Scientific production in the Scopus database of a public university in the peruvian Amazon

Producción científica en la base de datos Scopus de una universidad pública de la Amazonía peruana

Edwin G. Estrada Araoz*, Doctor en Educación, Universidad Nacional Amazónica de Madre de Dios, Perú. E-mail: gestrada@unamad.edu.pe
Libertad Velásquez Giersch, Magíster en Gestión Pública, Universidad Andina del Cusco, Perú. E-mail: lvelasquezg@uandina.edu.pe
Juan C. Valencia Martínez, Doctor en Ciencias de la Salud, Universidad Andina del Cusco, Perú. E-mail: jvalenciam@uandina.edu.pe
Marilú Farfán Latorre, Doctora en Educación, Universidad Nacional Amazónica de Madre de Dios, Perú. E-mail: mfarfan@unamad.edu.pe
Willian Gerardo Lavilla Condori, Doctor en Educación, Universidad Nacional Amazónica de Madre de Dios, Perú. E-mail: wlavilla@unamad.edu.pe
Jimmy N. Paricahua Peralta, Doctor en Educación, Universidad Nacional Amazónica de Madre de Dios, Perú. E-mail: jparicahua@unamad.edu.pe
*Edwin Gustavo Estrada Araoz. E-mail: gestrada@unamad.edu.pe
We thank the Universidad Andina del Cusco for financing this research.
The authors declare that have no conflict of interest.
Received: 02/26/2021 Accepted: 05/15/2022 Published: 06/25/2022 DOI: http://doi.org/10.5281/zenodo.7225505

Abstract

At present, research has been considered one of the pillars of Peruvian universities and despite the fact that a sustained and significant increase in scientific production has been observed since the promulgation of the University Law, there are some limitations that prevent said growth from being notably superior. In this sense, the objective of this research was to describe the scientific production in the Scopus database of a public university in the Peruvian Amazon. The research was bibliometric and retrospective, where the scientific production of the Universidad Nacional Amazónica de Madre de Dios (UNAMAD) was described through the analysis of documents published and registered in Scopus. According to the results, 82 documents indexed in Scopus were located, being the authors with the most publications Gárate-Quispe, J. (10 documents), García Roca, M. (8 documents), Castillo, J. (7 documents), Estrada Araoz, E.G. (7 documents) and Alarcón Aguirre, G. (7 documents). Regarding the characteristics of the documents, it was found that most of the journals where they were published were foreign, they were original articles in English, with a greater participation of researchers affiliated with UNAMAD as co-authors, and no funding was declared. On the other hand, it was found that more documents were published in the area of Natural Sciences. Finally, it was concluded that in recent years the scientific production of UNAMAD in Scopus has increased significantly, however, compared to other universities in the Amazon and Peru, it is still limited and insufficient, so it is necessary to promote policies that promote the publication of research carried out by the university community (teachers, students, and researchers) in high-impact scientific journals, preferably indexed in Scopus.

Keywords: Scientific production, scientific articles, Scopus, research, university.

