	3.20595044	0. 03	0.8615
Within groups	21233.147	202	105.114589		
Total	21236.3529	203	104.612576		

This table presents the ANOVA for exploring the differences among institutional status on authors' h-index. Source: Scopus (2017).

The third ANOVA was conducted to explore the differences among institutional status on the number of documents published by author (Table 7). Considering the same two groups, there was not a statistical significance at the $p < .05$ in the number of documents published [$F(1, 202) = .66, p = .42$]. Then, public and private institutions did not differ significantly in terms of the number of documents published.

Table 7 ANOVA results of documents published for status

Source	SS	df	MS	F	Prob > F
Between groups	1619.35791	1	1619.35791	0. 66	0.4175
Within groups	495623.48	202	2453.58159		
Total	497242.838	203	2449.47211		

This table presents the ANOVA for exploring the differences among institutional status on the number of documents published by author. Source: Scopus (2017).

And the fourth ANOVA was conducted to explore the effect of institutional status on journal h-index (Table 8). Considering the same two groups, there was not a statistical significance at the $p < .05$ in the journal h-index score [$F(1, 202) = .66, p = .42$]. In consequence, public and private institutions did not differ significantly in terms of the number of documents published.

Table 8 ANOVA results of journal h-index for status

Source	Analysis	of Variance		F	Prob > F
	SS	df	MS		
Between groups	105.701105	1	105.701105	0. 04	0.8433
Within groups	531619.686	197	2698.57709		
Total	531725.387	198	2685.48175		

This table presents the ANOVA for exploring the differences among institutional status on journal h-index. Source: Scopus (2017).

Logistic regression was applied to explore the effect of institutional status on leading authors, AACSB accreditation, and documents in OA (Table 9). Results analysis showed that the status predicted significantly only whether the institution was accredited by the AACSB [$\chi^2(1, N = 204) = 3.15, p = .00$].

Table 9 Logistic regression results for institution status as an independent variable, and lead author, AACSB accreditation and documents in OA as dependent variables

<i>Dependent variables</i>					
Leading Author		AACSB		Open Access	
<i>Coef.</i>	<i>Std. Err.</i>	<i>Coef.</i>	<i>Std. Err.</i>	<i>Coef.</i>	<i>Std. Err.</i>

	-.22	(.28)	.94	(.31)	-1.15	(.69)
Constant	-.04	(.20)	-1.28	(.25)	-2.39	(.37)
<i>N</i>	204		204		204	
LR chi2	.61		9.27		3.15	
Pseudo R ²	.0022		.04		.036	
<i>Prob > chi2</i>	.44		.00*		.07	

This table presents the logistic regression for institution status as an independent variable, and lead author, AACSB accreditation and documents in OA as dependent variables. Source: Scopus (2017). * $p < .05$

5 Discussion

Intellectual output in BMA in Ibero-America has been growing, but it is clear that Spain has been a powerhouse in terms of both productivity and influence. Spain is also the top country in terms of the average number of citations (745) and FWCI (20.8). Business schools in Spain have made a name for themselves, with five being AACSB-accredited. There were also countries in Latin America such as Uruguay (131.6), Bolivia (125.5), and El Salvador (124.2) that had articles published in journals with the highest h-index and with no AACSB-accredited business school. However, despite the fact that authors from Spain are by far the most cited in the region, they are hardly cited in BMA globally. For example, Garriga's (the most cited author in our sample) total number of citations was just 5% of the number of citations of the global-scholar Kathleen Eisenhardt (Stanford University).

The predominant type of publication is the article, although the majority of the most discussed BMA studies are secured behind a paywall. Researchers, institutions, students, practitioners, and policy-makers without the significant resources required to gain access to the *oligopoly of academic publishers in the digital era* (Larivière *et al.*, 2015) are being excluded from the intellectual contributions in the subject. However, there is no lack of these at present. Forty-eight percent of the journals in which researchers from the region have had articles published are OA, *Espacios*, the most desired journal for BMA publishing, among them. Now, besides being OA, *Espacios* offers other advantages such as the most cost-efficient peer-review systems. Ten out of the 32 articles published in vol. 39, No. 2 of 2018 were analyzed. The average number of words per article was 4,500 and the average time elapsed from manuscript submission to publication was 1 month or 6 days in two cases. Authors must pay a US\$150 fee, of which US\$80 is refunded if the article is rejected. However, the discussion should not be restricted to the prevalence of OA journals, but which journals have reached high quality/ethical standards or should be added to the *Beall's List*. Alternatives proposed by experts such as Isidro Aguillo (Webometrics Ranking Web editor) include the creation of an OA super-journal (e.g. *Science* or *Nature*) for the region, crowdfunded by national science and technology institutions.

