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Evaluation of scientific production in higher education using Scopus and Scimago: An analysis of the visibility and impact of educational publications

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Abstract: This study investigates the effectiveness of the Scopus and Scimago platforms. Analysis of the evaluation of university scientific production at the National University of Chimborazo (UNACH). A focus study was applied to improve the visibility and impact of educational publications. The perceptions and experiences of 25 teachers were analyzed through qualitative interviews. The main objective was to generate a theoretical approach that conceptualizes the effective use of the Scopus and Scimago platforms for the evaluation of scientific production, identifying their advantages, disadvantages and challenges in the context of UNACH. Semi-structured interviews were applied to 25 UNACH professors. The data were coded and analyzed using Atlas.ti version 24 software. Categories, codes, dimensions and subdimensions emerging from the testimonies were identified. The results revealed three main categories: "Visibility of Publications", "Technical and Training Challenges" and "Impact on Research". The professors highlighted that Scopus offers greater visibility and academic recognition, while Scimago has limitations in the analysis of citations and access. Technical and training barriers were identified, as well as a need for greater training and institutional support. The study concluded that, although Scopus and Scimago are valuable tools for the evaluation of scientific production. Improved training and institutional support are essential to maximize their effectiveness. In addition, it is recommended to consider Scopus Preview for up-to-date analyses and comparative studies to get a more complete view of studies.

Keywords: *Academic evaluation, Academic platforms, Higher education, Publication visibility, Scientific production.*

1. Introduction

The evaluation and visibility of scientific production has become a fundamental aspect for higher education institutions worldwide, because international rankings that measure the quality of higher education, such as the Shanghai Ranking, consider indicators related to scientific production such as publications and citation impact. This puts pressure on universities to improve on these indicators. The internationalisation and interconnection of knowledge at a global level means that the visibility and circulation of research results are fundamental to establish collaborations, attract funding and position themselves in academic networks [1]. Governments and funding agencies in many countries consider scientific output as a measure of the return on investment and output of higher education institutions [2]. This place demands on them to demonstrate their contribution to knowledge generation. In a context of high costs and competition for resources, scientific productivity is a quantitative indicator of the ability of institutions to obtain competitive funding and position themselves as leaders in priority areas [3]. Society requires institutions that receive public funding to demonstrate with evidence how these investments have translated into concrete benefits, with scientific output being an objective metric of this.

Indexing systems and bibliographic databases have evolved significantly from the 1970s to the present day, driven by several key factors. The evolution of these databases can be divided into several

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stages, from the 1970s to the 1980s when the first electronic bibliographic databases began to be established [4]. Libraries began to adopt information management systems that facilitated data search and retrieval. Then in the 1990s with the advent of the Internet there was a revolution in information access. Online databases were developed that allowed users to access scientific articles and publications more efficiently. This period marked the beginning of the open access culture, with initiatives that sought to democratise access to scientific information [5]. Finally, the third stage is from the year 2000, with intensified efforts to improve the interoperability and coverage of databases [6]. Systems such as PubMed and Scopus were created, offering extensive collections of scientific literature and advanced search tools. In this context, countries such as the United States, the United Kingdom and Germany have led the development of research assessment models that serve as international benchmarks [7].

The UK's research evaluation system, known as the Research Excellence Frame-work (REF), was notable for its comprehensive approach and its impact on the allocation of research funding [8]. This model considered not only scientific output in quantitative terms, but also its social and economic impact, setting a precedent for the holistic evaluation of academic research.

In the United States, the National Science Foundation (NSF) implemented the Science and Engineering Indicators, a system of metrics that made it possible to assess scientific performance at the national and institutional levels [9]. This multidimensional approach included indicators of output, international collaboration and knowledge transfer, providing a comprehensive view of the research ecosystem.

Germany developed the Exzellenzinitiative, an excellence initiative that promoted competitiveness and research quality at German universities [10]. This programme not only evaluated scientific output, but also promoted the creation of clusters of excellence and graduate schools, boosting the international visibility of participating institutions.