Resumen

En la actualidad, la investigación viene siendo considerada uno de los pilares de las universidades peruanas y a pesar de que se observa un incremento sostenido y significativo de la producción científica desde la promulgación de la Ley Universitaria, existen algunas limitaciones que impiden que dicho crecimiento sea notablemente superior. En ese sentido, el objetivo de la presente investigación fue describir la producción científica en la base de datos Scopus de una universidad pública de la Amazonía peruana. La investigación fue de tipo bibliométrica y retrospectiva, donde se describió la producción científica de la Universidad Nacional Amazónica de Madre de Dios (UNAMAD) a través del análisis de los documentos publicados y registrados en Scopus. De acuerdo a los resultados, se ubicaron 82 documentos indexados en Scopus, siendo los autores con más publicaciones Gárate-Quispe, J. (10 documentos), García Roca, M. (8 documentos), Castillo, J. (7 documentos), Estrada Araoz, E.G. (7 documentos) y Alarcón Aguirre, G. (7 documentos). Respecto a las características de los documentos, se halló que la mayor parte de las revistas donde se publicaron eran extranjeras, fueron artículos originales en idioma inglés, con una mayor participación de los investigadores con filiación a la UNAMAD como coautores y no se declaró recibir financiamiento. Por otro lado, se encontró que se publicaron más documentos en el área de Ciencias Naturales. Finalmente, se concluyó que en los últimos años la producción científica de la UNAMAD en Scopus se ha incrementado significativamente, sin embargo, en comparación con otras universidades de la Amazonía y del Perú, aún es limitada e insuficiente, por lo que es necesario fomentar políticas que promuevan la publicación de las investigaciones realizadas por la comunidad universitaria (docentes, estudiantes e investigadores) en revistas científicas de alto impacto e

indexadas preferentemente en Scopus.

Palabras clave: Producción científica, artículos científicos, Scopus, investigación, universidad.

Introduction

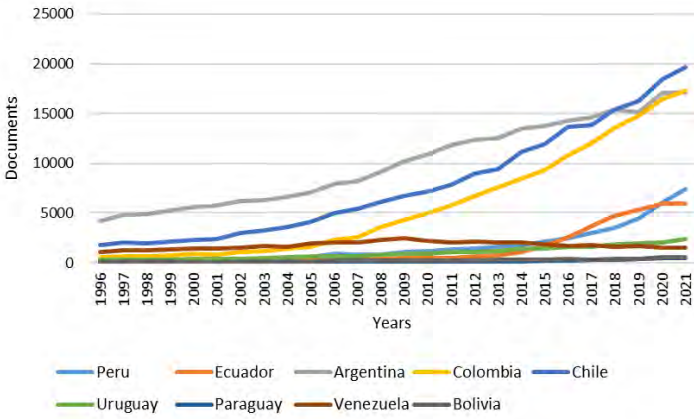
In recent years, several Peruvian universities have been promoting the development of scientific research in the educational community[1], since it plays an important role in the progress of a country through the generation of new knowledge, the development of technologies, as well as the solution to problems that affect, above all, the local and national reality[2,3]. The foregoing is consistent with the University Law 30220[4], which was enacted in 2014 and establishes that scientific research is an essential and mandatory task that must be addressed by teachers, students and graduates, so that universities must promote an investigative culture[5].

However, the results of the investigations that are carried out can be part of the new knowledge if they are published in a scientific journal[6,7], which has to comply with quality and impact indicators and must be indexed in important and demanding databases, such as Scopus[8,9]. The database uniquely combines a comprehensive citation and abstract database with rich data and linked scholarly literature in a wide variety of disciplines and currently indexes over 25,000 journals, all rigorously vetted and selected by an independent review board[10]. Currently, in many countries it is considered to generate international and national rankings of institutions[11].

Worldwide, the scientific production in the SCOPUS database has increased considerably, with China, the United States, the United Kingdom, India and Germany being the countries that contribute the most to it[12]. Production in South American countries, although growing, is still low compared to other countries, possibly due to low investment in research[13].

Regarding the Peruvian context, despite initiatives aimed at increasing scientific production, the results are still insufficient when comparing the progress with respect to more competitive South American countries[14-16]. Thus, according to the Scimago Journal & Country Rank[17] of the year 2021 recently published, Peru had a scientific production in the Scopus database that reached 7,420 documents, which represents only 4.3% of the South American production, characterizing it as a country with low scientific production, while in neighboring countries such as Brazil (100,085 documents), Chile (19,638 documents), Colombia (17,281 documents) and Argentina (17,130 documents), production was much higher (Figure 1).

