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 Renzo Felipe Carranza Esteban¹
 Oscar Mamani-Benito²
 Josué Edison Turpo Chaparro³
 Percy G. Ruiz Mamani⁴
 Ronald M. Hernández⁵

Student Scientific Output in Social Science Journals: A review of Peru, Ecuador and Paraguay

Abstract

To describe the scientific production of undergraduate students in applied social science journals, indexed in SciELO Peru, Ecuador and Paraguay between the years 2014-2017. Materials and methods. Bibliometric study. 1253 articles in 19 applied social science journals (original, review and letter to the editor) indexed in Scielo Peru, Ecuador and Paraguay were analyzed. Results. 0.95% of the publication types have student participation, in addition 3652 authors were counted, of which 0.5% are students. In addition, Peru has the largest number of magazines with student participation; Ecuador with the highest amount of articles written by students (1.4%) and Paraguay evidences student production since 2017. Conclusion. Little participation of undergraduate students from Peru, Ecuador and Paraguay was found in scientific publications in social science magazines. It is recommended to strengthen and encourage the generation and dissemination of scientific studies and to monitor the increase in student participation.

Keywords: Bibliometrics, scientific journals, social sciences, university students, SciELO.

Introduction

Research, more than an activity, is a function that implies developing a transversal axis in the university context, where the university should be the space in which scientific knowledge is applied, generated and disseminated through joint work between

teachers and students, who should direct their effort towards solving health problems and therefore social transformation (Medina, 2018).

The exercise of scientific research accounts for different types of publication, where scientific articles are more relevant when communicating the results of the

Renzo Felipe Carranza Esteban¹, Universidad San Ignacio de Loyola, Lima, Perú, Email: rcarranza@usil.edu.pe

Oscar Mamani-Benito², Escuela de Posgrado, Universidad Peruana Unión, Lima, Perú, Email: Oscar.mb@upeu.edu.pe

Josué Edison Turpo Chaparro³, Escuela de Posgrado, Universidad Peruana Unión, Lima, Perú, Email: josuetc@upeu.edu.pe

Percy G. Ruiz Mamani⁴, Universidad Privada San Juan Bautista, Lima, Perú, Email: percygruiz@hotmail.com

Ronald M. Hernández⁵, Universidad San Ignacio de Loyola, Lima, Perú. Email: rhernandezv@usil.edu.pe

research undertaken. In this context, scientific journals take on special importance since they are the ones in charge of disseminating results thanks to their national or international reach, and are recognized by the scientific community for their indexing processes and, above all, peer review (Castro-Rodríguez, 2019). It is precisely the latter that are important indicators to assess the contribution to science by the academic and therefore a nation (Morales Morante, 2016).

In Latin America, where there is a wide diversity in terms of levels of social, economic, and political development among countries, it seems that the perspective of scientific development is not so different from each other (Guerrero-Casado, 2017), since in most observed a limited scientific production in recent years, compared to developed countries (SCIMAGO, 2019). In addition, the need in this part of the continent for quality research is evident, and in this eagerness, a special call is received by those future professionals who are in training, since it is expected that they will not only be involved in the exercise of research. scientific through their undergraduate work, but also publish their results in scientific journals, where the findings by the scientific community are really valued (De La Cruz-Vargas et al., 2019)

One of the most important reports on student scientific production in Latin America in the area of medical sciences reveals low student participation and, above all, a low level of collaboration among medical students (Taype-Rondán, Palma-Gutiérrez, Palacios-Quintana, Carbajal-Castro, & Ponce-Torres, 2014).

Such is the case of Peru, Ecuador and Paraguay; For example, in the Peruvian case, investigations such as the one carried out by Huaraca-Hilario, Apaza-Alcayhuaman, & Mejia (2017) and Toro-Huamanchumo, Meza-liviapoma, Quispe-juli, Fernández-chinguel and Torres-Román (2015) reveal that Although some improvements have been seen since 2006, student scientific participation remains low (Hernández, Carranza, Caycho-Rodríguez, Cabrera-Orosco, & Arias, 2019), however, an important point is to recognize the work of the scientific societies so that students can not only have research experiences, but also learn to publish, and not only in Spanish but also in English, as emphasized by other research with students in Latin America between 2013 and 2016 that concludes the need to publish in another language and maintain collaboration between countries (Corrales-Reyes & Dorta-Contreras, 2019).

