INNOVATION IN CHINA AND LATIN AMERICA
BIBLIOMETRIC INSIGHTS IN BUSINESS, MANAGEMENT, ACCOUNTING, AND DECISION SCIENCES

TRACK: CHINA AND LATIN AMERICA: BUSINESS AND ECONOMIC ISSUES

KEYWORDS: INNOVATION; MANAGEMENT; CHINA; LATIN AMERICA; BIBLIOMETRICS

TABLES AND FIGURES ARE PRESENTED AS ANNEXES

ABSTRACT

China and Latin America (LATAM) are now key players in global research production. However, bibliometric studies analyzing relationships within the Global South have not been investigated intensively. This study focuses on research on innovation in business, management, accounting (iBM), and decision sciences (DS). The aim of this study is to deepen the understanding of the research dynamics in relation to iBM-DS published by authors affiliated with institutions in China and LATAM using a comparative framework including data from both WoS and Scopus. The findings showed significant differences between the regions regarding journals' citation-dependent measures, and between numbers of authors and journal reputations. China has produced 80% more articles than LATAM over the last five years, and public universities have been the leading producers. Both regions are far from the current influence of the Global North, and China has focused on research topics such as *commerce* and *industry*, while LATAM has focused on *sustainable development* and *biotechnology*.

1 INTRODUCTION AND RESEARCH BACKGROUND

Goods and knowledge exchange within the Global South (i.e., countries located in Asia, Africa, Latin America (LATAM), and the Caribbean) is becoming increasingly important (Ortiz-Ospina, Beltekian, & Roser, 2018). A sustainable commercial and knowledge exchange agenda in the Global South considers the promotion of inclusive and sustainable industrialization fostered by innovation (UN, 2018). In the context of studies related to management and business, innovation can be understood as "the invention and implementation of a management practice, process, structure, or technique that is new to the state of the art and is intended to further organizational goals" (Birkinshaw et al., 2008, p. 825). Despite the setbacks in certain indicators (e.g., developing regions falling short of the global average of 1.68% of GDP in relation to R&D investment (United Nations, 2019)), research output related to innovation in business and management (iBM) and decision sciences (DS) has been consistently increasing in the Global South (Tollefson, 2018).

Research on iBM in both China and LATAM has resulted in 1,300+ and 1,000+ articles, respectively, from 1996 to 2018 (Scopus, 2018). This substantial research output is important, as research on iBM is related to firms' growth (Rosenbusch, Brinckmann, & Bausch, 2011). For both researchers and practitioners, several concerns questions may arise, such as which are the consolidated research topics? What are the (new) research fronts? Who are the key authors/institutions in the social capital network with which to build strategic alliances? Bibliometric methods such as citation analysis, keyword co-occurrence, and co-citation networks allow us to answer these questions (Zupic & Čater, 2015). To determine this study's background, two streams of literature in bibliometrics/scientometrics were reviewed: comparative studies on iBM and DS, and studies focused on China and LATAM.

Regarding the first stream, studies have identified a consistent increase in China's research output on nanoscience and technology, which has doubled every 2.1 years, surpassing that of the US in 2012 (Kostoff, 2012) but maintaining a low level of citations (Guan & Ma, 2007). Tijssen (2009) argued that research from European pharmaceutical companies was oriented toward the US, rather than their home markets. When analyzing two biotechnology clusters in the UK and Germany, Casper and Murray (2005) found that the networks of scientists from the UK contained a balanced mix of industry and scientific experience, while German scientists were more academy-based. An analysis of 21 disciplines in 34 countries and their revealed comparative advantage conducted by Harzing and Giroud (2014) proposed clustering into five groups: G1 (most populous English-speaking countries, The Netherlands and Israel): social sciences; G2 and G5 (France, Italy, Poland, Hungay, India, Russia and Ukraine): physical sciences; G3 (Germany, Austria, and Switzerland): balanced research profile; and G4 (Asian Tigers, except for Hong Kong and China): engineering. Subsequent studies suggested that the Global South chose to specialize in specific scientific fields to increase the research impact (Confraria, Mira Godinho, & Wang, 2017; de Paulo, Carvalho, Costa, Lopes, & Galina, 2017). Concretely, in the field of technology and innovation management, various studies have identified the intellectual pillars in the field (e.g., dynamic organizations, the innovation process, and knowledge management) (Pilkington & Teichert, 2006) and specific research interests depending on the regions, such as *organization*, *technology strategy*, *new product development*, *design and innovation*, *technology policy*, and *technological acquisition* in developed countries, and *technology policy*, *organization*, *technological acquisition*, *R&D management*, *technological change*, and *technological development* in developing countries (Cetindamar, Wasti, Ansal, & Beyhan, 2009). Choi et al. (2012), pursuing a similar aim, argued that among European countries, the UK has a comparative advantage in *social change*, Spain in *intellectual property*, the Netherlands in *technology policy*, Germany in *entrepreneurship*, and Italy in *technology transfer and commercialization*.

Regarding the second stream of studies focused on China and LATAM, when studying the relationship between science and technology in China, Guan and He (2007) pointed out that patents from sectors such as biotech, pharmaceutics, and organic chemistry cite more scientific papers, whereas patents from sectors such as information and communication technologies, semi-conductors, and optics are more likely to cite other patents. Subsequent analyses focused on the inclusion of technology foresight and road-mapping in national and regional policy design applications in science, technology, and innovation (Li, Chen, & Kou, 2017), and

recommendations for supporting emerging technologies (e.g., the solar cell industry) (L. Huang, Zhang, Guo, Zhu, & Porter, 2014; X. Li, Zhou, Xue, & Huang, 2015). In the case of LATAM, studies have followed a diversified agenda, including Schumpeterian innovation and cooperation (Lazzarotti, Dalfovo, & Hoffmann, 2011; Lopes & De Carvalho, 2012), innovativeness measures (De Carvalho, Cruz, De Carvalho, Duclós, & De Fátima Stankowitz, 2017), industry relationships (Manjarrez, Pico, & Díaz, 2016), business models (Ceretta, Dos Reis, & Da Rocha, 2016), financing of innovation (Padilla-Ospina, Medina-Vásquez, & Rivera-Godoy, 2018), social innovation (Silveira & Zilber, 2017), supply chain management (Tanco, Escuder, Heckmann, Jurburg, & Velazquez, 2018), and citation, publication, and academic–corporate collaboration (Cortés-Sánchez, 2019). Highlighted findings stated worldwide maturity in industrial relations with innovation system players (e.g., academic, scientific, or technological), the Brazilian case highlighted in LATAM; five salient topics in financing innovation (i.e., financial constraints, funding sources, capital structure, venture capital, and financing of technology companies); and the research output in LATAM in relation to supply chain management has been insubstantial from a global perspective in terms of output, citations, publication in top-tier journals, and both international and corporate collaboration. Further investigation revealed extensive use of journals with predatory features, henceforth citations/documents ratio is the lowest of the last decade, documents in which the lead author was affiliated with non-LATAM institutions were significantly more cited on average, and despite the barely noticeable level of academic–corporate collaboration, multinationals and national organism were involved (e.g., central banks).

In summary, bibliometric studies in China and LATAM in the fields of iBM and DS have analyzed knowledge-intensive industries, the Global North–Global South relationship dynamics, technology and innovation management, innovativeness measures, and social and open innovation. Both research streams entail two similarities: The Global North-South relationship dynamics and the use of Web of Science (WoS) as the pervasive data source for peer-reviewed references and citations. Despite the findings presented above, studies analyzing relationships within the Global South using complementary data to WoS have not been investigated with the same intensity. Therefore, this study seeks *to deepen the understanding of the research dynamics in relation to iBM and DS published by authors affiliated with institutions in China and LATAM using a comparative framework including data from both WoS and Scopus*. The rest of this paper is organized as follows: Section 2 presents the

methodology. Section 3 presents the results, which are discussed in Section 4. And Section 5 concludes.