Figure 1. South American scientific production in Scopus in recent years



Now, although scientific production is a fundamental part of the activity of the university teacher as part of the research and dissemination of scientific knowledge[18], there are many limitations from a quantitative perspective. The above could be explained because there are few university teachers who investigate[19], characterized by being teachers with the academic degree of doctorate[20], be advisers[21] and thesis juries[22], therefore, it could be asserted that they demonstrate that they have developed the abilities and skills to generate scientific production.

Faced with this, the importance of increasing economic investment arises, represented in the remuneration of research teachers, implementation of laboratories, financing of research projects, training of researchers, among other actions to generate quality research that translates into greater and best scientific production[23,24].

In Peru, there are no investigations about the scientific production in the Scopus database in the universities of the Amazon, for which the present wants to explore the reality in which they find themselves so that, based on the findings, they can Institutional policies must be designed that promote greater participation of teachers and students in scientific production, which will also improve the visibility of the university. So, the general objective of this research was to describe the scientific production in the Scopus database of a public university in the Peruvian Amazon.

Materials and methods

Project

The research was bibliometric and retrospective[25], where the scientific production of UNAMAD was described through the analysis of the documents published and registered from 2010 (year in which the first document was published) to May 2022 in the Scopus database. This database was chosen due to its relevance, scope and advantages[26]. Likewise, it has a wide and multidisciplinary coverage of journals, standardized

impact register and bibliometric tools that allow quick filtering and analysis[27].

Procedure

To retrieve the information found in Scopus, a search was made by affiliation "Universidad Nacional Amazónica de Madre de Dios" whose affiliation identifier is 60105286. Then the database was downloaded according to the chosen variables: author, document title, year, title of the source, type of document, language, pertinent area and author for correspondence. It is necessary to specify that authors who did not have affiliation with the university were excluded. On the other hand, information was obtained from the Scimago Journal & Country Rank corresponding to the year 2021 to determine the quartile of the journals, as well as the country of origin. To perform the statistical analysis, it was necessary to use the Microsoft Excel program, in which the data was summarized and the figures were prepared for a better interpretation.

Ethical aspects

In the present investigation there was a minimal risk, since no intervention was carried out nor were data from patients or biological samples obtained, for which the authorization of an Institutional Ethics Committee was dispensed with. Finally, the authors guarantee the confidentiality of the information obtained, which will not be used for purposes other than the preparation of this work.

Results

In total, 82 documents indexed in Scopus by UNAMAD were identified, which demonstrates the limited scientific production. This university is 21 years old, however, the first documents were indexed in 2010 and were 3 scientific articles that were carried out in cooperation with the University of Florida (United States). From 2012 to 2019, production was limited, however, as of 2020 there was a significant increase and would be explained by the greater presence of more research teachers, as well as inter-institutional work (Figure 2).

Figure 2. Scientific production in Scopus of the UNAMAD

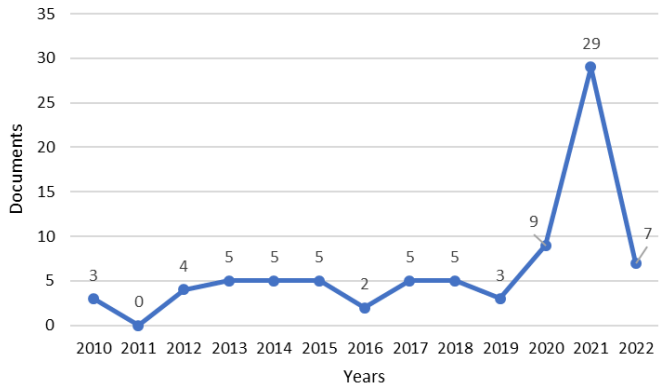


Table 1 shows the 10 authors affiliated with UNAMAD who are the most productive. Among them, Gárate-Quispe, J. (10 documents), García Roca, M. (8 documents), Castillo, J. (7 documents), Estrada Araoz, E.G. (7 documents) and Alarcón Aguirre, G. (7 documents). It is necessary to specify that the previously mentioned authors have been recognized as research professors, both by the National Council of Science, Technology and Technological Innovation - (CONCYTEC), as well as by the university.