In the Ecuadorian case, historically this country has had a low performance in research, however, in recent years, thanks to

the impulse of policies by the state, scientific production has increased 5.16 times, and however, even this impulse is far away. than what other countries on the same continent like Brazil and Chile generate (Castillo & Powell, 2019). Finally, in the case of Paraguay, scientific production in the social sciences and humanities is one of the lowest, 250 articles published between 2005 and 2015, rather, this country stands out for its contributions in health sciences, 1,368 articles in the same period; For this reason, the scientific community recognizes the deep need to improve the dissemination of knowledge in their country (Moreno, 2018; Emam, & Shajari, 2013).

It is due to this reality that today in some countries it is observed that many higher-level study houses have the need to change management models, especially geared towards scientific research. In this regard, a clear example is considering that obtaining a bachelor's degree is through the preparation of a research paper (Peru), in addition to considering the publication of a scientific article as a requirement to obtain the professional title; with this, promoting the possibility of generating participation and visibility of research products by students (Mayta-Tristán, 2016); however, despite the fact that this ideal is very well seen by the scientific community, work has yet to be done on other aspects such as thesis advisory processes, the limited experience of advisers and reviewers in scientific publication, poor updating of knowledge of research teachers (Carranza & Turpo, 2018; Mamani-Benito, Ventura-León, & Caycho-Rodríguez, 2019; Mamani, 2018; Wyrasti, et al, 2019).

Because, in Peru and other mentioned countries, there are still insufficient studies evaluating student scientific production, especially in the field of social sciences, this research was carried out ...

Method

A retrospective and descriptive bibliometric investigation was carried out, with non-probabilistic and intentional sampling that describes the scientific production of university students in indexed social science journals in SciELO Peru, Ecuador and Paraguay. 1253 manuscripts in PDF or HTML format between 2014 and 2017 were considered as the unit of analysis. Research articles (originals), review articles and letters to the editor were included in the analysis. Reviews, erratums, essays, interviews, editorials and obituaries were not considered.

For the search of the manuscripts, 3 stages were established. In the first, the

general search of the articles published by the journals indexed in the Scielo Peru, Ecuador and Paraguay database was considered, this allowed creating a database of research articles (original), review articles and letters to the editor. . In the second stage, we searched by affiliation, country and career. And in the third, to identify and be sure that the article was presented by students; the words were searched: student, university, not graduated, undergraduate.

An investigation was conducted retrospective and descriptive, with non-probabilistic and intentional sampling that describes the scientific production of university students in social science journals indexed in SciELO Peru, Ecuador and Paraguay. 1253 manuscripts in PDF or HTML format between 2014 and 2017 were considered as the unit of analysis. Research articles (originals), review articles and letters to the editor were included in the analysis. Reviews, erratum, essays, interviews, editorials and obituaries were not considered.

Table 1.

Student participation according to the total number of authors who published in journals included in SciELO

Year	Peru			Ecuador			Paraguay		
	Total of authors	Authors and student	% of student participation	Total of authors	Authors and student	% of student participation	Total of authors	Authors and students	% of student participation
2014	64	1	1.6	183	2	1.1	76	0	0.0
2015	76	1	1.3	212	4	1.9	114	0	0.0
2016	88	2	2.3	251	1	0.4	118	0	0.0
2017	212	2	0.9	302	2	0.7	130	2	1.5
Total	440	6	1.4	948	9	0.9	438	2	0.5

Of the 1253 publications, 12 (0.95%) of them had undergraduate students as participation, all were published in Spanish; 70.6% participated as a co-author, the same percentage corresponds to male authors. In

Table 2.

Features of articles published by students

Features	Total, N (%)
Idiom	Espanish 100%
Authorship	First author 5 (29.4%)
	Coautor 12 (70.6%)
Sex	Male 12 (70.6%)
	Female 5 (29.4%)
Type of study	Original 3 (25%)
	Revision 9 (75%)

The collected data were tabulated and analyzed with the statistical software SPSS version 24 and the Microsoft Excel 2018 program was used to report the frequency tables and graph.

'Articles with student participation' were defined as those in which at least one of the authors mentioned in their affiliation being an undergraduate student.

Results

A total of 19 social science journals were reviewed, included in the SciELO Peru, Ecuador and Paraguay collections. The country with the highest number of journals indexed in this database is Ecuador. 3652 authors were counted between the years 2104 and 2017 of which in Peru 1.4% had among their authors some undergraduate student, Ecuador (0.9%) and Paraguay (0.5%) (see table 1)

addition, 75% correspond to review articles and 25% have a descriptive type of research. 100% do not declare their financing (see table 2).