Regarding language, "global business speaks English" (Neeley, 2012). However, both Spanish and Portuguese are not far behind as hub languages (Ronen *et al.*, 2014). In terms of methodology, a question that arises is whether the most discussed documents are being used as learning material. Considering that the most popular pedagogical strategy in business schools is the case study (*i.e.*, a qualitative approach) it was queried whether quantitative or theoretical studies, which were the most popular methods among the sample (79%), are being discussed beyond the BMA research environment.

As Podsakoff *et al.* (2008) argued, a highly skewed distribution of documents and citations also was found, whereby a small percentage of documents (1%) were responsible for the majority of citations (951–1,000). Moreover, this distribution is becoming increasingly skewed each week. This is another evidence of the "Matthew effect" in science proposed by Merton (1968). The content analysis identified the most discussed topics and the most cited papers within each topic, but there were some notable absences. For instance, entrepreneurship is a topic on the international agenda (e.g., The Oslo Agenda since 2006 in Europe), but it is still neither included in the BMA subcategories nor among the most cited documents in the region.

The advance in knowledge now relies more on *packs* than *lone wolves*. The average number of authors per document has gradually increased from 2.7 in 2000 to 4.2 in 2015, an average annual growth rate of 10%. The regional average is over 2.8 which was the average in the field of management (Acedo et al., 2006). This reflects a trend toward global scientific collaboration (Wuchty et al., 2007).

In relation to document and author distribution, it was found additional support for Lotka's law (*i.e.*, the number of authors publishing n papers is about $1/n^c$ that of those publishing one paper), as just 1% of authors had published between 340 and 380 documents. As mentioned earlier, a similar distribution is evident in relation to document citations (Talukdar, 2011; López *et al.*, 2016). Institutional status had no effect on neither the FWCI, authors' h-index, authors' documents output, journals' h-index, authors' leadership nor AO publications, but it did in AACSB accreditation. This finding supports Podsakoff *et al.* (2008) claim on the effects of research expenditures and endowment assets on university publications impact. Public universities and business schools regularly suffer budget cuts which constraint their capacity to maintain research excellence and reputation (QS, 2013), a vital factor for achieving international accreditations such as AACSB.

The impact factor is not free of controversy neither from its author nor the publishing elite (Callaway, 2016). However, the paradigm persists among management scholars. A report published by the Academy of Management (2017) found that the two most important indicators of scholarly impact are scholarly articles in top-tier journals and scholarly citations in others' research. The report also states that the least important audience for scholars were students, which seems linked with the low positioning of teaching materials (*e.g.*, case-studies) among out sample. As a final remark, non-traditional metrics, or altmetrics (*i.e.*, citations on Wikipedia, mentions in blogs or on Twitter [Altmetrics, 2018]) are being seriously considered and robustly examined by bibliometric and scientometrics scholars (Hammarfelt, 2014).

6 Conclusions

BMA research in Ibero-America is passing through a throbbing period. It has achieved its highest overall level of output in more than 20 years, but closer examination reveals a small number of powerhouses in terms of production and influence (*i.e.*, Spain, Brazil, Portugal, and Mexico). A detailed examination of those countries' research policies, incentives, research centers, allies, and business research support programs should help to identify best practice for other countries in a region that exhibits numerous social and historical similarities. The AACSB accreditation standards provide a good benchmark.

