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ARTICLE

Context of scientific publications in regionally indexed journals versus global publications

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ABSTRACT
Introduction/Objective: The objective of this article was to deepen the results obtained in the systematic review of references, in high impact publications, placed in journals indexed in high level databases, such as: Scopus and Web of Science (WoS) compared to publications of the same. impact, but in the global context. Method, Results: The research method (descriptive-documental) was used, taking as a reference articles related to the theme. Therefore, the results showed that in Peru and Ecuador, countries that are going up in these databases, we have only 14 Peruvian journals indexed in WoS and 9 in Scopus, for Ecuador their journals indexed in WoS reach 20, while for Scopus, is reduced to just 2 magazines. Conclusion: According to these data, the measures taken by the two countries to increase their scientific proliferation and the extent to which the State contributes to this academic-professional.

KEYWORDS
Bibliometric analysis. Latin America. Perú. Scientific production. Indexed journals.

Contexto das publicações científicas em periódicos indexados regionais versus publicações globais

RESUMO
Introdução/Objetivo: O objetivo deste artigo foi aprofundar os resultados obtidos na revisão sistemática de referências, em publicações de alto impacto, colocadas em periódicos indexados em bases de dados de alto nível, tais como: Scopus e Web of Science (WoS) comparados a publicações das mesmas. impacto, mas no contexto global. Método, Resultados: Utilizou-se o método de pesquisa (descritivo-documental), tomando como referência artigos relacionados ao tema. Portanto, os resultados mostraram que no Peru e no Equador, países que estão subindo nessas bases de dados, temos apenas 14 periódicos peruanos indexados no WoS e 9 no Scopus, para o Equador seus periódicos indexados no WoS chegam a 20, enquanto para Scopus, é reduzido a apenas 2 revistas. Conclusão: De acordo com esses dados, foram discutidas as medidas tomadas pelos dois países para aumentar sua proliferação científica e em que medida o Estado contribui para esse aprimoramento acadêmico-profissional.

PALAVRAS-CHAVE

Análise bibliométrica. América Latina. Peru. Produção científica. Revistas indexadas.

JITA: BB. Bibliometric methods.

1 INTRODUCTION

The impact of techno-scientific development in the social sciences has promoted the regulation of scientific production based on quality criteria, determining the visibility of knowledge and its availability for scientific training and research and its application to the social environment (MARDONES, 2016). In the last decade, both Peru and Ecuador have made constant efforts to increase their scientific production and at the same time position themselves in high impact databases, such as, WoS (WEB OF SCIENCE) and SCOPUS, this effort originated from the concern of professionals and their search for positioning and recognition at a global level.

Over the past two decades, interest has increased in how some research universities have directly impacted regional economic activities and growth. Although the role of basic research for most research universities has remained strong, pressure has intensified to expand their missions to include support for local and regional economic development efforts (TEJEDOR-ESTUPINAN; TEJEDOR-ESTUPINAN, 2019). Consequently, many research universities have developed their basic scientific research mission from the production of scientific knowledge to the exchange and dissemination of knowledge with local industries through active participation in local economic development (CASTRO-RODRÍGUEZ, 2019; GUERRA et al., 2013; PERDOMO et al. 2020; SANCHO et al., 2006; TAYPE-RONDÁN et al., 2014).

In that sense, the research of CRESPO-GASCÓN et al. (2019), demonstrated that most of the research universities, contributed to the local and regional economic development, through diverse functions offered, being these the following: creation of knowledge, creation of human capital, transfer of existing knowledge, technological innovation, capital investment, regional leadership, production of infrastructure of knowledge and influence in the regional environment. University activities, mainly those focused on the area of knowledge, such as teaching and basic research, had substantial positive effects on a variety of measures of regional economic progress (ANGULO et al., 2008; DRUCKER; GOLDSTEIN, 2007; GONZÁLEZ-ARGOTE et al., 2016).

According to the previous approaches, it was possible to establish that, the scientific production and the impact that these publications generate at regional and global level, are strongly related to the economic development of their country of origin, since these new knowledge or proposals of new studies are centered in the industrial development of each country, achieving this way a takeoff of the same ones and resulting in improvements for the national economy. Therefore, it is transcendental that these investigations and subsequent publications of high global impact, are also corrected by the corresponding entities of the National Government, through public policies that lead to an improvement in the current quality of the publications and therefore of the journals themselves. The contrast of these possible new public policies could result in low productivity, mainly due to bureaucratization, which causes prolongation and loss of time in the process of payment of subsidies by the State (COCCIA; ROLFO, 2007; RIOS-GONZÁLEZ, 2016).