2 METHODOLOGY

2.1 Data

Data were gathered from two sources: WoS and Scopus. The former has historically been the most popular source for bibliometric and scientometric research, while the spotlight has increasingly focused on the latter over the last 15 years (Archambault, Campbell, Gingras, & Larivière, 2009). WoS contains more than 100 million records from 33,000 journals (Clarivate Analytics, 2017). Scopus contains more than 75 million items (i.e., articles, proceedings, and books) published by more than 5,000 publishers and authored by 16 million authors affiliated with more than 70,000 institutions (Scopus, 2019). Comparisons between the two systems conclude that they provide robust and accurate data in relation to the items covered (Amara & Landry, 2012; Mingers & Lipitakis, 2010), with the caveat that Scopus has a wider journal coverage (i.e., Scopus: 20,346 journals vs. WoS: 13,605 journals) in terms of both articles and journals published by countries in Ibero-America (e.g., LATAM, Spain, and Portugal), and a greater social sciences coverage (i.e., Scopus: ≈25% vs. WoS: ≈15%) (Gavel & Iselid, 2008; Mongeon & Paul-Hus, 2016). Table 1 summarizes the search query used in each bibliographic database and the results. More than 300 articles published in the journal *Espacios* were excluded because this journal displays predatory behavior (Beall, 2015; Cortés-Sánchez, 2018a, 2018b). The complete dataset is available via the permanent link and QR code provided at the end of this paper.

[Table 1]

2.2 Methods

Research output, citations, a publishing market overview, and one-way analysis of variance (ANOVA) were used to explore significant differences among regions, authors' social capital, journals' h-index values, and numbers of citations. Co-occurrence and co-citation networks were generated by VOSviewer (van Eck & Waltman, 2010). A co-authorship network is a widely used tool in bibliometric studies. However, in this study, it was replaced by a detailed analysis of the number of authors and differences in journals' citation-related measurements (i.e., the journal impact factor, Eigenfactor, and h-index).

3 RESULTS

3.1 Research output and citations

Table 2 presents the descriptive statistics by region (i.e., China and LATAM) in relation to WoS (i.e., number of authors for each article, journal impact factor and Eigenfactor score, open access, and number of citations) and Scopus (i.e., number of authors for each article, journals' h-index values, open access, and number of citations) variables. The journal impact factor is obtained by dividing the number of citations by the number of articles published by a given journal in the last two years (Garfield, 2015). The Eigenfactor score is a measure of a journals' importance in the scientific community (Bergstrom, West, & Wiseman, 2008). If a journal has an Eigenfactor score of 1.0, it has 1% of the total influence (Eigenfactor.org, 2019). Regarding the h-index, a journal has an h-index score of 20 if 20 of its articles have at least 20 citations, while the rest of its articles have less than 20 citations (Hirsch, 2005).

[Table 2]

Table 3 presents a summary of the ANOVA and post hoc Tukey HSD (Honestly Significant Difference) tests, indicating whether significant differences between the groups' means are detected after comparing both regions in relation to the following variables for WoS: number of authors, citations, journal impact factor, and Eigenfactor score. For Scopus, the variables considered were number of authors, citations, and h-index values. The results for WoS showed no significant differences between regions regarding the number of authors. However, there were significant differences in relation to citations, journal impact factor, and Eigenfactor score, with China showing higher means for these three variables. The results for Scopus also showed no significant differences regarding the number of authors. However, there were significant differences in relation to the journals' h-index score and number of citations, with China once again showing higher means for these two variables. When authors were divided into four groups, individuals, pairs, trios, and packs (i.e., four or more authors) as proxies for the social capital of authors (Wuchty, Jones, & Uzzi, 2007), there were no significant differences in WoS regarding number of citations or Eigenfactor scores, but there were significant differences in relation to the journal impact factor. The mean journal impact factor was higher for the packs than for individual authors and pairs of authors, and higher for the trios than for the pairs. In addition, there was a positive correlation between the number of authors and the journal impact factor (r=.049, p=.003). However, there was no correlation between the number of authors and the number of citations (r=–.023, p=.175), and the Eigenfactor score (r=–.001, p=.953). For Scopus, there were also no significant differences among the various groups of authors in terms

of number of citations, but there were significant differences in relation to the journals' h-index scores. The mean h-index score for the pack group was higher than that for the rest of the groups. There was a positive albeit small correlation between the number of authors and the journals' h-index scores (r=.109, p=.000), but there was no correlation between the number of authors and the number of citations (r=.022, p=.290).

[Table 3]

Figure 1 shows the total output and the China/LATAM ratio for both WoS and Scopus for the period 2001–2018. During 2001–2005, production was limited to single-digit figures in both regions. There is a clear upward trend in both regions, wherein China has been the leading producer in almost every year based on both WoS and Scopus. In relation to WoS, China reached two hundred articles around 2014, one year ahead of LATAM. In relation to Scopus, China reached hundreds of articles around 2014, but LATAM did it before in 2013. There have been two peaks of production in China relative to LATAM in relation to WoS. Production in China in 2005 and 2008 was nine and four times higher, respectively than that in LATAM. Further, over the last five years, China has produced on average 80% more articles than LATAM. Looking at the Scopus data, in 2004, production in China was 2.5 times higher than that in LATAM. However, LATAM outperformed China in 2003 (twice the production of China), 2009 (+20%), 2012 (+20%), and 2013 (+10%). Nonetheless, over the last five years, China has produced an average of 50% more articles than LATAM. The most productive LATAM country was Brazil. A total of 802 articles indexed in WoS and 578 articles indexed in Scopus had at least one (co)authors with an affiliation in Brazil. The five most productive countries in LATAM were Colombia (20% the production of Brazil in Scopus and 22% in WoS), Mexico (Scopus: 20%; WoS: 24%), Chile (Scopus: 14%; WoS: 15%), and Argentina (Scopus: 10%; WoS: 9%) (WoS, 2018; Scopus, 2018).

[Figure 1]

At the institutional level, public universities from LATAM and China are the leading institutions in terms of production, with two exceptions among private universities (i.e., Tec de Monterrey and Fundação Getulio Vargas) (see Figure 2). Most Chinese universities are part of the C9 League, a special group of elite public universities (i.e., Zhejiang University [Scopus: 107; WoS: 142], Xi'an Jiaotong University [Scopus: 61; WoS: 112], Shanghai Jiao Tong University [Scopus: 57], and Tsinghua University [Scopus: 99; WoS: 157]) (Australian Government – Department of Education, n.d.). It can be seen that Chinese institutions showed an inclination toward publishing in journals indexed in WoS. In LATAM, the most productive

Brazilian universities in relation to both Scopus and WoS were Sao Paulo (Scopus: 135; WoS: 125) and Estadual de Campinas (Scopus: 48; WoS: 69).

[Figure 2]

Figure 3 presents the citations/articles ratios over a series of three-year periods, excepting the for the last period of four years, following Bornmann et al. (2014). It is expected that mature articles attract the most citations. The citations/articles ratio shows a downward trend in both China and LATAM in relation to both WoS and Scopus. The period 2001–2003 showed the highest citations/articles ratio for China in both WoS (86) and Scopus (46.8), with a downward trend in subsequent periods. In the period 2004–2006, LATAM surpassed China in terms of the citations/articles ratio in Scopus with a ratio of 47 compared with 38 for China.

[Figure 3]

3.2 *Highly cited publications*

Table 4 presents the five most cited documents from each of China and LATAM in each search engine/bibliographic database. A paper cited 400+ times, authored by Stilgoe et al. (2013) and tracked by Scopus, was the most cited document published in LATAM. Most of the leading authors were affiliated with either a Chinese or a European institution, followed by North American and LATAM institutions. *Research Policy* published most of the highly cited articles listed, followed by the *Journal of Business Venturing*, *Journal of Marketing*, *Strategic Management Journal*, *Technovation*, and *World Development*.

[Table 4]

3.3 Co-occurrence and co-citation networks

Co-occurrence networks were generated based on both Scopus and WoS, and a co-citation network was generated based on WoS. A co-occurrence network displays the degree of relatedness of items based on the number of documents in which they occur together (i.e., linking between keywords), generating a visualization of mature and emergent topics and their degree of relatedness or divergence (van Eck & Waltman, 2010). Each node keyword is weighted in proportion to its frequency of occurrence. A co-citation network connects academic disciplines by identifying them in the reference section of a document and connecting the research fields of the documents that appear in the reference list (Small, Sweeney, & Greenlee, 1985). Among other things, co-citation networks allow an understanding of the development of scientific fields and the interrelationships among specialties (Small, 1973).