Table 1. Authors affiliated with the UNAMAD with the highest production in Scopus

Autor name	f
Gárate-Quispe, J.	10
García Roca, M.	8
Castillo, J.	7
Estrada Araoz, E.G.	7
Alarcón Aguirre, G.	7
Rodríguez, L.	6
Correa-Núñez, G.	5
Gallegos Ramos, N.	5
Mamani, H.	5
Chávez, A.	4

Source: Scopus

According to Table 2, the journals indexed in Scopus where they were published most frequently were Archivos Venezolanos de Farmacología y Terapéutica (5), Ecosistemas (3), Revista de Investigaciones Veterinarias del Perú (3), Scientia Agropecuaria (3) and BMC Research Notes (3). It is observed that 80% of the journals with the most publications are foreign and only 20% are Peruvian. Likewise, it can be seen that most of them are located in quartiles 1 and 2, which denotes that they are of high impact and visibility.

Table 2. Journals indexed in Scopus with the highest publication frequency of the UNAMAD

Source title	n	Country	Quartile
Archivos Venezolanos de Farmacología y Terapéutica	5	Venezuela	Q4
Ecosistemas	3	Spain	Q4
Revista de Investigaciones Veterinarias del Perú	3	Peru	Q3
Scientia Agropecuaria	3	Peru	Q3
BMC Research Notes	3	United Kingdom	Q2
Forest Ecology and Management	2	Netherlands	Q1
Frontiers in Forests and Global Change	2	Switzerland	Q1
Human Ecology	2	United States	Q1
Journal of Land Use Science	2	United Kingdom	Q1
Journal of Tropical Ecology	2	United Kingdom	Q2

Source: Scimago Journal & Country Rank 2021.

Table 3 describes the characteristics of the documents indexed in Scopus. It can be seen that almost all the documents were original articles (93.9%) followed by conference paper (2.5%), review articles (1.2%) and notes (1.2%). Regarding language, 67.1% were documents published in English and 32.9% in Spanish, which is consistent, since most of the

journals where they were published were foreign and only accepted documents in English. Regarding authorship, 61% were co-authors and 39% main authors. Finally, it can be seen that 62.2% of the research works carried out and published did not receive any funding, while 37.8% did receive some economic subsidy so that they can be carried out.

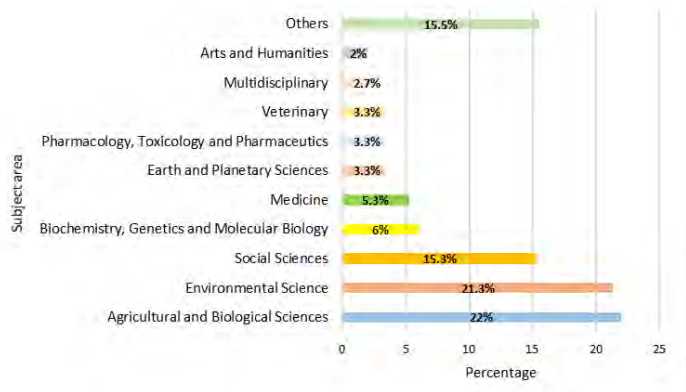
Table 3. Characteristics of the documents indexed in Scopus with affiliation from the UNAMAD

Characteristics	n= 82	%
Document type		
Original article	77	93.9
Conference paper	2	2.5
Review	1	1.2
Note	1	1.2
Letter	1	1.2
Language		
English	55	67.1
Spanish	27	32.9
Authorship		
Correspondent	32	39.0
Co-author	50	61.0
Financing		
Does not clarify financing	51	62.2
Funded by an institution	31	37.8

Source: Scopus.