Although Latin America is a country with a large territory, its scientific production is still low impact. This prevents it from being in a good position, within the ranking of global scientific production. According to RAIHER (2010) the most relevant factors are: low investment by the State, incipient private investment in favor of scientific-technological activities, the small number of professionals involved entirely in the field of research and technological development, and the high cost of scientific equipment and materials. But it should also be mentioned that, currently in Latin America, the topics with the highest

productivity are located in the area of public health, infectious diseases, surgery, neurology, cardiology and cardiovascular medicine, that is, the fields with the highest visibility are mainly related to global health problems, related to chronic and emerging diseases. The most prolific countries are Brazil, Mexico and Argentina, although those with the greatest impact and most collaboration are the following countries: Peru, Puerto Rico and Argentina (ZACCA-GONZÁLEZ et al., 2015; CRUZ-RAMÍREZ et al., 2014). According to these data, we can then note that although Peru is not currently one of the countries with the greatest scientific proliferation, it is registered as one with a high impact, especially in the area of medicine. Therefore, Peru's main objective should be to focus on achieving greater productivity of articles that retain their high quality. While in Ecuador the panorama is totally different, showing high productivity in the last decade, but still not generating high impact totally.

For Ecuador, its scientific production in relation to the rest of Latin American countries has historically been minimal, showing a visible lack of scientific culture and inadequate political management for the promotion of scientific research, as well as a notorious neglect in the prioritization of scientific development in university centers (MOREIRA-MIELES et al., 2020). However, over the last decade, the government has implemented various policies to help remedy this current panorama. The results show that Ecuador has increased its scientific production 5.16 times in recent years, which exceeds Latin American growth. International collaborations, exceed 80% of Ecuadorian publications, mainly with the following countries: United States, Spain, England, Germany, France, Brazil and Colombia (CASTILLO; POWEL, 2019).

On the other hand, in the Peruvian scientific production, one of the main disadvantages of the country's positioning in the ranking of high impact global journals, is due to the fact that Peruvian researchers with high impact factors come primarily from foreign universities and publish academic works as co-authors with other native Peruvian academics. With respect to Peruvian academic institutions, only a few have a high research impact (6 in WOS and 6 in SCOPUS), while a larger group achieved a medium research impact (10 in WOS and 14 in SCOPUS) and the vast majority of institutions showed a low research impact (Huamaní et al., 2013).

In Peru, the regulatory body for the national research sector is the National Council for Science, Technology and Technological Innovation (CONCYTEC), which recognizes and registers Peruvian scientific journals, for their subsequent indexation in the system (CASTRO-RODRÍGUEZ et al., 2019). Even though Peru is currently evolving its education and research line, it has not yet reached the expected results, which could be the cause of the lack of financial resources for the implementation of important projects and the scarcity of qualified human capital would largely explain this reality. On the other hand, VALLE and SALVADOR (2012), propose that scientific production and the advancement of research and technological development projects, are transformed into fruitful knowledge, which is useful to develop new products and diversify the economy. The diversification of the economy increases the economic complexity of the country and allows to support the economic growth in the medium term through the increase of productivity. Hence, the importance of promoting investment in the field of Science, Technology and Technological Innovation, in a not very encouraging scenario where we are mostly lagging behind other countries in the region with similar characteristics. According to these data, it is summarized that Peru has a lower productivity than Ecuador, but its quality is higher, but this is still insufficient in terms of seeking a good positioning of Peruvian journals, and thus generate a high impact with the publications made in them (GARCIA-BEREGUIAIN, 2019; ZUÑIGA, 2000).

The problem that both countries face is the low impact generated by their publications compared to other countries, which also with this high impact, achieve a better positioning of

their journals in databases with high quality standards, such as SCOPUS and WOS. Representing in Peru, their poor scientific productivity, as a fundamental factor of the impact of their publications, although it has a high-quality range, according to data of Scopus (VERA-MONGE et al, 2017; SCIMAGO, 2011). While, in Ecuador, its low impact in scientific publications is due to the fact that before the last two decades, its public policies were minimal, causing a decrease in the quality of its publications. Despite the fact that currently its growth, regards to its journals indexed in SCOPUS and WOS, compared to other Latin American countries has been vastly higher, it still does not achieve a good positioning in the same platforms, already mentioned.