In the Asian context, China implemented the Double First-Class University Plan, a national strategy to raise the quality and prestige of its universities worldwide [11]. This plan integrated metrics of scientific output with indicators of innovation and international collaboration, reflecting the growing importance of global visibility in academic evaluation [12]. These international models shared common features, such as the use of recognised bi-bliometric databases, the consideration of the impact factor of publications, and the integration of qualitative and quantitative indicators [2], [13], [14]. Elsevier's Scopus platform and the Scimago Journal & Country Rank (SJR) emerged as fundamental tools in these evaluation processes, providing standardised and globally comparable data [15].

The adoption of these evaluation systems had a significant impact on research policies and scholarly publishing practices [16]. There was an increase in international collaboration, greater attention to the quality and relevance of publications, and a strategic approach to the selection of journals for the dissemination of research results [17]. In Latin America, the evaluation of university scientific production experienced a remarkable development, although with particular challenges related to international visibility and the adaptation of global metrics to regional contexts. Countries such as Brazil, Mexico and Chile led initiatives to improve the quality and impact of their academic publications, implementing evaluation systems that, although inspired by international models, sought to respond to local realities [9], [18], [19].

Brazil, through its CAPES (Coordenação de Aperfeiçoamento de Pessoal de Nível Superior) evaluation system, established a reference framework for the evaluation of postgraduate programmes and associated scientific production [20]. This system incorporated the use of international metrics, such as the impact factor and indexing in databases such as Scopus and Web of Science, but also developed Qualis, a journal ranking system specific to the Brazilian context [11], [21], [22]. In Mexico, the National System of Researchers (SNI) of the National Council of Science and Technology (CONACYT) implemented an evaluation model that recognised and stimulated high quality scientific production [23]. This system considered publication in journals indexed in international databases as a key indicator of quality, promoting the global visibility of Mexican research.

Chile, for its part, through the National Commission for Scientific and Technological Research (CONICYT), now the National Agency for Research and Development (ANID), developed policies to promote publication in high-impact journals and the internationalisation of research [24]. The

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implementation of incentives for publication in journals indexed in Scopus and Web of Science contributed to increasing the visibility of Chilean scientific production on the global stage [8].

These Latin American examples illustrated a regional trend towards the adoption of inter-national evaluation standards, with a growing emphasis on the use of platforms such as Scopus and Scimago Jour-nal & Country Rank (SJR) to measure the impact and quality of publications. However, there was also a concern to maintain and strengthen regional publication systems, such as SciE-LO and Latindex, which played a relevant role in the visibility of scientific production in Spanish and Portuguese [25]. In the specific context of Ecuador, and particularly at the National University of Chimborazo (UNACH) in Riobamba, the evaluation of scientific production faced significant challenges [8], [16], [26], [27]. Despite efforts to increase the visibility and impact of academic publications, important gaps persisted compared to international and regional standards.

Ecuador's national policy set ambitious targets for academic output, requiring a per capita output rate of at least 1.5 points every three years for university faculty. However, implementation of this policy was hampered by a number of factors, including unfamiliarity with international evaluation platforms and the prevalence of publications in low impact or regional journals [28].

At UNACH, as in other Ecuadorian institutions, there was a tendency to prioritise quantity over quality in scientific production, with a preference for publishing in journals indexed in regional databases such as Latindex and Scielo [29]. This practice, while contributing to the dissemination of knowledge at the local level, limited the visibility and international impact of the research produced [30]. The lack of adequate training and guidance on the use of platforms such as Scopus Preview and Scimago Journal Ranking (SJR) generated confusion among UNACH researchers. The discrepancy in the information provided by these platforms, particularly regarding quartiles and journal impact, created uncertainty and frustration in the process of selecting journals for publication [31].