According to Figure 3, the main thematic areas linked to the documents published in Scopus were Agricultural and Biological Sciences (22%), Environmental Science (21.3%), Social Sciences (15.3%), Biochemistry, Genetics and Molecular Biology (6%) and Medicine (5.3%). As can be seen, documents in Natural Sciences were published mostly at UNAMAD, which coincides with the presence of more research professors in the aforementioned area of knowledge.

Figure 3. Subject areas where more documents are published



Discussion

Since 2014, the date on which University Law 30220 was enacted[4], a gradual increase in scientific production has been observed in Peruvian universities, however, it is not sustained in all of them, despite the benefits it implies for their institutional growth and visibility. For this reason, in the present investigation we sought to describe the scientific production in the Scopus database of a public university in the Peruvian Amazon.

First, it was found that UNAMAD has 82 documents indexed in Scopus, including original articles, conference paper, review articles and notes, which shows a low and limited scientific production. This reality would be caused mainly because for many years teachers and researchers carried out parallel academic and administrative tasks, which caused overload, there was little training on research and scientific writing and the translation of articles was not financed, as well as processing charges when they were sent to high-impact magazines. Regarding student production, it was due to the absence of research hotbeds and to the fact that formative research was not promoted from the first cycles.

Now, when analyzing the scientific production of UNAMAD since the enactment of University Law 30220, there was no significant increase until 2020, which could be explained because on that date more research professors recognized by CONCYTEC and the UNAMAD, who also began to receive the year 2017 an economic bonus corresponding to half of their salary for their condition as researchers, as long as they are appointed teachers.

The result reported in this research coincides with that reported in a research carried out in Peru, whose objective was to compare the scientific production of Peruvian teachers from two universities (Universidad César Vallejo and Pontificia Universidad Católica del Perú) and its conclusions indicate that the production science was incipient, which affected the educational environment, since they were not fulfilling their role as trainers or contributing positively to the development of the country[16]. On the other hand, it differs from what was found in a study also carried out in Peru, where they sought to evaluate the scientific production of the University of San Martín de Porres between the period 1995 and 2020, concluding that there were 880 articles indexed in Scopus, number ten times greater than what was found in UNAMAD, which would be explained by the presence of consolidated research teams, the number of research professors recognized by CONCYTEC and the investment they make to encourage and increase scientific production[28].

Regarding the characteristics of the publications, it was determined that almost all the documents that are indexed in Scopus were original articles (93.9%) followed by conference summaries (2.5%), review articles (1, 2%) and notes (1.2%). Likewise, the language in which they were published was mostly English and would have reason to be because it is considered the lingua franca of the scientific community and because about 80% of the specialized journals that are

indexed in Scopus are published in said language. idiom[29]. On the other hand, it is observed that the majority of researchers who published fulfilled the role of co-authors, which suggests the need to further develop their investigative skills so that they can lead research teams and link with researchers from other universities, both Peruvian and foreign. Finally, it was found that few investigations were carried out and published under the financing of external institutions, so it is necessary to motivate authors to apply for contests so that their investigations are financed by institutions such as the National Fund for Scientific, Technological and Educational Development. of Technological Innovation (FONDECYT), PROCIENCIA, the United States Agency for Development (USAID), among others.

Conclusion

The present investigation concluded that the scientific production of UNAMAD in Scopus is low, since they only have 82 documents indexed in said database and despite the fact that in recent years it has increased significantly, it is limited and insufficient compared to other universities. of the Amazon and Peru. For this reason, it is necessary to promote policies that promote the financing and publication of research carried out by the university community (teachers, students and researchers) in high-impact scientific journals and preferably indexed in Scopus or Web of Science. At the same time, a research culture must be promoted in the university based on the development of research skills to increase the quantity and quality of publications.