Therefore, the objective of this research was to deepen the results obtained in the systematic review of references, about high impact publications, placed in journals indexed to high level databases, such as: SCOPUS and Web of Science (WOS) against publications of the same impact, but in the global context.

Likewise, it seeks to reference the impact of the publications of both countries regards to other Latin American countries and at the same time, to place them in the global context. In the case of Ecuador, we sought to find the progress made by this country in the last decade, both in terms of productivity and quality, relating it directly to the public policies adopted by the Ecuadorian Government. In the case of Peru, the line of research was the same, adding its scope with respect to other countries, its current public policies in relation to the research sector and also possible recommendations based on the collection of such data.

For Peru, the records of the last census of the research sector in 2016, determined by CONCYTEC (National Council of Science, Technology and Technological Innovation) were used as a source of data, and for Ecuador's sister country, its references were subtracted from SENESCYT (Secretary of Higher Education, Science, Technology and Innovation). These data were contrasted and referenced in relation to the world panorama, of the presence of articles in indexed journals of high impact.

2 METHODOLOGY

The present research was of a documentary and descriptive type, since the selected data were consulted from various documentary sources, so the information located in the period 2012-2018 corresponds to the CONCYTEC database, to collect Peruvian statistical data; SENESCYT, for results from Ecuador and the SCOPUS database itself to compare the total scientific production in Latin America regarding the two countries specified above. The sampling was non-probabilistic, since the database selected was based on its free access and manageability, as well as its veracity. For the data collection, the Excel program was used to delimit the data and create a comparative table in relation to the countries with which this research was carried out. Below, we will detail the sources used and some relevant data for the subsequent presentation of statistical results.

3 SOURCES

3.1 CONCYTEC - Perú

During 2014, the expenditure consigned by the research and technological development centers, equaled the figure of 438 million soles, an amount that constituted 0.08% of the national GDP of the same year. By 2015, the figure increased to 518 million soles.

However, as a proportion of the GDP it remained at 0.08%. In the world panorama, this figure was minimal, in correspondence to the other sections of the Pacific and Latin American Alliance, this indicates the poor investment that the research sector has in the Peruvian territory. During the year 2015, the total number of experts dedicated entirely to the generation of Research and Development (R&D) was equal to 5,408 people; showing an increase of 13.1%, in relation to the previous year, which added up to a total of 4,708 professionals. According to the type of personnel, 62.4% of the total professionals dedicated to R&D were registered as researchers; 22.1% were in the category of technicians and the remaining 15.5% were recognized as support personnel.

Globally, Peru is at a disadvantage compared to equivalent nations in the region due to the number of researchers. Thus, for every thousand participants in Peru's Economically Active Population (EAP) there are only 0.2 researchers, which is below the average for the rest of the Latin American countries (1.3%) and 12.7%, which is far below the average for OECD countries. During the year 2015, 31.8% of the researchers had a doctorate (1,069 with a doctorate degree), a number that was much lower than in other Latin American nations. For example, in nations such as Chile and Uruguay this percentage was equal to 39.2% and 64.2%, respectively. On the other hand, for the Organization for Economic Cooperation and Development (OECD-OCDE) this percentage was 42.8%. Likewise, 27% of the researchers belonged to the area of Engineering and Technology; 25% in the Natural Sciences sector and 20% in Social Sciences.

According to Estrada-Cuzcano and Alfaro (2019), if we consider three of the outstanding databases at the international and regional level, such as SCOPUS, SCIELO and Emerging Sources Citation INDEX - ESCI/WoS, Peru had 29 university journals indexed, the same ones that have been published, only by 14 universities (from an average of more than 140 universities according to SUNEDU data). It should be noted that, of these 14 universities, 11 are currently licensed and the rest are in the middle of the process. On the other hand, according to the specialty variable, it was specified that Social Sciences and Humanities gathered the highest amount of indexed journals (13); then we found the field of Biomedical Sciences (8); Basic Sciences (7); Business Sciences (1) and finally in the field of engineering none is located in these databases, which contrasted paradoxically with the relevance of Social Sciences and Humanities, in comparison with their lower support and the scarce solvency provided for their projects. Likewise, it was detailed that most of the journals indexed come from private capital universities (21), as opposed to 8 publicly managed universities and that, in relation to their region of origin, 10 are from Lima and only 4 from the provinces.