The co-occurrence network for China based on Scopus (see Figure 4-a) consisted of 281 items, 6,460 links, and seven clusters: red (83 items), green (65), blue (47), yellow (32), purple

(26), pale blue (20), and orange (8). Keywords with high weighting in each of these clusters were *technological development*; *industry, commerce, and competition*; *technological innovation*; *societies and institutions*; *decision-making*; *product innovation*; and *investments*, respectively. The co-occurrence network for LATAM based on Scopus (see Figure 4-b) consisted of 120 items, 1,649 links, and six clusters: red (39 items), green (19), blue (19), yellow (17), purple (15), and pale blue (11). Keywords with high weighting in each of these clusters were *technological development*, *product development*, *competition*, *sustainable development*, *decision-making*, and *biotechnology*, respectively. Keywords found in both China and LATAM were *technological development*, *product development/innovation*, *competition*, and *decision-making*, while China differed from LATAM in relation to the centrality of keywords such as *industry*, *commerce*, and *societies and institutions*. Different central keywords used in LATAM were *sustainable development* and *biotechnology*.

[Figure 4-a; Figure 4-b]

The co-occurrence network for China based on WoS (see Figure 5-a), consisted of 214 items, 5,070 links, and seven clusters: red (48 items), green (42), blue (38), yellow (34), purple (29), pale blue (15), and orange (8). Keywords with high weighting in each cluster were *firm performance*, *performance*, *knowledge*, *strategy*, *R&D*, *competitive advantage*, and *product innovation*, respectively. The co-occurrence network for LATAM (see Figure 5-b) consisted of 193 items, 4,066 links, and six clusters: red (47 items), green (43), blue (37), yellow (31), purple (18), and pale blue (17). Keywords with high weighting in each of these clusters were *knowledge*, *R&D*, *strategy and product development*, *dynamic capabilities*, *industry*, and *performance*, respectively. Both regions shared the following keywords: *performance*, *knowledge*, *R&D*, and *strategy.* Distinctive keywords for China were *product innovation* and *competitive advantage*, and for LATAM they were *product development*, *industry*, and *dynamic capabilities*.

The co-citation network for China (see Figure 5-c) consisted of 203 items, 15,126 links, and four clusters: red (76 items), green (69), blue (49), and yellow (9). Journals with high weighting in each cluster were *Strategic Management Journal*, *Journal of Marketing*, *Journal of Management*, and *Academy of Management Review*, respectively. The co-citation network for LATAM (see Figure 5-d) consisted of 186 items, 13,203 links, and six clusters: red (73 items), green (52), blue (21), yellow (18), purple (17), and pale blue (5). Journals with high weighting in each cluster were *Technovation*, *Research Policy*, *Entrepreneurship: Theory and Practice*, *Journal of Marketing*, *Academy of Management Journal*, and *Strategic Management*

Journal, respectively. *Journal of Marketing* and *Strategic Management Journal* were central outlets for research in both regions.

[Figure 5-a; Figure 5-b; Figure 5-c; Figure 5-d]

4 DISCUSSION

The rising trend in the mean number of authors is partially consistent with the findings of previous studies. In 2001, the average number of authors was 1.9 in Scopus and 2.2 in WoS, whereas in 2018 the average number was 3.1 in both. This is a general trend because the average number of authors per paper has increased from 1.9 to 3.5 over the last 45 years (Wuchty et al., 2007). In the field of management, Acedo et al. (2006) and Lazzarotti et al. (2011) calculated the mean number of authors as 2.8 and 1.8, respectively. This is partly because problems in this field are more complex and need more specialized know-how (Kennedy, 2003), and the improvements in Information and Communication Technologies for remote and interdisciplinary research (Fanelli & Larivière, 2016). In addition, the pack groups showed significant differences in relation to the journal impact factor and the h-index where articles have been published. It seems that the aggregated know-how of the pack groups aims to propose and contribute to research problems/agendas articulated to those of reputable journals.

Significant differences between China and LATAM in terms of the number of citations and those citations' dependent measures (i.e., journal impact factor, Eigenfactor score, and h-index value) are partly explained by previous citations, level of international collaboration, and total number of publications in a specific scientific field (Confraria et al., 2017). Consider the latter factor, for instance. In this study, China outperformed LATAM in terms of output in relation to both WoS and Scopus. In a wider discussion, China also surpassed the United States as the world leader in scientific production, with 18.6% of the total number of documents in Scopus in 2016 (Tollefson, 2018). However, current and future research quality in both regions should be scrutinized. The average citations/articles ratio over the last eight years was 69% below the average ratio for 2001–2009. In China, regardless of the comparison with LATAM, the average number of citations per article was 9.4, which was lower than the world average of 11.8 (F. Huang, 2018). In the sample from LATAM, as mentioned earlier, more than 300 articles were excluded because of concerns about predatory behavior by one journal.

At the institutional level, China's trend toward publishing in journals indexed in WoS may be partly explained by both pressure and financial incentives to be listed in the WoS Science Citation Index: "If a researcher does not publish at least half a dozen such articles and get national-level research funding as a principal investigator within their first five years as

researchers, they have little hope of being hired as a tenured associate professor." Further, financial incentives for each publication are between US$900 and US$10,000 (F. Huang, 2018).

The most cited papers and the co-citation analysis showed a considerable distance from the Global North incidence and the centrality and influence of certain journals. While the most cited papers from China and LATAM are still far from reaching 1,000 citations more than a decade after being published, the three most cited papers on iBM in Scopus have 12,000+ (Teece, Pisano, & Shuen, 1997), 3,400+ (Teece, 2007) and 3,200+ (Barton, 1992) citations. Two of these papers were led by the same author (i.e., David Teece), who amassed 36,000+ citations or 1.2 times the total number of citations of 2,000+ articles analyzed in Scopus in this study, and were authored by researchers affiliated with North American universities (i.e., Berkeley, Harvard, or San Jose State). The foundational role of the United States in the creation of the first MBA program (i.e., Harvard) and the establishment of new research fields (e.g., dynamic capabilities and strategic management) resulted in that country's formation and production of intellectual property becoming the global benchmark.

The co-citation results revealed that both regions are focused on the subject categories of business and international management, marketing, and strategy and management, with the caveat that China is also monitoring advances in other research fields, such as psychology. The Journal of Applied Psychology was co-cited with other journals from the field of management (e.g., Journal of Management). Considering that the former journal "*considers empirical and theoretical investigations that enhance understanding of cognitive, motivational, affective, and behavioral psychological phenomena*" (SCImago, 2018), such frameworks are enriching the phenomena studied in the fields of management and DS (i.e., information systems, operation research and statistics). Co-citations from LATAM also considered studies from the field of psychology and other areas (i.e., economics and finance), but the node size was not as representative as it was in China. The most influential journals were published by North American associations (e.g., the American Psychological Association, Academy of Management, and American Marketing Association) or one of the few publishers associated with the *oligopoly of academic publishers* (i.e., Elsevier, Wiley-Blackwell, Springer, and Taylor & Francis) (Larivière, Haustein, & Mongeon, 2015). Despite a significant proportion (26%) of the research from LATAM being published as open access by public or private universities (e.g., Univesidad Alberto Hurtado-Chile, Universidade Federal de Sao Carlos-Brazil, Universidad Nacional-Colombia), journals from the region do not have Global visibility. This can be partly explained by the pioneering research on management and innovation in the Global North (Godin, 2015) and the subsequent Matthew effect (Merton, 1968).

The co-occurrence analysis identified both similarities and differences between the regions. While key terms such as *technological development, product development/innovation*, and *competition* were relevant in both regions in Scopus, terms such as *performance* and *knowledge* were central in WoS. Both bibliographic databases shared key terms such as *decision-making*, *strategy*, *technological development*, and *R&D*. This can amplify previous co-occurrence analysis focused just in LATAM as none of them were founded in previous studies (Cortés-Sánchez, 2019). China showed a marked interest in key terms related to *industry* and *commerce*, which is linked to the country's priorities because industrial production accounts for 40+% of China's GDP (Statista, 2018) and forms the basis of the largest export economy in the world (i.e., US$2+ trillion) (OEC, 2018). Management researchers from the region are studying *industry*, with a focus on drivers of green innovation (Qi, Shen, Zeng, & Jorge, 2010), and *commerce*, with a focus on e-commerce (Peng & Lai, 2014). Previous text-mining analysis in LATAM (Favaretto & Francisco, 2017) confirmed the consistent use of key terms such as *industry* and the emergence of several others such as *sustainable development* and *biotechnology*, both of which are important in the regional context. LATAM is the most biodiverse region in the world, with 60% of the planet's life forms living in the region (UNEP-WCMC, 2016). Management researchers from the region are studying biodiversity under the framework of *sustainable development*, focusing on cleaner production (Bonilla, Almeida, Giannetti, & Huisingh, 2010), corporate social responsibility (Anser, Zhang, & Kanwal, 2018), and under the framework of *biotechnology*, focusing on patents (Mendes, Amorim-Borher, & Lage, 2013) and university–industry interactions (Villasana, 2012).