These practices should encourage researchers from the region to strengthen their competencies and intrinsic motivation to enter into global discussions without discarding their local relevance (*i.e.*, *glocalizing* research). Hence, it is essential to move away from publishing in the *most desired* journals toward publishing in the *most relevant* journals in BMA. A noteworthy discussion to be given in regional scenarios in this line is the creation of an OA super-journal funded by national science and technology institutions to compete with the top-tier journals. The content analysis showed that several topics on the global agenda (*e.g.*, entrepreneurship and sustainability [UN Global Compact]) have not been discussed in depth in BMA research in the region. It is also crucial that those studies be used as learning material and discussed beyond traditional academic spaces. The evident advantage of private over public business schools in terms of infrastructure, recruitment of researchers, and research funding to pursue international accreditations and visibility, increase the already existing gap between private and public institutions in Ibero-America. Public institutions have an opportunity in the underexploited theatre of the (high-quality) AO. Besides the traditional measures for monitoring impact, studies on altmetrics seem to consider a broader set of contexts in which BMA researchers also could debate and disseminate their original research and insights.

The results obtained in this study provide a comparative analysis between countries which allows more inclusive criteria for those with low production or impact in BMA. The OA database also allows researchers

and practitioners to replicate or triangulate the data in further bibliometric studies, to locate influential researchers or organizations within countries, to identify future research allies, to study whether research activities have been focused on the private sector, and to identify the most influential BMA journals in the region. National science and technology institutions should also measure how close their countries are to other countries in terms of output and impact. Critical topics that have barely been discussed thus far in relation to the region could be identified as promising new research fields.

This study has two main limitations. Whilst Scopus is more inclusive than WoS in several BMA-related aspects, public platforms such as Google Scholar and Dimensions, as the latter is gaining maturity, have been showing its overlapping and broad reach by comparing with the former two. By starting the analysis in 1996, accuracy over completeness was chosen. A considerable amount of documents published prior to 1996 were not considered for this analysis. Future studies could compare the regional differences in terms of BMA subjects between Scopus and WoS and other databases such as Google Scholar and Dimensions, specifically by studying a greater time span (*i.e.*, looking at data from prior to 1996). In addition, methodological appraisals such as co-authorship or co-citation analysis, and altmetrics would amplify the understanding of the researchers' social capital and impact. Comparative analyses considering additional groups of countries such as Eastern Europe or Asia would help to identify the framework in which the intellectual production from Ibero-America has been finding its place in the global dialogue in relation to BMA.

7 References

- Acedo, F., Barroso, C., Casanueva, C., Galán, J., 2006. "Co-Authorship in Management and Organizational Studies: An Empirical and Network Analysis". *J. of Management Stud.* 43(5), 957–983.
- Association to Advance Collegiate Schools of Business (AACSB), 2017a. Eligibility procedures and accreditations standards for business accreditation. Available at: <https://goo.gl/59VXkm> (accessed 23 June 2018).
- AACSB, 2017b. AACSB-accredited business schools & universities. Available at: <https://goo.gl/ofn9EC> (accessed 23 June 2018).
- Aarts, A. A., Anderson, J. E., Anderson, C. J., Attridge, P. R., Attwood, A., Axt, J., ... Zuni, K., 2015. "Estimating the reproducibility of psychological science". *Science* 349(6251), aac4716.
- Abramo, G., D'Angelo, C. A., Di Costa, F., Solazzi, M., 2009. "University–industry collaboration in Italy: a bibliometric examination". *Technovation* 29(6–7), 498–507.
- Altmetrics, (2018). An introduction. Available at: <https://goo.gl/zcZ1Di> (accessed 23 June 2018).
- Arbaugh, J. B., Hwang, A., 2015. "What are the 100 most cited articles in business and management education research, and what do they tell us?". *Organization Management J.* 12(3), 154–175.
- Arias, A. V., Restrepo, I. M., Restrepo, A. M., 2016. "Intención emprendedora en estudiantes universitarios: Un estudio bibliométrico [Entrepreneurial intention in university students: A bibliometric study]", *Intang. Cap.*, 12 (4), 881–922.
- Baumgartner, H., 2010. "Bibliometric reflections on the history of consumer research". *J. of Consumer Psychology*, 20(3), 233–238.
- Bornmann, L., 2012. "The Hawthorne effect in journal peer review". *Scientometrics* 91(3), 857–862.
- Callaway, E., 2016. "Beat it, impact factor! Publishing elite turns against controversial metric". *Nature* 535, 210–211.
- Casillas, J. C., Acedo, F. J., 2007. "Evolution of the intellectual structure of family business literature: a bibliometric study of FBR". *Family Bus. Rev* 20(2), 141–162.
- Chung, K. H., Pak, H. S., Cox, R. A. K., 1992. "Patterns of research output in the accounting literature: a study of the bibliometric distributions". *Abacus* 28(2), 168–185.
- Cobo, M. J., Martínez, M. A., Gutiérrez-Salcedo, M., Fujita, H., Herrera-Viedma, E., 2015. "25 years at Knowledge-Based Systems: a bibliometric analysis". *Knowl.-Based Systems* 80, 3–13.