Finally, it was noted that 55% of global journals indexed in databases such as WOS and SCOPUS, were concentrated mainly in 3 universities: Pontifical Catholic University of Peru (9), followed by National University of San Marcos (4), and finally Peruvian University Cayetano Heredia, with 3 journals attached. From this information, it was highlighted that the field of Humanities is currently the specialty with the minimum amount of disclosures, but in a total contrast of these data, it is the one that presents the highest number of indexed journals, equal in mark to Engineering and Technology or widely surpassing the field of Agricultural Sciences; also, linking both investigations previously mentioned, it should be specified that the weight of the field of Biomedical Sciences, has until the date, a total of 8 indexed journals, higher than its number of publications and therefore it still presented low impact at international level. From another angle, the university centers with the highest number of articles indexed in the SCOPUS database, between 2012-2017 are UPCH (Peruvian University Cayetano Heredia) with 1930 publications; then UNMSM (National University of San Marcos) was registered with 1430 divulged articles; and finally, PUCP (Pontifical Catholic University of Peru) registered a

total of 1356 publications; which indicated that only in these three universities, 55% of indexed journals were concentrated.

3.2 SENESCYT - Ecuador

According to reports from this state agency, until the end of January of this year, following the annual plan, the Ecuadorian Government contributed to the research sector, specifically SENESCYT, a total of 2.07% corresponding to its national GDP, that is, the sum total of 4,928,422.51 sucres derived from the country's scientific production. In relation to Latin America, the brother country of Ecuador, during the last decade, has been one of the countries that has promoted its research sector the most, providing public policies that benefit the productivity and quality improvement of the publications indexed to journals of high global impact. And in this way, it managed to position itself as the Latin American country with the most advances in research and development, with respect to other Latin American countries.

According to the official website of SCOPUS, until April 2018, Ecuador produced three journals: " Population and Health Mail (Correo poblacional y de la salud) / Center for the Study of Population and Responsible Parenthood (Centro de Estudios de Población y Paternidad Responsable)" which was inactive since 1999, in the area of Oncology and the "Ecuadorian Journal of Neurology (Ecuatoriana de Neurología)", which was deactivated since 1992 and was registered again during 2015, until now. The only Ecuadorian journal of Neurology, "Sociedad Ecuatoriana de Neurología" and which is registered in the SCOPUS data base, made reference to 26 published journals, counting on quarterly publications, until 2017.

3.3 SCOPUS database - Latin America overview

Using the SCIMAGO/SCOPUS database as a reference, we were able to classify a group of Latin American countries, according to the respective number of journals indexed in that database, ranking the first 10 countries on this list: Brazil (378); Mexico (114); Chile (102); Colombia (99); Argentina (64); Venezuela (39); Cuba (25); Peru (9); Ecuador (2) and Uruguay (1). The existence of journals indexed in international databases such as SCOPUS in a given country not only allowed the publication of articles in the authors' native language, but also allowed the publication of topics of regional interest and not necessarily in the international context. This definitely became a catalyst for producing quality articles in the country.

4 RESULTS AND DISCUSSION

The data obtained from the sources already mentioned, and verified in both the Web of Science and SCOPUS databases gave the following results, which will be shown in table 1, as well as the variation and difference between the countries that make up Latin America and the impact of their journals indexed in both WoS and SCOPUS (Graph 1).

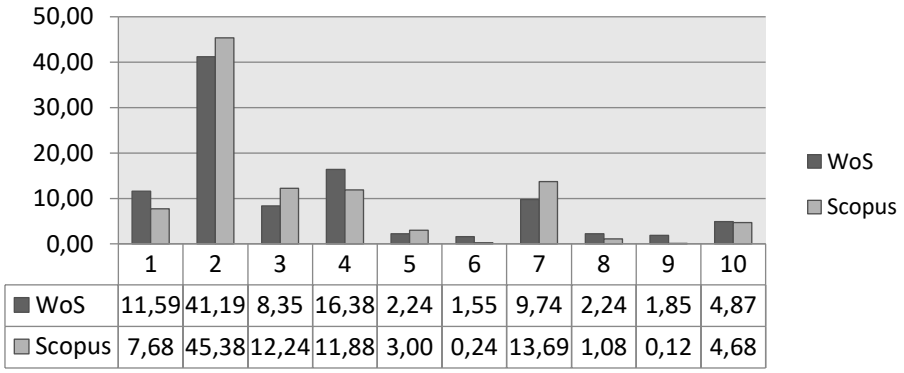
Table 1. Latin American Journals Indexed in WoS and Scopus Databases.