5 CONCLUSION

The Global South is assuming a more prominent role in global knowledge production. The implementation and appropriation of this knowledge is crucial for the global development agenda, in particular that related to iBM and DS in the search for inclusive industrialization fostered by innovation. The results of this study contribute to the work of both researchers and practitioners by presenting a comparative analysis of the research dynamics (i.e., research output, citations, authorship, highly cited studies, reputable journals, significant differences among regions, research topic interrelationships, and research fronts) in relation to publications in the fields of iBM and DS by authors affiliated with institutions in either China or LATAM. In addition, the open access dataset that was used may be used for future studies aimed at replicating or triangulating the results obtained here, or to conduct more detailed analyses

focused on a particular country, in the case of LATAM, or at the institutional, author, or journal level.

The findings of this study highlight the increasing relevance of co-authorship for publishing in highly reputable journals (although impact is explained by other factors), the historical and production dynamics for identifying gaps, and how deep are they and which are the causes of those gaps (e.g., the incentives for output oriented the easy-fast-low-quality publication in a predatory journal). In addition, the key regional institutions/authors of the field, the journal-subject research fronts, the (relatively low) state of the interdisciplinary research, and the persistence dominance of both associations and research from the Global North. Future studies may consider other regions from the Global South (e.g., Africa and other Asian countries), additional technological innovation-related fields (e.g., STEM) and complementary bibliographic databases/search engines (e.g., Google Scholar, Dimensions, and Microsoft Academic).

Dataset

The dataset is available at the following permanent link [URL] or QR code. ***The dataset will be added after the reviewers' decision or will be send if needed.***

REFERENCES

Acedo, F. J., Barroso, C., Casanueva, C., & Galán, J. L. (2006). Co-authorship in management and organizational studies: An empirical and network analysis. *Journal of Management Studies*, *43*(5), 957–983. https://doi.org/10.1111/j.1467-6486.2006.00625.x

Amara, N., & Landry, R. (2012). Counting citations in the field of business and management: Why use Google Scholar rather than the Web of Science. *Scientometrics*, *93*(3), 553–581. https://doi.org/10.1007/s11192-012-0729-2

Anser, M. K., Zhang, Z., & Kanwal, L. (2018). Moderating effect of innovation on corporate social responsibility and firm performance in realm of sustainable development. *Corporate Social Responsibility and Environmental Management*, *25*(5), 799–806. https://doi.org/10.1002/csr.1495

Archambault, É., Campbell, D., Gingras, Y., & Larivière, V. (2009). Comparing bibliometric statistics obtained from the Web of Science and Scopus. *Journal of the American Society for Information Science and Technology*, *60*(7), 1320–1326. https://doi.org/10.1002/asi.21062

Australian Government – Department of Education. (n.d.). Ranking China's universities. Retrieved July 29, 2019, from Ranking China's universities website: https://internationaleducation.gov.au/News/Latest-News/Pages/Article-Ranking-Chinas-universities.aspx

Beall, J. (2015). *Beall's list: Potential, possible, or probable predatory scholarly open-access publishers*. Retrieved from https://beallslist.weebly.com/

Bergstrom, C. T., West, J. D., & Wiseman, M. A. (2008). The Eigenfactor™ metrics. *Journal of Neuroscience*, *28*(45), 11433–11434. https://doi.org/10.1523/JNEUROSCI.0003-08.2008

Birkinshaw, J., Hamel, G., & Mol, M. J. (2008). Management innovation. *Academy of Management Review*, *33*, 825–845. https://doi.org/10.5465/amr.2008.34421969.

Bonilla, S. H., Almeida, C. M. V. B., Giannetti, B. F., & Huisingh, D. (2010). The roles of cleaner production in the sustainable development of modern societies: An introduction to this special issue. *Journal of Cleaner Production*, *18*(1), 1–5. https://doi.org/10.1016/j.jclepro.2009.09.001

Bornmann, L., Bowman, B., Bauer, J., Marx, W., Schier, H., & Palzenberger, M. (2014). Bibliometric standards for evaluating research institutes in the natural sciences. Blaise Cronin and Cassidy Sugimoto (Eds.) In *Beyond Bibliometrics: Harnessing Multidimensional Indicators of Scholarly Impact* (Blaise Cronin; Cassidy Sugimoto, pp. 201–224). Cambridge, USA: MIT Press.

Casper, S., & Murray, F. (2005). Careers and clusters: Analyzing the career network dynamic of biotechnology clusters. *J Eng Technol Manage JET M*, *22*(1–2), 51–74. https://doi.org/10.1016/j.jengtecman.2004.11.009

Ceretta, G. F., Dos Reis, D. R., & Da Rocha, A. C. (2016). Innovation and business models: A bibliometric study of scientific production on Web of Science database. *Gestao e Producao*, *23*(2), 433–444. https://doi.org/10.1590/0104-530X1461-14

Cetindamar, D., Wasti, S. N., Ansal, H., & Beyhan, B. (2009). Does technology management research diverge or converge in developing and developed countries? *Technovation*, *29*(1), 45–58. https://doi.org/10.1016/j.technovation.2008.04.002

Choi, D. G., Lee, Y.-B., Jung, M.-J., & Lee, H. (2012). National characteristics and competitiveness in MOT research: A comparative analysis of ten specialty journals, 2000–2009. *Technovation*, *32*(1), 9–18. https://doi.org/10.1016/j.technovation.2011.09.004

Clarivate Analytics. (2017). *Web of Science Fact Book*. Retrieved from the Clarivate website: https://clarivate.com/wp-content/uploads/2017/05/d6b7faae-3cc2-4186-8985-a6ecc8cce1ee_Crv_WoS_Upsell_Factbook_A4_FA_LR_edits.pdf

Clarivate Analytics. (2018). WoS. Retrieved from the Search website: http://apps.webofknowledge.com/WOS_GeneralSearch_input.do?product=WOS&search_mode=GeneralSearch&SID=6AMHraWex5T7wYhRXTx&preferencesSaved=

Confraria, H., Mira Godinho, M., & Wang, L. (2017). Determinants of citation impact: A comparative analysis of the Global South versus the Global North. *Research Policy*, *46*(1), 265–279. https://doi.org/10.1016/j.respol.2016.11.004

Cortés-Sánchez, J. D. (2018a). *A bibliometric analysis of the most cited documents in business, management and accounting in Ibero-America* (Documentos de Investigación, Escuela de Administración No. 153). Retrieved from the Universidad del Rosario website: http://repository.urosario.edu.co/handle/10336/18009

Cortés-Sánchez, J. D. (2018b). Into oblivion: A closer look at the business, management and accounting research literature in Ibero-America. Retrieved from The Impact Blog – London School of Economics and Political Science website: https://goo.gl/HWrgwL

Cortés-Sánchez, J. D. (2019). Innovation in Latin America through the lens of bibliometrics: Crammed and fading away. *Scientometrics*. https://doi.org/10.1007/s11192-019-03201-0

De Carvalho, G. D. G., Cruz, J. A. W., De Carvalho, H. G., Duclós, L. C., & De Fátima Stankowitz, R. (2017). Innovativeness measures: A bibliometric review and a classification proposal. *International Journal of Innovation Science*, *9*(1), 81–101. https://doi.org/10.1108/IJIS-10-2016-0038

de Paulo, A. F., Carvalho, L. C., Costa, M. T. G. V., Lopes, J. E. F., & Galina, S. V. R. (2017). Mapping open innovation: A bibliometric review to compare developed and emerging countries. *Global Business Review*, *18*(2), 291–307. https://doi.org/10.1177/0972150916668600

Eigenfactor.org. (2019). Eigenfactor: About. Retrieved July 19, 2019, from the FAQ website: http://www.eigenfactor.org/methods.htm

Fanelli, D., & Larivière, V. (2016). Researchers' Individual Publication Rate Has Not Increased in a Century. PLOS ONE, 11(3), e0149504. https://doi.org/10.1371/journal.pone.0149504

Favaretto, J. E. R., & Francisco, E. R. (2017). Exploring the archive of RAE-Revista de Administração de Empresas (1961−2016) in the light of bibliometrics, text mining, social network and geoanalysis [Exploração do acervo da RAE-Revista de Administração de Empresas (de 1961 a 2016) à luz da bibliometria, text mining, rede social e geoanálise]. *RAE Revista de Administracao de Empresas*, *57*(4), 365–390. https://doi.org/10.1590/S0034-759020170407

Garfield, E. (2015). The Agony and the ecstasy: The history and meaning of the journal impact factor. *TEM Journal*, *4*(3), 1–22.