- De Bakker, F. G. A., Groenewegen, P., Den Hond, F., 2006. "A research note on the use of bibliometrics to review the corporate social responsibility and corporate social performance literature". *Bus. and Society* 45(1), 7–19.
- De Mascena, K. M. C., Figueiredo, F. C., Boaventura, J. M. G., 2013. "Clusters e APLs: análise bibliométrica das publicações nacionais no período de 2000 a 2011 [Clusters and LPA's: bibliometric analysis of national publications from 2000 to 2011]". *RAE Revista de Administracao de Empresas* 53(5), 454–468.
- Durand, R., McGuire, J., 2005. "Legitimizing agencies in the face of selection: the case of AACSB". *Organizational Stud.*, 26(2), 165–196.
- Durisin, B., Calabretta, G., Parmeggiani, V., 2010. "The intellectual structure of product innovation research: a bibliometric study of the journal of product innovation management, 1984-2004". *J. of Product Innovation Management* 27(3), 437–451.
- Feng, Y., Zhu, Q., Lai, K.-H., 2017. "Corporate social responsibility for supply chain management: a literature review and bibliometric analysis". *J. of Clean. Production*, 158, 296–307.
- Ferreira, M. P., Santos, J. C., de Almeida, M. I. R., Reis, N. R., 2014. "Mergers & acquisitions research: a bibliometric study of top strategy and international business journals, 1980–2010". *J. of Bus. Res.* 67(12), 2550–2558.
- Fetscherin, M., Heinrich, D., 2015. "Consumer brand relationships research: a bibliometric citation meta-analysis". *J. of Bus. Res.* 68(2), 380–390.
- Flórez-Parra, J. M., López-Pérez, M. V., López-Hernández, A. M., 2014. "Gobierno corporativo y sector público: Un estudio bibliométrico en las principales revistas ISI [Corporate governance and the public sector: a bibliometric study of the principal ISI journals]". *Innovar* 24(51), 79–98.
- Gavel, Y., Iselid, L., 2008. "Web of Science and Scopus: a journal title overlap study". *Online Inf. Rev.* 32(1), 8–21.
- Haley, U., Page, M., Pitsis, T., Rivas, J., Yu, K., 2017. *Measuring and achieving scholarly impact. The Academy of Management, Morgantown.*
- Hammarfelt, B., 2014. "Using altmetrics for assessing research impact in the humanities". *Scientometrics* 101(2), 1419–1430.
- Hirsch, J., 2005. "An index to quantify an individual's scientific research output". *PNAS* 102(46), 16569–16572.
- International Organization for Standardization. n.d. Country codes – ISO 3166. Available at: <https://goo.gl/HA6M9R> (accessed 23 June 2018).
- Kim, J., McMillan, S. J., 2008. "Evaluation of internet advertising research: a bibliometric analysis of citations from key sources". *J. of Advertising* 37(1), 99–112.
- Koenig, M. E. D., 1983. "A bibliometric analysis of pharmaceutical research". *Res. Policy* 12(1), 15–36.
- Koseoglu, M. A., Rahimi, R., Okumus, F., Liu, J., 2016. "Bibliometric studies in tourism". *Annals of Tourism Res.* 61, 180–198.
- Kostoff, R. N., Toothman, D. R., Eberhart, H. J., Humenik, J. A., 2001. "Text mining using database tomography and bibliometrics: a review". *Technological Forecasting and Soc. Change* 68(3), 223–253.
- Larivière, V., Haustein, S., Mongeon, P., 2015. "The oligopoly of academic publishers in the digital era". *PLOS ONE* 10(6), e0127502.
- Lazzarotti, F., Dalfovo, M. S., Hoffmann, V. E., 2011. "A bibliometric study of innovation based on Schumpeter". *J. of Technology Management and Innovation* 6(4), 121–135.
- Ma, Z., Liang, D., Yu, K.-H., Lee, Y., 2012. "Most cited business ethics publications: mapping the intellectual structure of business ethics studies in 2001–2008". *Bus. Ethics* 21(3), 286–297.
- Mapping Scientific Excellence, 2018. *Mapping scientific excellence in business, management and accounting.* Available at: <https://goo.gl/VVKgcL> (accessed 23 June 2018).
- Marsilio, M., Cappellaro, G., Cuccurullo, C., 2011. "The intellectual structure of research into PPPS: a bibliometric analysis". *Public Management Rev.* 13(6), 763–782.