LATIN AMERICAN COUNTRIES	HIGH IMPACT DATABASES		PERCENTAGE VALUE	
	WOS	SCOPUS	WOS	SCOPUS
ARGENTINA	150	64	11,59	7,68

BRASIL	533	378	41,19	45,38
CHILE	108	102	8,35	12,24
COLOMBIA	212	99	16,38	11,88
CUBA	29	25	2,24	3,00
ECUADOR	20	2	1,55	0,24
MEXICO	126	114	9,74	13,69
PERU	29	9	2,24	1,08
URUGUAY	24	1	1,85	0,12
VENEZUELA	63	39	4,87	4,68
TOTAL / LATIN AMERICA	1294	833	100,00	100,00

Source: Researcher's own elaboration.

Graph 1. Results of the total number of Latin American Journals indexed in the WOS and SCOPUS database.



	1	2	3	4	5	6	7	8	9	10
WoS	11,59	41,19	8,35	16,38	2,24	1,55	9,74	2,24	1,85	4,87
Scopus	7,68	45,38	12,24	11,88	3,00	0,24	13,69	1,08	0,12	4,68

Source: Researcher's own elaboration.

4.1 Impact of Latin American publications in internationally indexed journals

Within the research period, from 2012 to 2018, a significant increase was observed in the number of Latin American journals indexed in SJR and JCR, although this number still represents a very low percentage of the world's scientific production. Likewise, in Latin America, the number of journals indexed in JCR equals to 3.5% of the world production, in the same way, for SJR and within the category of Environmental Sciences, the average of Latin American journals indexed equals to 2.36% of the world production (CRESPO et al., 2019). This research confirms the results of the study by SANCHO et al. (2006), which showed that, although Latin America has the widest biodiversity in the world and a vast territory, its scientific proliferation in the field of research, in the main databases (WoS and Scopus) still maintains a low percentage level compared to the rest of the world, thus presenting its indexed journals, a level of impact below the average of the other regions. Likewise, these results corroborate what RODRÍGUEZ-MORALES (2018) affirms, Latin America should continue making efforts to generate scientific journals of high scientific rigor and excellent quality, which could be indexed in a database with high impact, generating a wide stock of journals, where the authors of the region could publish their research, since many of these studies have clearly shown the main obstacle that these researchers have to achieve the publication of their articles in high impact journals and this as a consequence, that many editors do not know the main local problems or the language of the research (MAMMIDES et al. , 2016).

4.2 Impact of Peruvian publications in the global context of internationally indexed journals

The international figures have reflected a remarkable economic development for some Latin American countries in recent years. Peru, based on the results of its macroeconomic indicators, has been one of the countries that has recently been used as a model for such progress, exceeding the average rate of 5%, from 2015 to the present. This expansive boom, was objectively proven, through its consistency in the analysis of the scientific production of its own journals. It is necessary to emphasize that, in Peru, one of its main disadvantages is that most of its research professionals and high impact publishers are outside the country, besides the difference between private and national universities makes this productivity gap of the country grow, in relation to the rest of Latin American countries.

Peru, according to data from SCOPUS, was registered as one of the countries with the greatest international collaboration, and its publications are of high impact, so the question remains: Why does Peru not manage to position itself better in this ranking? or Why does Peru not index more journals in these databases? This obviously generated a low productivity. Currently, the country is undergoing a university reform and also a research reform, emphasizing these entities to generate new knowledge, through research and publication of articles in Peruvian journals as a priority, thus generating a better positioning of the country in the ranking of the WOS and SCOPUS databases.