Research design of the original articles	Descriptive	2 (16.6%)
	Exploratory	1 (8.4%)
	Revisions	9 (75%)
Financing of originals articles	No clarification on financing	12 (100%)
	Self-financed by the authors	0
	Funded by your university	0

Figure 1 shows the constant increase in publications per year. 2017 corresponds to the largest number of articles published by students. Ecuador is the country with the highest number of articles, due to the fact that it has the largest number of social science

magazines in the Scielo collection. Peru has not had a constant student participation in its publications, decreasing since 2015, while in Paraguay student production since 2017 is displayed.

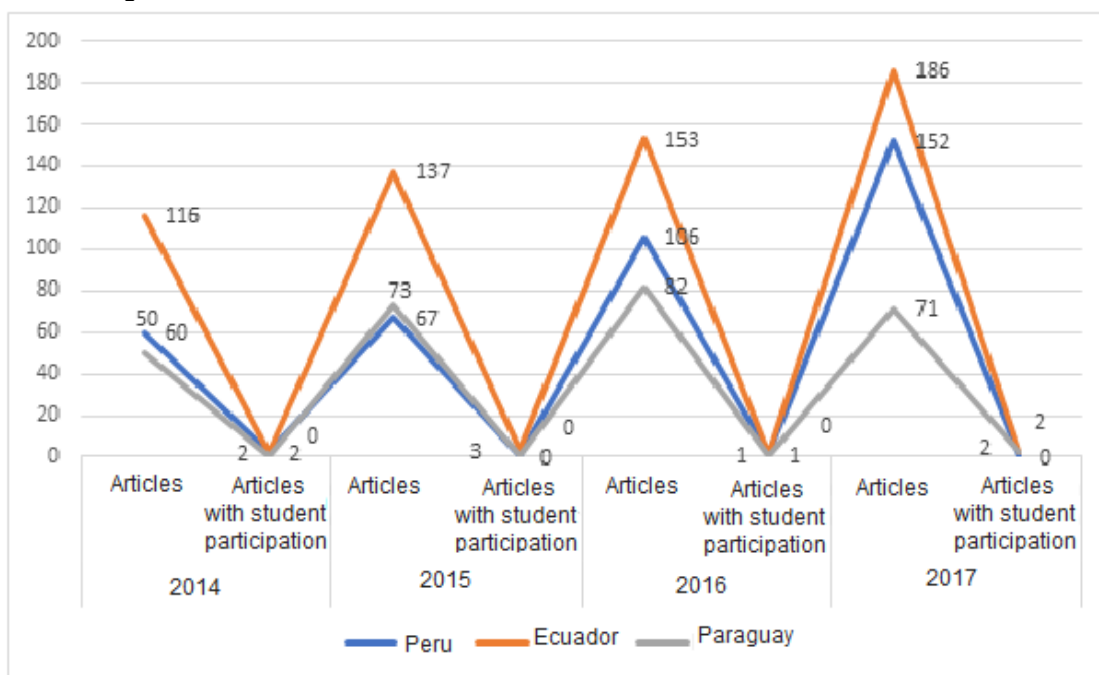


Figure 1. Comparison of published articles and articles with student participation by country. The journals with student participation were found in all three countries, with Ecuador having the largest number of magazines

included in the Scielo collection, and Peru having the highest number of magazines with student participation (50%). Ecuador stands out with the highest number of articles written by students (1.4%) (See table 3).

Table 3. Journals included in Scielo and students participation

	Journals of social sciences in SciELO	Journals whit student participation	Total of articles	Articles whit student participation
Peru	6	3 (50%)	385	2 (0.6%)
Ecuador	9	3 (33.3%)	592	8 (1.4%)
Paraguay	4	1 (25%)	276	2 (0.8 %)

The 12 articles were published by 17 students, from 09 universities corresponding to 05 countries, Colombia stands out as a

country that contributes to the scientific production of its students in foreign magazines (see table 4).

Table 4.*Student participation according to the country of origin and affiliation of the student authors*

	Articles	Students authors	Institutional Affiliation
Peru	2	6	Pontifical Catholic University of Peru (Peru) Autonomous University of Colombia Foundation (Colombia) Inca University Garcilaso de la Vega (Peru)
Ecuador	8	9	University of Los Andes (Colombia) Rutgers University (United States) San Francisco University of Quito (Ecuador) Salesian Polytechnic University of Ecuador (Ecuador) Pontifical Catholic University of Ecuador (Ecuador)
Paraguay	2	2	National University of Asunción (Paraguay)

Discussion

This study aimed to analyze student scientific production in the field of social sciences. The results show that student scientific production in Ecuador, Paraguay and Peru is in short supply. In this regard, low levels of scientific production of Latin American students in Social Sciences have been reported (Ciocca & Delgado, 2017).