References

1. Estrada, E., Córdova, F., Gallegos, N. & Mamani, H. Actitud hacia la investigación científica en estudiantes peruanos de educación superior pedagógica. Apuntes Universitarios. 2021. 11(3):60-72. https://doi.org/10.17162/au.v11i3.691
2. Mamani, O. Actitud hacia la investigación y su importancia en la elección de la modalidad de tesis para optar el título profesional. Revista Científica de Ciencias de la Salud. 2011. 4(1):22-27. https://doi.org/10.17162/rccs.v4i1.158
3. Ortega, R., Veloso, R. y Samuel, O. Percepción y actitudes hacia la investigación científica. Academo. 2018. 5(2):101-109. https://revistacientifica.uamericana.edu.py/index.php/academo/article/view/93
4. Ministerio de Educación. Ley Universitaria – Ley 30220. Lima: El Peruano; 2014. https://diariooficial.elperuano.pe/pdf/0021/ley-universitaria-30220.pdf
5. Estrada, E., Gallegos, N. & Huaypar, K. Calidad metodológica de las tesis de pregrado de una universidad pública peruana. Revista Universidad y Sociedad. 2022. 14(4): 22-29. https://rus.ucf.edu.cu/index.php/rus/article/view/2838
6. Solís, F., Aguilar, A. & Cruz, M. H. Producción científica de asesores de tesis: ¿cuál es la realidad de la carrera de Nutrición en el Perú? Horizonte Médico (Lima). 2022. 22(1): e1497. https://doi.org/10.24265/horizmed.2022.v22n1.09
7. Robles, V., Serrano, C., González, D., Rodríguez, G., Enseñat, J. & Soto, A. La investigación y la producción científica de los profesores de Enfermería en el Municipio Cárdenas. Revista Médica Electrónica. 2020. 42(5):2193-2207. http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1684-18242020000502193
8. Taype, Á. & Luque, L. Producción científica en Scopus de la Universidad de San Martín de Porres, Lima, Perú. Horizonte Médico (Lima). 2014. 14(4):37-42. https://www.horizontemedico.usmp.edu.pe/index.php/horizontemed/article/view/9
9. Huanca-Arohuanca, J. Combate cuerpo a cuerpo para entrar a la Liga de los Dioses: Scopus y Web of Science como fin supremo. Revista Venezolana de Gerencia. 2022. 27(7):663-679. https://doi.org/10.52080/rvgluz.27.7.43
10. Elsevier. About Scopus - Abstract and citation database [Internet]. Elsevier. 2022. [citado el 16 de mayo del 2022]. Disponible en: https://www.elsevier.com/solutions/scopus?dgcid=RN_AGCM_Sourced_300005030
11. Chachaima, J., Fernández, D. & Atamari, N. Publicación científica de docentes de una escuela de medicina peruana: frecuencia y características asociadas. Educación Médica. 2019. 20(S2): 2-9. https://doi.org/10.1016/j.edumed.2017.10.024
12. Atamari, N., Ccorahua, M., Rodríguez, M., Santander, C. & Pacheco, J. Bibliometric analysis of scientific production in Scopus by the Instituto Nacional de Salud Del Niño-Breña, Peru, 2010–2019. Journal of Hospital Librarianship. 2022. 2022:1-14. https://doi.org/10.1080/15323269.2022.2054601
13. Estenssoro, E., Friedman, G. & Hernández, G. Research in Latin America: opportunities and challenges. Intensive Care Medicine. 2016. 42(6):1045-1047. https://doi.org/10.1007/s00134-016-4342-3
14. Huamaní, C. & Mayta, P. Producción científica peruana en medicina y redes de colaboración, análisis del Science Citation Index 2000-2009. Revista Peruana de Medicina Experimental y Salud Pública. 2010. 27(3):315-325. https://doi.org/10.17843/rpmesp.2010.273.1488
15. Mendoza, G., Chachaima, J., Mejia, C., Mirano, M., Ramos, K., Calla, M., De-Los-Ríos, A., Ccorahua, M., Santander, A., Centeno, A., Miranda, F. & Huaraca, R. Análisis de producción, impacto y redes de colaboración en investigaciones científicas en Scopus en Perú de 2000 a 2019. Medwave. 2021. 21(2):e8121. https://doi.org/10.5867/medwave.2021.02.8121
16. Barrutia, I., Acosta, E. & Marín, T. Producción científica de profesores en Universidades Peruanas: motivaciones y percepciones. Revista San Gregorio. 2019. 1(35): 86-96. http://dx.doi.org/10.36097/rsan.v1i35.1140
17. SJR Compare Countries [Internet]. Scimagojr.com. [Citado el 16 de mayo del 2022]. Disponible en: https://www.scimagojr.com/comparecountries.php
18. Delgado, R., Delgado, A. & Hermitaño, B. Determinantes para publicación de artículos científicos en revistas indexadas: caso Universidad Nacional Agraria del Perú. Revista General de Información y Documentación. 2021. 31(1):317-330. https://doi.org/10.5209/rgid.76972
19. Carranza, R., Turpo, J., Hernández, R., Mamani, O. & Apaza, A. Scientific production of rectors of Peruvian universities. Frontiers in Education. 2022. 7:772887. https://doi.org/10.3389/feduc.2022.772887
20. Mejía, C., Valladares, M. & Valladares, D. Baja publicación