4.3 Impact of Ecuadorian publications in the global context of internationally indexed journals

Certainly, Ecuador has not been prolific in terms of scientific research, so it was no surprise that during the period 2012-2018, its scientific production has been so minimal. According to the SCOPUS database, the country's total publications represented a number equal to 6,548 and a large part of these were carried out by researchers attached to Ecuadorian organizations. A total of 89% of the documents were published in English and the remaining 11% in Spanish or other languages, which represented an increase of 5.1 times and this compared to the average Latin American growth in publications, standing out over the rest of the countries, according to reports until 2018. The compound annual growth rate (CAGR), also recorded that Ecuador, currently has positioned itself as the most developed country in terms of scientific publications is concerned (17.7%), following the steps is located, Colombia (14.8%), Peru (11.2%), Brazil (6.6%), Argentina (5.2%) and Mexico (4.6%). The researchers developed greater advances in the two areas specifically, Agriculture - Biological Sciences and Medicine, which encompassed within the set, a total of 29% and 28% of publications respectively (CASTILLO and POWEL, 2019). One of the main causes of this current growth in the research sector that the country has presented, especially in the last decade, is fundamentally due to the changes, which have been carried out, in the established government policy. The Constitution of Ecuador (updated in 2008) established that both the country and the government were obliged to prioritize education with high quality standards, strongly linking this aspect to the role played by scientific research (Articles 385-388, Political Constitution of Ecuador). In 2010, the Organic Law on Higher Education (LOES) was decreed and established, and with this, a correct promotion was achieved within the field of research in university centers, insisting mainly that all teachers in these establishments should have at least a master's degree and another clause indicating that 70% of them were subject to presenting a doctoral degree, which should be accredited by university research centers (MEDINA et al., 2016).

Within this context, the increase of scientific production in Ecuador was promoted through two programs, which contributed significantly and these are: The Scholarship Program

and the Prometheus Project. The national government, which was still seeking improvements for the national scientific production sector, generated a new law, called the "Ingenuity Code", which was approved and decreed in December 2016. This provision promotes, regulates and finances technological development, creativity and scientific research, as well as achieving regulation in reproduction, correct management and economic exploitation of intellectual property (patents, prototypes, etc.). It should also be mentioned that international scientific collaboration in the production of Ecuadorian publications has generated a significant impact, representing 80% of the total scientific production. Although international cooperation has been a measure promoted by developed countries, this model often does not prioritize the needs of developing countries (PATALANO, 2005), although there are currently major advances in the scientific production sector in Ecuador, this country still faces great challenges to solve, mainly in terms of the quality of its indexed publications.

5 CONCLUSIONS

The perception of the way in which the authors researched in this work approached Bernd Frohmann was fundamental to deepen and broaden the understanding of neodocumentalism and the trajectory of the aforementioned author in his studies. As one of the precursors to returning to the document as an object of central study in Information Science, Frohmann contributed to transforming the paradigms of the field, which, in the 1980s, were poring over the concept of information without establishing relationships with their contexts, be they political, social, historical (ORTEGA; SALDANHA, 2017).

In order to substantiate this contextualization, Frohmann attributed several essential aspects to the information, which concern its materiality, made possible by documentary practices; the power relations established by the documents, which constituted its institutionality; the autonomous agency of documents, operated by the power that these objects have to affect social practices through their information effects; in addition to historicity, that is, the historical contexts that determine documentary practices. In this way, he also inaugurated studies on the concept of information regime, fundamental for discussions involving information policies in CI.

These aspects are explored in the analyzed articles, providing a solid theoretical basis for these texts in order to achieve their objectives. It was noticed a wide use of Bernd Frohmann's concepts of information and document and the immediate identification of this author to neodocumentalism, in addition to studies involving the concept of information regime by the same author. It was also noted that the studies pervade all the themes and axes of Information Science, bringing reflective research on the way in which the information, the document and the information regimes act and interfere theoretically, epistemologically, in the practices of the information professional and in relation to users of information.

In addition to the literal use of the Frohmannian concepts, it was possible to identify the presence of conceptions by the authors themselves, confronting them with those of Frohmann or even expanding the approaches of the neodocumentalist author. It was also identified a relationship between these uses and an expansion of the discussions about information in contemporary society, which is evident in the speech of González de Gómez (2019, p. 156): “By giving visibility to the historical scenario that contextualizes these uses from the concept, traces of the strengths and weaknesses of the conceptions of network societies emerge and the debate on the regulatory architectures of contemporary societies is gaining relevance.”.

It is considered that the discussion of informational studies based on Frohmann also evidences the understanding of information under the bias of the social paradigm. In other words, for Bernd Frohmann and for the analyzed authors, the information is alive, since the documentary practices are established with and from it, and thus, social relations, power relations, are constituted.

CRediT

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REFERENCES

ANGULO, R. *et al*. Student Publication in Venezuelan Medical Journals, 2001 – 2005. **Ciencia e Investigación Médica Estudiantil Latinoamericana**, v. 13, n.1, p. 6–8. 2008. Availabe at: http://www.cimel.felsocem.net/index.php/CIMEL/article/view/156. Access on: Jan. 22, 2019.