- Merigó, J. M., Yang, J.-B., 2017. "A bibliometric analysis of operations research and management science". *Omega* 73, 37–48.
- Merton, R., 1968. "The Matthew effect in science". *Science* 159(3810), 56–63.
- Mongeon, P., Paul-Hus, A., 2016. "The journal coverage of Web of Science and Scopus: a comparative analysis". *Scientometrics* 106(1), 213–228.
- Moya, S., Prior, D., 2008. "¿Quién publica en las revistas Españolas de contabilidad? Análisis bibliométrico del periodo 1996-2005 [Who publishes in Spanish accounting journals? A bibliometric analysis 1996–2005]". *Revista Espanola de Financiacion y Contabilidad* 37(138), 353–374.
- Narin, F., Rozek, R. P., 1988. "Bibliometric analysis of U.S. pharmaceutical industry research performance". *Res. Policy* 17(3), 139–154.
- Neeley, T., 2012. "Global business speaks English". *Harvard Business Review* 90(5), 116–124.
- O'Leary, D. E., 2009. "The ten most-cited papers in Journal of Emerging Technologies in Accounting: the first five years". *J. of Emerg. Technologies in Account.* 6(1), 1–3.
- Peng, M. W., Zhou, J. Q., 2006. "Most cited articles and authors in global strategy research". *J. of International Management* 12(4), 490–508.
- Podsakoff, P. M., MacKenzie, S. B., Podsakoff, N. P., Bachrach, D. G., 2008. "Scholarly influence in the field of management: a bibliometric analysis of the determinants of university and author impact in the management literature in the past quarter century". *J. of Management* 34(4), 641–720.
- Quacquarelli Symonds (QS), 2013. US Universities in the Rankings: Public Versus Private. Available at: <https://goo.gl/rAXjke> (accessed 23 June 2018).
- Randhawa, K., Wilden, R., Hohberger, J., 2016. "A bibliometric review of open innovation: setting a research agenda". *J. of Product Innovation Management* 33(6), 750–772.
- Rey-Martí, A., Ribeiro-Soriano, D., Palacios-Marqués, D., 2016. "A bibliometric analysis of social entrepreneurship". *J. of Business Research* 69(5), 1651–1655.
- Ronen, S., Gonçalves, B., Hu, K., Vespignani, A., Pinker, S., Hidalgo, C., 2014. "Links that speak: the global language network and its association with global fame". *PNAS* 111(52), ES1616–ES1622.
- Ruhanen, L., Weiler, B., Moyle, B. D., McLennan, C.-L. J., 2015. "Trends and patterns in sustainable tourism research: a 25-year bibliometric analysis". *J. of Sustainable Tourism* 23(4), 517–535.
- Schulz, A.-C., and Nicolai, A. T., 2015. "The intellectual link between management research and popularization media: a bibliometric analysis of the Harvard Business Review". *Academy of Management Learning and Education* 14(1), 31–49.
- SCImago, n.d. Journal ranking. Available at: <https://goo.gl/S7GKXX> (accessed 23 June 2018).
- Scopus, 2015. Breaking the 1996 barrier: Scopus adds nearly 4 million pre-1996 articles and more than 83 million references. Available at: <https://goo.gl/GuA7Lt> (accessed 23 June 2018).
- Scopus, 2018. Scopus. Available at <https://www.scopus.com/> (accessed 23 June 2018).
- Selva, C., Sahagún, M. A., Pallarès, S., 2011. "Estudios sobre trayectoria profesional y acceso de la mujer a cargos directivos: Un análisis bibliométrico [Studies on careers and women's access to management positions: a bibliometric analysis]. *Revista de Psicología Del Trabajo y de Las Organizaciones* 27(3), 227–242.
- Servantie, V., Cabrol, M., Guieu, G., Boissin, J.-P., 2016. "Is international entrepreneurship a field? A bibliometric analysis of the literature (1989–2015)". *J. of International Entrepreneurship* 14(2), 168–212.
- Sinclair, S., Geoffrey, R., 2016. Voyant tools. Available at: <http://voyant-tools.org/> (accessed 23 June 2018).
- Smith, D. R., 2012. "Impact factors, scientometrics and the history of citation-based research". *Scientometrics* 92(2), 419–427.
- Talukdar, D., 2011. "Patterns of research productivity in the business ethics literature: insights from analyses of bibliometric distributions". *J. of Bus. Ethics* 98(1), 137–151.
- Tsay, M.Y., Ma, S.S., 2003. "The nature and relationship between the productivity of journals and their citations in semiconductor literature". *Scientometrics* 56(2), 201–222.