Gavel, Y., & Iselid, L. (2008). Web of Science and Scopus: A journal title overlap study. *Online Information Review*, *32*(1), 8–21. https://doi.org/10.1108/14684520810865958

Godin, B. (2015). Models of innovation: Why models of innovation are models, or what work is being done in calling them models? *Social Studies of Science*, *45*(4), 570–596. https://doi.org/10.1177/0306312715596852

Guan, J., & He, Y. (2007). Patent-bibliometric analysis on the Chinese science–technology linkages. *Scientometrics*, *72*(3), 403–425. https://doi.org/10.1007/s11192-007-1741-1

Guan, J., & Ma, N. (2007). China's emerging presence in nanoscience and nanotechnology: A comparative bibliometric study of several nanoscience "giants." *Research Policy*, *36*(6), 880–886. https://doi.org/10.1016/j.respol.2007.02.004

Harzing, A.-W., & Giroud, A. (2014). The competitive advantage of nations: An application to academia. *Journal of Informetrics*, *8*(1), 29–42. https://doi.org/10.1016/j.joi.2013.10.007

Hirsch, J. E. (2005). An index to quantify an individual's scientific research output. *Proceedings of the National Academy of Sciences of the United States of America*, *102*(46), 16569–16572. https://doi.org/10.1073/pnas.0507655102

Huang, F. (2018). Quality deficit belies the hype. *Nature*, *564*, S70–S71. https://doi.org/10.1038/d41586-018-07694-2

Huang, L., Zhang, Y., Guo, Y., Zhu, D., & Porter, A. L. (2014). Four dimensional science and technology planning: A new approach based on bibliometrics and technology roadmapping. *Technological Forecasting and Social Change*, *81*(1), 39–48. https://doi.org/10.1016/j.techfore.2012.09.010

Kennedy, D. (2003). Multiple authors, multiple problems. *Science*, *301*(5634), 733–733. https://doi.org/10.1126/science.301.5634.733

Kostoff, R. N. (2012). China/USA nanotechnology research output comparison–2011 update. *Technological Forecasting and Social Change*, *79*(5), 986–990. https://doi.org/10.1016/j.techfore.2012.01.007

Larivière, V., Haustein, S., & Mongeon, P. (2015). The oligopoly of academic publishers in the digital era. *PLOS ONE*, *10*(6), e0127502. https://doi.org/10.1371/journal.pone.0127502

Lazzarotti, F., Dalfovo, M. S., & Hoffmann, V. E. (2011). A bibliometric study of innovation based on Schumpeter. *Journal of Technology Management and Innovation*, *6*(4), 121–135. https://doi.org/10.4067/S0718-27242011000400010

Barton, D. (1992). Core capabilities and core rigidities: A paradox in managing new product development. *Strategic Management Journal*, *13*(1 S), 111–125. https://doi.org/10.1002/smj.4250131009

Li, N., Chen, K., & Kou, M. (2017). Technology foresight in China: Academic studies, governmental practices and policy applications. *Technological Forecasting and Social Change*, *119*, 246–255. https://doi.org/10.1016/j.techfore.2016.08.010

Li, X., Zhou, Y., Xue, L., & Huang, L. (2015). Integrating bibliometrics and roadmapping methods: A case of dye-sensitized solar cell technology-based industry in China. *Technological Forecasting and Social Change*, *97*, 205–222. https://doi.org/10.1016/j.techfore.2014.05.007

Lopes, A. P. V. B. V., & De Carvalho, M. M. (2012). The evolution of the literature on innovation in cooperative relationships: A bibliometric study for the last two decades. *Gestao e Producao*, *19*(1), 203–217. Retrieved from Scopus.

Manjarrez, C. C. A., Pico, J. A. C., & Díaz, P. A. (2016). Industry interactions in innovation systems: A bibliometric study. *Latin American Business Review*, *17*(3), 207–222. https://doi.org/10.1080/10978526.2016.1209036

Mendes, L., Amorim-Borher, B., & Lage, C. (2013). Patent applications on representative sectors of biotechnology in Brazil: An analysis of the last decade. *Journal of Technology Management and Innovation*, *8*(4), 91–102. Retrieved from Scopus.

Merton, R. K. (1968). The Matthew effect in science. *Science*, *159*(3810), 56–62. Retrieved from Scopus.

Mingers, J., & Lipitakis, E. A. E. C. G. (2010). Counting the citations: A comparison of Web of Science and Google Scholar in the field of business and management. *Scientometrics*, *85*(2), 613–625. https://doi.org/10.1007/s11192-010-0270-0

Mongeon, P., & Paul-Hus, A. (2016). The journal coverage of Web of Science and Scopus: A comparative analysis. *Scientometrics*, *106*(1), 213–228. https://doi.org/10.1007/s11192-015-1765-5

OEC. (2018). OEC - China (CHN) Exports, imports, and trade partners. Retrieved August 30, 2019, from https://oec.world/en/profile/country/chn/

Ortiz-Ospina, E., Beltekian, D., & Roser, M. (2018). Trade and globalization—Our world in data. Retrieved August 16, 2019, from https://ourworldindata.org/trade-and-globalization

Padilla-Ospina, A. M., Medina-Vásquez, J. E., & Rivera-Godoy, J. A. (2018). Financing innovation: A bibliometric analysis of the field. *Journal of Business and Finance Librarianship*, *23*(1), 63–102. https://doi.org/10.1080/08963568.2018.1448678

Peng, L., & Lai, L. (2014). A service innovation evaluation framework for tourism e-commerce in China based on BP neural network. *Electronic Markets*, *24*(1), 37–46. https://doi.org/10.1007/s12525-013-0148-0

Pilkington, A., & Teichert, T. (2006). Management of technology: Themes, concepts and relationships. *Technovation*, *26*(3), 288–299. https://doi.org/10.1016/j.technovation.2005.01.009

Qi, G. Y., Shen, L. Y., Zeng, S. X., & Jorge, O. J. (2010). The drivers for contractors' green innovation: An industry perspective. *Journal of Cleaner Production*, *18*(14), 1358–1365. https://doi.org/10.1016/j.jclepro.2010.04.017

Rosenbusch, N., Brinckmann, J., & Bausch, A. (2011). Is innovation always beneficial? A meta-analysis of the relationship between innovation and performance in SMEs. *Journal of Business Venturing*, *26*(4), 441–457. https://doi.org/10.1016/j.jbusvent.2009.12.002

SCImago. (2018). SCImago journal ranking. Retrieved from the SCImago journal ranking website: https://www.scimagojr.com/

Scopus. (2018). Search. Retrieved from https://www.scopus.com/

Scopus. (2019). Scopus. Retrieved July 16, 2019, from the How Scopus works website: https://www.elsevier.com/solutions/scopus/how-scopus-works

Silveira, F. F., & Zilber, S. N. (2017). Is social innovation about innovation? A bibliometric study identifying the main authors, citations and co-citations over 20 years. *International Journal of Entrepreneurship and Innovation Management*, *21*(6), 459–484.