CASTILLO, J.; POWELL, M. Analysis of the scientific production of Ecuador and the impact of international collaboration in the period 2006-2015. **Revista española de Documentación Científica**, v. 42, n.1, p. 12-25. 2019. doi: 10.3989/redc.2019.1.1567

CASTRO-RODRÍGUEZ, Y. Student scientific production in Peruvian dental journals during the period 2012 to 2017. **Educación Médica**, v. 20, n. 2, p. 91–99. 2019. doi: 10.1016/j.edumed.2018.02.008

COCCIA, M.; ROLFO, S. How changes in research policies can affect the organization and productivity of public research institutes: an analysis within the Italian national innovation system. **Journal of Comparative Policy Analysis: Research and Practice**, v. 9, n. 3, p. 215–233. 2007. doi: 10.1080/13876980701494624

CRESPO-GASCÓN, S. *et al*. Production of scientific journals in Latin America and the Caribbean in Scopus, Journal Citation Reports and Latindex in the area of natural resources: their relationship with economic, environmental, and research investment variables. **Revista Española de Documentación Científica**, v. 42, n. 1, p. 12-24. 2019. doi: 10.3989/redc.2019.1.1533

CRUZ-RAMÍREZ, M. *et al*. Scientometric analysis of Cuban educational publications in WoS and Scopus (2003-2012). **Revista Española de Documentación Científica**, v. 37, n. 3, p. 43-58. 2014. doi: 10.3989/redc.2014.3.1119

DRUCKER, J.; GOLDSTEIN, H. Assessing the impacts of regional economic development of universities: a review of current approaches. **International Regional Science Review**, v. 30, n. 1, p. 20–46. 2007. doi: 10.1177/0160017606296731

ESTRADA-CUZCANO, A.; ALFARO, K. **Scientific production of researchers in Humanities and Social Sciences of the Universidad Nacional Mayor de San Marcos: 2017-2018. 2019**. Available at: https://n9.cl/69gp. [18 de enero de 2019]. http://revista.letras.unmsm.edu.pe/index.php/itc/article/view/639. Access on: Jan. 22, 2019.

GARCIA-BEREGUIAIN, M. Journals indexed on Scopus in Ecuador: the pending subject. **Revista Ecuatoriana de Neurología**, v. 28, n. 3, p. 13-14. 2019. Available at:http://scielo.senescyt.gob.ec/scielo.php?script=sci_arttext&pid=S2631-25812019000300013. Access on: Jan. 22, 2019.

GONZÁLEZ-ARGOTE, J. *et al*. Student scientific production in Cuban medical journals 1995-2014 First stage in Research. **Educación Médica**, v. 5, n. 19, p. 155–163. 2016. doi: 10.1016/j.riem.2016.01.023

GUERRA, K. *et al.* Bibliometric analysis of the publications related to innovation projects and their management in Scopus, in the period 2001-2011. **ACIMED**, v. 24, n.3, p. 281–294. 2013. Available at: https://www.medigraphic.com/cgi-bin/new/resumen.cgi?IDARTICULO=45749. Access on: Jan. 22, 2019.

HUAMANÍ, C. *et al*. Student contribution in the publication of scientific articles in medical journals indexed in SciELO-Peru, 1997 - 2005. **Anales de La Facultad de Medicina**, v. 69, n. 1, p. 42–45. 2013. Available at: http://www.scielo.org.pe/scielo.php?pid=S1025-55832008000100009&script=sci_arttext&tlng=en. Access on: Jan. 22, 2019.

MARDONES, R. Discourse of the territory enunciated by the Social Sciences in the scientific publications of Latin American journals. **Revista Prisma Social**, n. 16, p. 556-596, 23 dic. 2016. Available at: https://revistaprismasocial.es/article/view/1266. Access on: Jan. 22, 2019.

MAMMIDES, C. *et al*. Increasing geographic diversity in the international conservation literature: A stalled process? **Biological Conservation**, n. 198, p. 78–83. 2016. doi: 10.1016/j.biocon.2016.03.030

MEDINA, J. et al. Scientific research, in Ramírez René [comps.]. **Universidad urgente para una sociedad emancipada**, p 461-494. Quito, Ecuador: SENESCYT-IESALC. 2016.