- United Nations Educational, Scientific and Cultural Organization (UNESCO), 2017. Women in science. Available at: <https://goo.gl/AQHdQp> (accessed 23 June 2018).
- Vogel, R., Güttel, W. H., 2013. "The dynamic capability view in strategic management: a bibliometric review". *International J. of Management Reviews* 15(4), 426–446.
- Volery, T., Mazzarol, T., 2015. "The evolution of the small business and entrepreneurship field: a bibliometric investigation of articles published in the *International Small Business Journal*". *International Small Bus. J.* 33(4), 374–396.
- Wallin, M. W., 2012. "The bibliometric structure of spin-off literature". *Innovation: Management, Policy and Practice* 14(2), 162–177.
- Wuchty, S., Jones, B. F., Uzzi, B., 2007. "The increasing dominance of teams in production of knowledge". *Science* 316(5827), 1036–1039.
- Yeo, W., Kim, S., Park, H., Kang, J., 2015. "A bibliometric method for measuring the degree of technological innovation". *Technological Forecasting and Soc. Change* 95, 52–162.
- Zupic, I., Čater, T., 2015. "Bibliometric methods in management and organization". *Organizational Res. Methods* 18(3), 429–472.

Annex

	Mean	SD	Citations	FWCI	Year	Authors	Lead A.	Docs	Author h-Index	Status	OA	Journal h-Index	AACSB
Citations	137,26	207,31	1										
FWCI	5,33	13,254	,323**	1									
Year	2007,68	4,97	-,373**	0,08	1								
Authors	4,34	4,366	0,039	-0,04	0,118	1							
Lead A.	0,48	0,511	-0,03	0,01	-0,03	-,327**	1						
Documents	23,58	49,826	,210**	,157*	-,156*	-0,039	-0,06	1					
Author h-Index	7,36	10,291	,327**	,223**	,186*	-0,077	-0,01	,886**	1				
Status	0,52 (% Priv)	0,501	-0,12	-0,01	0,017	-0,043	-0,03	-0,05	-0,004	1			
OA	0,06 (%OA)	0,238	-0,06	-0,03	0,054	0,092	-0,07	-0,02	-0,019	-0,12	1		
Journal h-Index	88,44	53,543	,333**	0,07	-,138*	-0,042	0,09	-0,01	0,088	-0,04	,175*	1	
AACSB accred.	0,32 (%Accredited)	0,467	,224**	,186**	-,152*	-0,045	0,09	0,07	,157*	,210**	-0,08	,331**	1

Note: **p<0.01 - *p<0.05. Source: author calculation in Stata. Source: Scopus (2018); institutional websites or Google Scholar profiles (2018); SCImago (2018); AACSB (2018).