Small, H. (1973). Co-citation in the scientific literature: A new measure of the relationship between two documents. *Journal of the American Society for Information Science*, *24*(4), 265–269. https://doi.org/10.1002/asi.4630240406

Small, H., Sweeney, E., & Greenlee, E. (1985). Clustering the science citation index using co-citations. II. Mapping science. *Scientometrics*, *8*(5), 321–340. https://doi.org/10.1007/BF02018057

Statista. (2018). China: GDP breakdown by sector. Retrieved August 30, 2019, from https://www.statista.com/statistics/270325/distribution-of-gross-domestic-product-gdp-across-economic-sectors-in-china/

Stilgoe, J., Owen, R., & Macnaghten, P. (2013). Developing a framework for responsible innovation. *Research Policy*, *42*(9), 1568–1580. https://doi.org/10.1016/j.respol.2013.05.008

Tanco, M., Escuder, M., Heckmann, G., Jurburg, D., & Velazquez, J. (2018). Supply chain management in Latin America: Current research and future directions. *Supply Chain Management*, *23*(5), 412–430. https://doi.org/10.1108/SCM-07-2017-0236

Teece, D. J. (2007). Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal*, *28*(13), 1319–1350. https://doi.org/10.1002/smj.640

Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, *18*(7), 509–533. https://doi.org/10.1002/(SICI)1097-0266(199708)18:7<509::AID-SMJ882>3.0.CO;2-Z

Tijssen, R. J. W. (2009). Internationalisation of pharmaceutical R&D: How globalised are Europe's largest multinational companies? *Technology Analysis and Strategic Management*, *21*(7), 859–879. https://doi.org/10.1080/09537320903182330

Tollefson, J. (2018). China declared world's largest producer of scientific articles. *Nature*, *553*, 390–390. https://doi.org/10.1038/d41586-018-00927-4

UNEP-WCMC. (2016). *El estado de la biodiversidad en América Latina y El Caribe*. Nairobi, Kenia.

United Nations. (2018). Goal 9 – Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation. Retrieved August 15, 2019, from https://sustainabledevelopment.un.org/sdg9

United Nations. (2019). *Special edition: Progress towards the Sustainable Development Goals*. Retrieved from the United Nations website: https://undocs.org/pdf?symbol=en/E/2019/68

van Eck, N. J., & Waltman, L. (2010). Software survey: VOSviewer, a computer program for bibliometric mapping. *Scientometrics*, *84*(2), 523–538. https://doi.org/10.1007/s11192-009-0146-3

Villasana, M. (2012). University–industry interactions in biotechnology: Implications for the development of a high-tech cluster. *International Journal of Learning and Intellectual Capital*, *9*(4), 429–447. https://doi.org/10.1504/IJLIC.2012.049618

Wuchty, S., Jones, B. F., & Uzzi, B. (2007). The increasing dominance of teams in production of knowledge. *Science*, *316*(5827), 1036–1039. https://doi.org/10.1126/science.1136099

Zupic, I., & Čater, T. (2015). Bibliometric methods in management and organization. *Organizational Research Methods*, *18*(3), 429–472. https://doi.org/10.1177/1094428114562629

TABLES AND FIGURES

Table 1 Query items for each bibliographic database

Bibliographic database	Keyword(s)	Subject area/Field	Subject categories	Source type	Author(s) affiliation(s)	Year	Results
WoS	Innovation; Innovación; innovação	Management; Business	Marketing and advertising; Forecasting; Planning; Administration; Organizational studies; Compensation; Strategy; Retailing; Consumer research, and management; Business history; Business ethics; Management science; Strategic planning and decision-making methods; Leadership studies; Total quality management.	Article	China; LATAM	2001-2018	China: 2,336; LATAM: 1,272; Total (excluding repeated articles): 3,609
Scopus		Business, management and accounting	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; Information Systems and Management; Management Science and Operations	Article	China; LATAM	1996-2018	China: 1,380; LATAM: 1,031; Total (excluding repeated articles): 2,411
		Decision sciences	Research; Statistics, Probability and Uncertainty				

Sources: Scopus (2018) and WoS (2018). Note: the 20 Spanish-Portuguese speaking LATAM countries considered for the query were Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Puerto Rico, Uruguay, and Venezuela.

Table 2 Descriptive statistics for the WoS and Scopus samples

Region		WoS				Scopus		
		# Authors	Impact Factor	Eigenfactor	Citations	# Authors	Journal H Index	Citations
China	N			2,336			1,377	
	Open access			171 (7%)			80 (5%)	
	Uncited	-	-	-	527 (22%)	-	-	201 (14%)
	Mean	2.94	2.17	0.005	20.3	3.02	64.53	17.19
	Median	3	1.83	0.002	4	3	56	5
	Min	1	0	0	0	1	0	0
	Max	8	9.28	0.05	872	9	232	679
	SD	1.12	1.68	0.008	43.94	1.198	50.35	33.14
LATAM	N			1,272			1,023	
	Open access			655 (51%)			230 (22%)	
	Uncited	-	-	-	801 (62%)	-	-	221 (21%)
	Mean	2.91	1.00	0.002	18.2	2.97	42.9	12.9
	Median	3	.00	0	7	3	18	3
	Min	1	0	0	2	1	0	0
	Max	11	6.70	0.05	371	28	209	469
	SD	1.30	1.47	0.005	33.92	1.545	45.57	28.24
Total	N			3,608			2,360	
	Open access			826 (22%)			310 (13%)	
	Sum	-	-	-	45,357	-	-	30,116
	Uncited	-	-	-	1,328 (36%)	-	-	422 (17%)
	Mean	2.93	1.76	0.00405	19.89	3	55.31	12.55
	Median	3	1.41	0.001	4	3	41	4
	Min	1	0	0	0	1	0	0
	Max	11	9.28	0.058	872	28	232	679
	SD	1.192	1.71	0.007945	42.43	1.357	49.53	31.22

Source: author calculations based on Scopus (2018) and WoS (2018). Note: mean citations only considers articles with at least one citation.

Table 3 Summary of ANOVA and post hoc Tukey HSD tests comparing China and LATAM in terms of number of authors, number of citations, journal impact factor, Eigenfactor score, and journals' h-index score

WoS						Scopus					
Variable	Groups	ANOVA	p<.05 Y	p<.05 N	Post hoc Tukey HSD	Variable	Groups	ANOVA	p<.05 Y	p<.05 N	Post hoc Tukey HSD
Number of authors	G1: China (n=2,336); G2: LATAM (n=1,272)	[F(1,3606)=.536, p=.464]		X		Number of authors	G1: China (n=1,377); G2: LATAM (n=1,023)	[F(1,2398)=.794, p=.373]		X	
Citations		[F(1,3606)=46.801, p=.000]	X		G1 ($\bar{x}$=20.3, σ=43.9); G2 ($\bar{x}$=18.2, σ=33.9)	Citations		[F(1,2397)=12.030, p=.001]	X		G1 ($\bar{x}$=17.1, σ=33.1); G2 ($\bar{x}$=12.9, σ=28.2)
JIF		[F(1,3606)=434.194, p=.000]	X		G1 ($\bar{x}$=2.17, σ=1.6); G2 ($\bar{x}$=1.0, σ=1.4)	Journals' H Index		[F(1,2805)=19.555, p=.000]	X		G1 ($\bar{x}$=64.5, σ=50.3); G2 ($\bar{x}$=42.9, σ=45.5)
Eigenfactor		[F(1,3606)=109.331, p=.000]	X		G1 ($\bar{x}$=0.005, σ=0.008); G2 ($\bar{x}$=0.002, σ=0.005)	Group of authors-Citations	G1: individual (n=223); G2:	[F(3,2396) =.826, p=.48]		X	

Group of authors-Citations	G1: individual (n=340); G2: couples (n=1,027); G3: trios (n=1,202); G4: packs (four or more authors, n=1,039)	[F(3,3604)=1.587, p=.190]	X	Group of authors-Journals' H Index	couples (n=679); G3: trios (n=751); G4: packs (n=747)	[F(3,2324)=13.00, p=.000]	X	G4 ($\bar{x}$=65.5, σ=49.76) & G1 ($\bar{x}$=49.4, σ=46.1) G2 ($\bar{x}$=50.5, σ=49.6) G3 ($\bar{x}$=56.6, σ=48.2)

Source: author calculations based on WoS (2018) and Scopus (2018). SPSS was used for ANOVA and post hoc tests

Table 4 Five most cited papers from each region in each search engine/bibliographic database