MOREIRA-MIELES, L. *et al*. Characterization of Ecuador's scientific production in the period 2007-2017 in Scopus. **Investigación Bibliotecológica**: Archivonomía, Bibliotecología e Información, v. 34, n. 82, p. 141–157. 2020. doi: 10.22201/iibi.24488321xe.2020.82.58082.

PATALANO, M. Publications in the scientific field: the academic journals of Latin America. **Anales de Documentación**: Revista de Biblioteconomía y Documentación, v. 8, n. 8, p. 217–

235. 2005. Available at: https://revistas.um.es/analesdoc/article/view/1451. Access on: Jan. 22, 2019.

PERDOMO, B. et al. Quality of undergraduate theses in Peruvian universities. **Revista Espacios**, v. 41 n. 2, p. 5-17. 2020. Recuperado de Available at: https://www.revistaespacios.com/a20v41n02/20410205.html. Access on: Jan. 22, 2019.

RAIHER, D. **Comparative study between Latin American and world scientific production on health inequities during the years 1999-2008**. (Bachelor Thesis) National University of La Plata. 2010. Available at: sedici.unlp.edu.ar. Available at: http://www.memoria.fahce.unlp.edu.ar/library?a=d&c=tesis&d=Jte361. Access on: Jan. 22, 2019.

RIOS-GONZÁLEZ, C. Scarce scientific publication in Paraguayan medical students. **Educación Médica**, v. 17, n. 2, p. 80–81. 2016. doi: 10.1016/j.edumed.2016.03.005.

RODRÍGUEZ-MORALES, Publish from Latin America. Where are we? **Revista Ecuatoriana de Neurología**, v. 27, n. 3. 2018 Available at: http://scielo.senescyt.gob.ec/scielo.php?script=sci_arttext&pid=S2631-25812018000300012. Access on: Jan. 22, 2019.

SANCHO, R. *et al*. Indicators of scientific inter-center collaboration in Latin American countries. **Interciencia**, v. 31, n. 4, p. 284–292. 2006. Available at: https://www.redalyc.org/pdf/339/33911508.pdf. Access on: Jan. 22, 2019.

SCIMAGO. **SCimago Lab**: Scientific excellence georeferenced. The neighborhood matters. 2011. Available at: http://www.scimagolab.com/blog/2011/scientific-excellence-georeferenced-the-neighborhood-matters. Access on: Jan. 22, 2019.

TAYPE-RONDÁN, Á. et al. Student scientific production in Latin America: an analysis of Spanish-language medical journals indexed in SciELO, 2011. **Educación Médica**, v. 17, n. 3, p. 171–177. 2014. doi: 10.4321/S2014-98322014000300007

TEJEDOR-ESTUPINAN, J. Y TEJEDOR-ESTUPINAN, R. Visibility and scientific impact: the case of Colombian economy journals. **Investigación Bibliotecológica**: Archivonomía, Bibliotecología e Información, v. 33, n. 78, 121–141. 2019. doi: 10.22201/iibi.24488321xe.2019.78.57915.

VALLE, R. y SALVADOR, E. Bibliometric analysis of the undergraduate thesis of the Faculty of Medicine of the Nacional University of San Marcos. **Anales de La Facultad de Medicina,** v. 70, n. 1, p. 11–18. 2012. Available at: http://www.scielo.org.pe/scielo.php?pid=S1025-55832009000100003&script=sci_arttext&tlng=en. Access on: Jan. 22, 2019.

VERA-MONGE, V. et al. Latin American Scientific Production in Health Economics, 2005-2014. **Salud Pública De México**, n. 59, p. 505–506. 2017. Available at: https://www.scielosp.org/article/spm/2017.v59n5/505-506/. Access on: Jan. 22, 2019.

ZACCA-GONZÁLEZ, G. et al. Latin American scientific production in public health: combined analysis using bibliometric, socioeconomic and health indicators. **Scientometrics**,

v. 102, n. 1, p. 609–628. 2015. Available at: https://dialnet.unirioja.es/servlet/tesis?codigo=57310. Access on: Jan. 22, 2019.

ZUÑIGA, U. University and Science in Latin America. **Interface - Comunicação, Saúde, Educação**, v. 4, n. 6, p. 167-170. 2000. Available at: https://www.scielosp.org/article/icse/2000.v4n6/167-170/es/. Access on: Jan. 22, 2019.

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