The behavior of student scientific production in medicine is similar to the results of this study. For example, the study by Taype-Rondán et al., (2014) where the scientific student production in medicine in Latin America was analyzed; and the study by Gonzalez-Argote, Garcia-Rivero and Dorta-Contreras, (2016) who analyzed student scientific production in Cuban medical journals G are similar to this study. However, they are completely different from those reported by European students where it was found that 70.4% had published a peer-reviewed article in three years of academic life, although the field of study was medicine (Andersen, Østergaard, Fosbøl & Fosbøl, 2015).

Regarding student participation considering sex, 70% of the scientific production of students in Peru, Ecuador and Paraguay was given by male students compared to 29.4% of women. This data is similar to that reported in different academic contexts where men occupy a prominent place in scientific production compared to women (González-Álvarez & Cervera-Crespo, 2017).

Among the factors associated with this low level is the lack of advisers with research experience, access to databases, which are important when undertaking a research project (Mamani-Benito et al., 2019). It should also be noted that a low level of scientific production is due to the poor publication culture and the shortage of tutors or models in the research area (Gonzales-Saldaña et al., 2017).

Although technological resources are necessary, they are not in themselves the solution for increasing student achievement (Ferreira et al., 2019). Likewise, it is important to mention that in the field of scientific research in social sciences, books occupy a double weight compared to non-ISI publications (Coccia, 2017).

Teaching and learning at the undergraduate level necessarily goes through research, and this is not only formative but preferably scientific research (Hernández et al., 2019). Taking into account that the scientific production of Paraguay, Ecuador and Peru is already lower than that of their peers in Latin America, it is worrying that it is not given due importance in the training of future researchers.

The evaluation of scientific production is an indicator of scientific and technological development within a community, nation, and profession (Castro-Rodríguez et al., 2019). The United States, China, Japan and Germany lead world production and in Latin America Brazil, Mexico and Chile respectively (SCIMAGO, 2019), although Latin America together represents only 5% of world scientific production (Fischman & Ott, 2018; Leon-de La O., Thorsteinsdottir & Calderon-Salinas, 2018). These data are attributed to a low investment in R&D and the low number of researchers, there are studies that show a relationship between the number of publications and the investment made (Guerrero-Casado, 2017).

It is vitally important that students integrate into the gray mass of researchers and improve the indicators of scientific production both at the institutional level (De La Cruz-Vargas et al., 2019), country level and Latin America level. In this sense, and knowing that the research products are generally theses, dissertations, or monographs that are part of the gray literature, they reflect limited visibility and do not allow students to

obtain financing, scholarships, or other growth options.

Different studies suggest that university administrators and research program managers should strive to create incentives for faculty to collaborate with university students and promote faculty awareness that university students can contribute to their research (Morales, Grineski & Collins, 2017).

It is necessary to develop impact directives in order to generate the motivating culture of publication on the part of our students (Rueda-Barrios & Rodenes-Adam, 2016), such as the strengthening of critical thinking skills, the formation of a science research group Social, scientific writing workshops, scientific initiation programs and modules among others (De La Cruz-Vargas et al., 2019). Similar models have been applied in other contexts and have shown surprising results (Brown, 2020; Wagge et al., 2019).

A separate mention deserves the creation of student scientific magazines that, in the absence of an assessment of the student work carried out, represent an area that deserves to be analyzed (Corrales-Reyes & Dorta-Contreras, 2019; Vitón-Castillo, Díaz-Samada, Pérez Álvarez, Casín-Rodríguez & Casabella Martínez, 2019).

The study has as a limitation that no studies have been carried out that show the real contribution of the work of students who migrate to other countries to carry out undergraduate studies and cannot be determined exactly, since in some publications they sign as affiliates to their respective universities where they are affiliated (Castillo & Powell, 2019).

It is important to mention the international collaboration networks which represent an opportunity for students to improve their scientific production indicators (García, López López, Acevedo Triana, & Nogueira Pereira, 2017). The strengthening of these scientific societies stimulate scientific publication in students (Huaraca-Hilario et al., 2017). Lastly, it is important to incorporate regulations for obtaining a bachelor's degree and a bachelor's degree through the publication of scientific articles, which have already been working in some Latin American institutions (Mayta-Tristán, 2016).

It is concluded that the scientific production of students from Peru, Ecuador and Paraguay is scarce, the articles published are mainly for review and the largest number of articles is concentrated for Ecuador. Likewise, Colombia is the country that contributes the greatest scientific production to students in foreign institutions. Among the strategies shown to improve scientific production is to improve the motivation of students to publish

their results, improve research workshops and implement the process of obtaining a degree for scientific publication. In this sense, it is also necessary to implement student participation quotas in the magazines so that the number of articles published by students in them increases.

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