Region	Citations	Authors	Lead author affiliation	Year	Title	Source	Source h-index
Scopus							
China	679	Jensen M.B., Johnson B., Lorenz E., Lundvall B.A.,	Department of Marketing and Statistics, Aarhus School of Business, University of Aarhus, Denmark	2007	Forms of knowledge and modes of innovation	Research Policy	191
China	403	Zeng S.X., Xie X.M., Tam C.M.,	Antai School of Management, Shanghai Jiaotong University, China	2010	Relationship between cooperation networks and innovation performance of SMEs	Technovation	102
China	325	Liu X., White S.	National Research Center of Science and Technology for Development, Research Center for Innovation Strategy and Management, China	2001	Comparing innovation systems: A framework and application to China's transitional context	Research Policy	191
China	262	Guan J., Ma N.	School of Management, Beijing Univ. of Aero./Astronautics, China	2003	Innovative capability and export performance of Chinese firms	Technovation	102
China	224	Xiao J.Z., Yang H., Chow C.W.	Cardiff University, United Kingdom	2004	The determinants and characteristics of voluntary Internet-based disclosures by listed Chinese companies	Journal of Accounting and Public Policy	58
LATAM	469	Stilgoe J., Owen R., Macnaghten P.,	University of Exeter Business School, University College London, United Kingdom	2013	Developing a framework for responsible innovation	Research Policy	191
LATAM	394	Perez C.	Department of Technological Development, Ministry of Industry, Venezuela	1983	Structural change and assimilation of new technologies in the economic and social systems	Futures	66
LATAM	264	Bessant J., Caffyn S.	Centre for Research in Innovation Management, University of Brighton, United Kingdom	1997	High-involvement innovation through continuous improvement	International Journal of Technology Management	48
LATAM	189	Naranjo-Valencia J.C., Jiménez-Jiménez D., Sanz-Valle R.,	Facultad de Administración, Universidad Nacional de Colombia, Colombia	2011	Innovation or imitation? The role of organizational culture	Management Decision	77
LATAM	179	Ramdani B., Kawalek P., Lorenzo O.	Manchester Business School, The University of Manchester, United Kingdom	2009	Predicting SMEs' adoption of enterprise systems	Journal of Enterprise Information Management	48
WoS							
China	872	Zhu Q.H., Sarkis, J.	School of Management, Dalian University of Technology, China	2004	Relationships between operational practices and performance among early adopters of green supply chain management practices in Chinese manufacturing enterprises	Journal Of Operations Management	166
China	593	Zhou K.Z., Yim C.K., Tse D.K.	Department of Marketing, School of Business, University of Hong Kong, Hong Kong	2005	The effects of strategic orientations on technology- and market-based breakthrough innovations	Journal Of Marketing	218
China	588	Li H.Y., Atuahene-Gima K.	Texas A&M University	2001	Product innovation strategy and the performance of new technology ventures in China	Academy Of Management Journal	283
China	552	Atuahene-Gima K.	Department of Marketing and Innovation Management, China Europe International Business School (CEIBS), China	2005	Resolving the capability-rigidity paradox in new product innovation	Journal Of Marketing	218
China	486	Chau P.Y.K., Hu P.J.H.	School of Business, Faculty of Business and Economics, University of Hong Kong, Hong Kong	2001	Information technology acceptance by individual professionals: A model comparison approach	Decision Sciences	97
LATAM	371	Stilgoe, J., Owen R., Macnaghten P.	University of Exeter Business School, University College London, United Kingdom	2013	Developing a framework for responsible innovation	Research Policy	191
LATAM	293	Owen R., Macnaghten P., Stilgoe J.	University of Exeter Business School, United Kingdom	2012	Responsible research and innovation: From science in society to science for society, with society	Science and Public Policy	51
LATAM	244	Sosna M., Trevinyo-Rodriguez R., Velamuri S.	IESE Business School, Spain	2010	Business Model Innovation through Trial-and-Error Learning The Naturhouse Case	Long Range Planning	89

LATAM	206	Vassolo, R.S., Anand J., Folta T.B.	Universidad Austral, Argentina	2004	Non-additivity in portfolios of exploration activities: A real options-based analysis of equity alliances in biotechnology	Strategic Management Journal	232
LATAM	187	Yam R.C.M., Guan J.C., Pun K.F., Tang E.P.Y.	Dept. of Manufacturing Engineering, City University of Hong Kong, Hong Kong	2004	An audit of technological innovation capabilities in Chinese firms: some empirical findings in Beijing, China	Research Policy	191

Source: the author based on Scopus (2018) and WoS (2018)

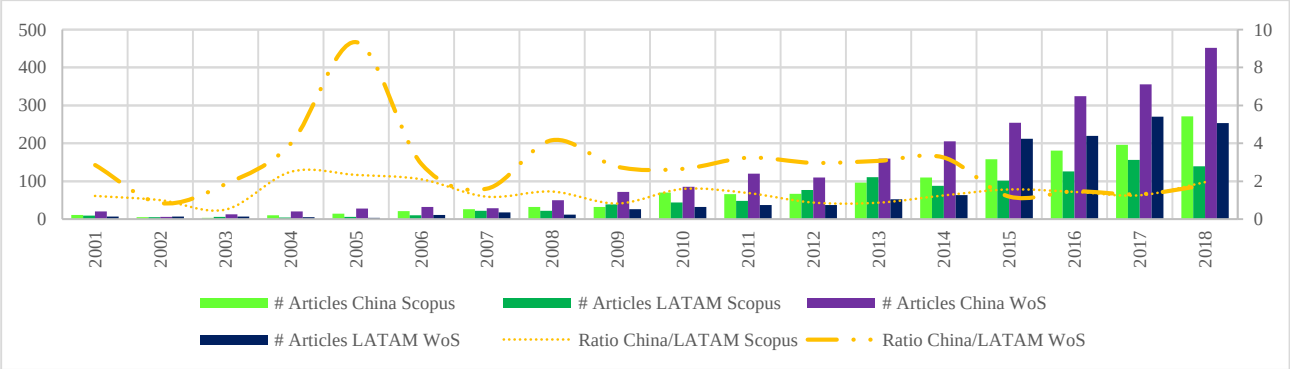


Figure 1 Output in China and LATAM and China/LATAM ratios for both WoS and Scopus (2001–2018). Source: author calculations based on WoS (2018) and Scopus (2018)

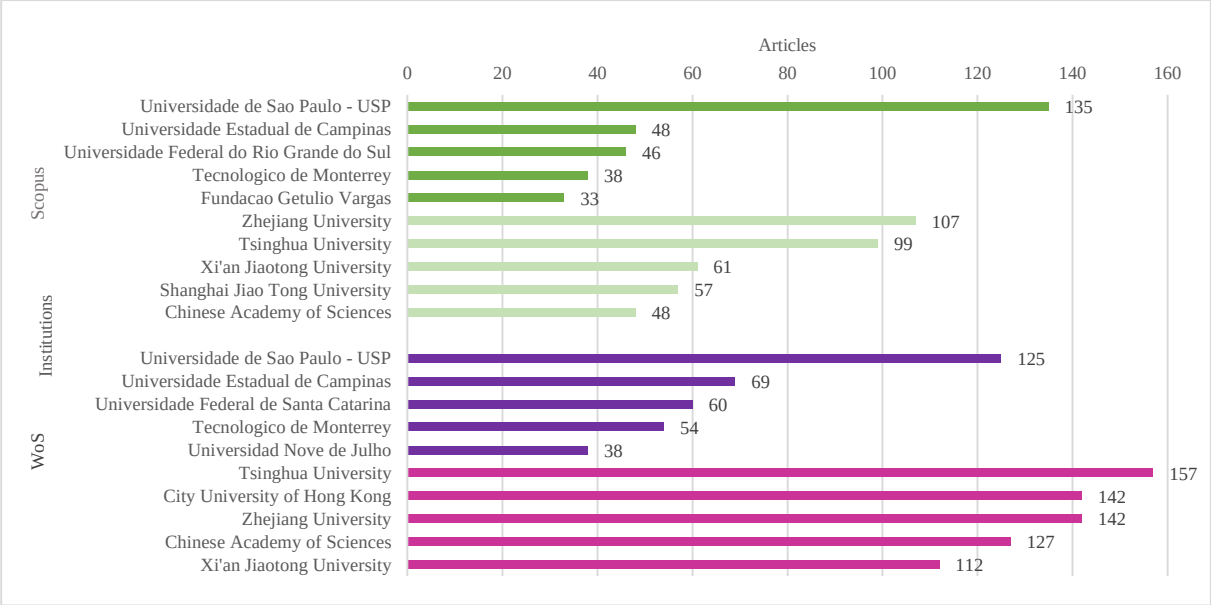


Figure 2 Output in China and LATAM by institution for both WoS and Scopus (2001–2018). Source: author calculations based on WoS (2018) and Scopus (2018)