en revistas científicas de médicos peruanos con doctorado o maestría: Frecuencia y características asociadas. Educación Médica. 2018. 19(S2):135-141. https://doi.org/10.1016/j.edumed.2017.01.009

21. Mamani, O., Verástegui, A., Mejia, C. & Caycho, T. Scientific publication of psychology thesis advisors from 30 Peruvian universities. Revista Interamericana de Psicología/ Interamerican Journal of Psychology. 2020. 54(1):e1124. https://doi.org/10.30849/ripijp.v54i1.1124

22. Mamani, O., Ventura, J. & Caycho, T. Publicación científica de docentes que conforman el jurado de tesis en una Facultad de Ciencias de la Salud peruana. Revista Cubana de Información en Ciencias de la Salud. 2019. 30:e1373. http://acimed.sld.cu/index.php/acimed/article/view/1373

23. Moquillaza, V. Producción científica asociada al gasto e inversión en investigación en universidades peruanas. Anales de la Facultad de Medicina. 2019. 80(1): 56-59. https://doi.org/10.15381/anales.v80i1.15626

24. Millones, P., Yangali, J., Arispe, C., Rivera, O., Calla, K., Calla, R., Requena, M. & Minchón, C. Research policies and scientific production: A study of 94 Peruvian universities. PloS One. 2021. 16(5):e0252410. https://doi.org/10.1371/journal.pone.0252410

25. Hernández, R. & Mendoza, C. Metodología de la investigación: las rutas cuantitativa, cualitativa y mixta. México: McGraw-Hill; 2018.

26. De Granda, J., Alonso, A. & Roig, F. ¿Qué base de datos debemos emplear para nuestros análisis bibliográficos? Web of Science versus SCOPUS. Archivos de Bronconeumología. 2011. 47(4):213. https://doi.org/10.1016/j.arbres.2010.10.007

27. Mongeon, P., Paul, A. The journal coverage of Web of Science and Scopus: a comparative analysis. Scientometrics. 2016. 106:213-228. https://doi.org/10.1007/s11192-015-1765-5

28. Livia, J., Merino Soto, C. & Livia Ortiz, R. Producción científica en la base de datos Scopus de una Universidad Privada del Perú. Revista Digital de Investigación en Docencia Universitaria. 2022. 16(1):e1500. https://doi.org/10.19083/ridu.2022.1500

29. Niño, M. El inglés y su importancia en la investigación científica: algunas reflexiones. Revista Colombiana de Ciencia Animal - RECIA. 2013. 5(1):243-254. https://doi.org/10.24188/recia.v5.n1.2013.487