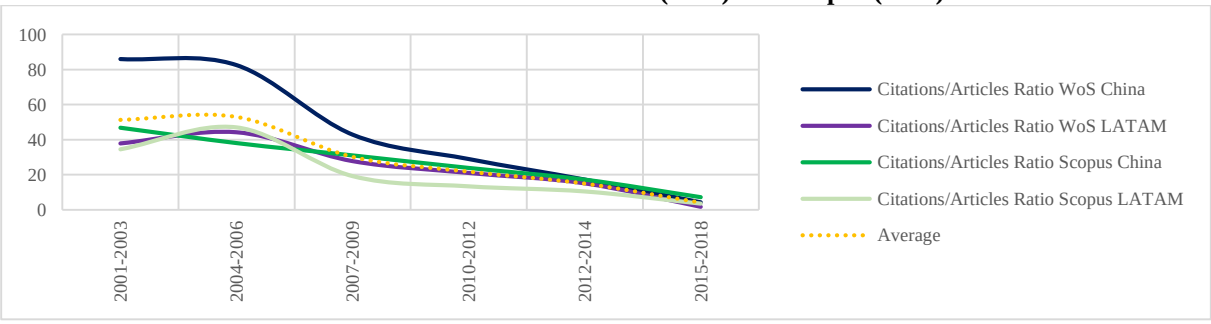
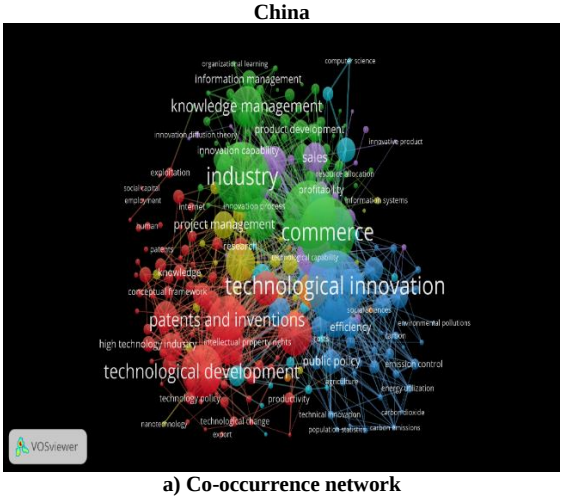


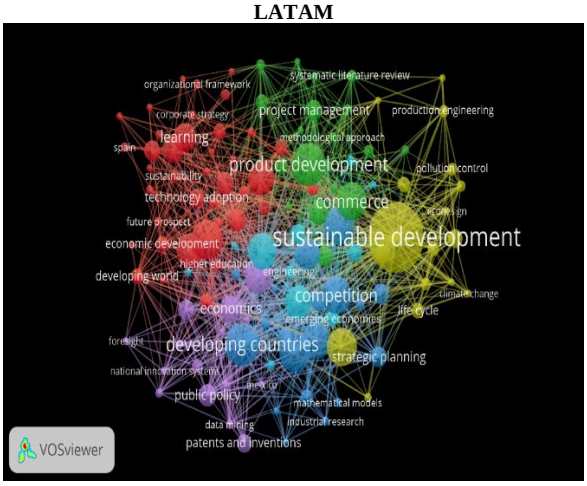
Figure 3 Citations/articles ratios in China and LATAM for both WoS and Scopus (2001–2018). Source: author calculations based on WoS (2018) and Scopus (2018)

China



a) Co-occurrence network

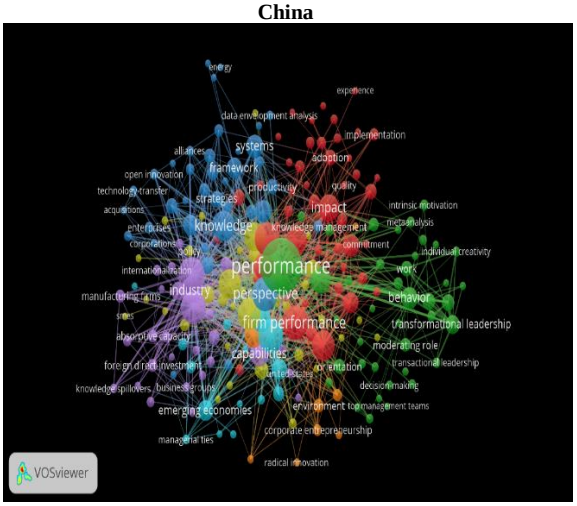
LATAM



b) Co-occurrence network

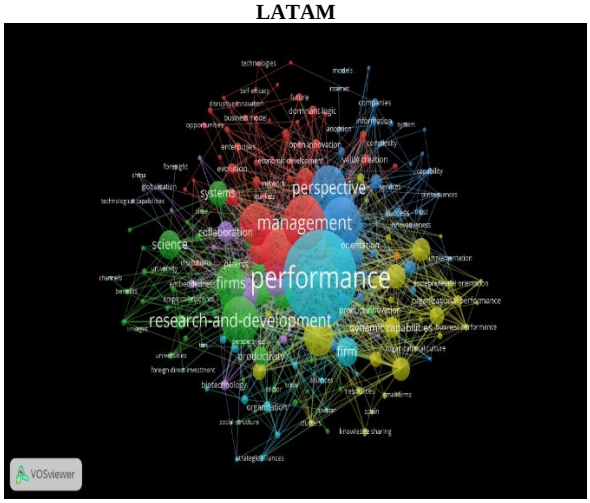
Figure 4 Co-occurrence networks in China and LATAM. Source: author, based on Scopus (2018) using VOSviewer

China

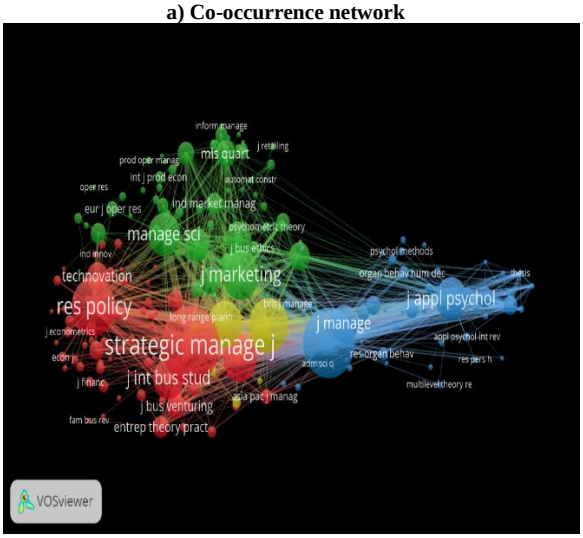


a) Co-occurrence network

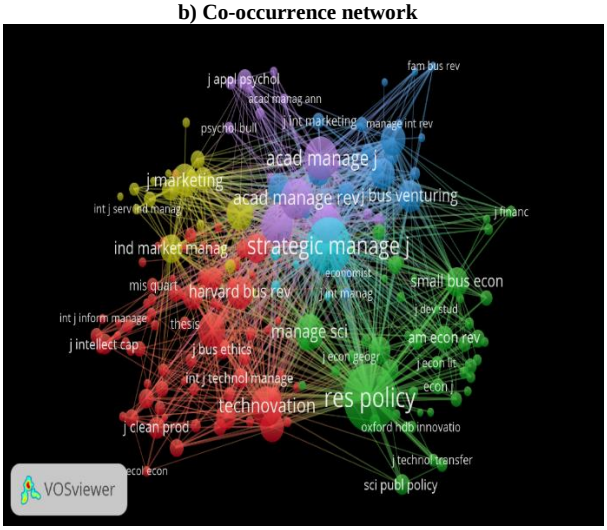
LATAM



b) Co-occurrence network



c) Co-citation network



d) Co-citation network

Figure 5 Co-occurrence and co-citation networks in China and LATAM. Source: author, based on WoS (2018) using VOSviewer