In addition, the presence of predatory journals and the difficulty in distinguishing them from legitimate publications represented a significant risk for UNACH researchers. The lack of ability to verify the authenticity and real impact of journals exposed academics to potential fraud and publications that did not effectively contribute to their valuable scientific output [9], [32]. The situation was aggravated by the reliance on outdated information provided by the SJR platform, recommended by the Council for Quality Assurance in Higher Education (CACES). This recommendation, based on a 2014 promotion, did not consider the evolution of evaluation tools and the availability of more up-to-date data in Scopus Preview [16]. The persistence of these problems threatened to perpetuate a cycle of low visibility and impact of the scientific output of UNACH and other Ecuadorian institutions [33]. Without adequate intervention, there was a risk that the gap between Ecuadorian research and international standards would continue to widen, affecting academic competitiveness and opportunities for international collaboration [8], [34].

In this context, the urgent need for a study to evaluate the effectiveness, strengths and weaknesses of the Scopus Preview and SJR platforms in the Ecuadorian context became evident. The lack of research on this specific topic in Ecuador represented an important opportunity to generate knowledge that could inform more effective institutional and national policies for the evaluation and promotion of quality scientific production [18].

Based on the problematic situation, the following question emerges:

How can the evaluation of university scientific production at the National University of Chimborazo be improved through the effective use of the Scopus and Scimago platforms?

To answer this question, the following objective is set out:

To generate a theoretical approach that conceptualises the effective use of the Scopus and Scimago platforms for the evaluation of university scientific production at the National University of Chimborazo, in order to improve the visibility and impact of educational publications

2. Materials and Methods

2.1. Research Approach

The type of research chosen was phenomenological. This type of study focuses on describing and understanding the lived experiences of individuals with respect to a specific phenomenon [37].

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Phenomenology is appropriate for this study as it allows us to explore teachers' perceptions of the visibility and impact of their publications through Scopus and Scimago [38].

2.2. Research Design

The study was carried out at the National University of Chimborazo, specifically at the Faculty of Humanities, Education Sciences and Technologies. The eligible population consisted of 150 teachers with PhD and doctoral degrees, and with more than 5 years of experience in higher education. Using a non-probability purposive selective sample, 25 teachers who met the established selection criteria were selected [39].

2.3. Population and Sample

Two main techniques were used: document review and interview. The interviews were conducted with 25 selected teachers, who participated on a voluntary basis after receiving an invitation. The instrument used was a guide of unstructured questions designed to explore in depth the teachers' perceptions and experiences of using Scopus and Scimago [39].

2.4. Data Collection Techniques and Instruments

Two main techniques were used: documentary review and interview. The interviews were conducted with 25 selected teachers, who participated voluntarily after receiving an invitation. The instrument used was a guide of unstructured questions, designed to explore in depth the perceptions and experiences of teachers on the use of Scopus and Scimago (see Table 1).

Table 1.
Interview questions guide.

Universidad nacional de chimborazo UNACH	
Research:	
Date: ___/___/___	
Questions	Observations
How do you describe your experience with the use of Scopus and Scimago in the evaluation of your scientific production?	
What do you consider to be the main advantages and disadvantages of these platforms?	
In what way do you think these platforms have influenced the visibility of your publications?	
What difficulties have you faced when using Scopus and Scimago?	
What suggestions would you have to improve the effectiveness of these platforms in the context of UNACH?	

2.5. Analysis of Results

The Atlas.ti software was used for the hermeneutic analysis of the various research sources obtained from the Scopus Elsevier platform with a validity of five years. The opinions of the interviewees were analysed in an interpretative manner, and the information was contrasted using the qualitative software Atlas.ti, which allowed the generation of emerging categories [40]. The COPE standards of research ethics were applied, guaranteeing the codification and confidentiality of the information [41]. No names or surnames of the interviewees were used, and codes such as T.1 for teacher 1, T.6 for teacher 6, and T.23 for teacher 23 were used. This methodological approach ensures a rigorous and ethical analysis, providing a detailed and contextualized view of the perceptions and experiences of teachers on the use of Scopus and Scimago in the evaluation of university scientific production.

3. Results

Through the semi-structured interview process applied to 25 professors of the Faculty of Education of the National University of Chimborazo, three main categories were obtained related to the perception

of the use of the Scopus and Scimago platforms for the evaluation of scientific production. These categories were coded in the ATLAS.ti system version 24.

3.1. Category 1: Visibility of Posts

The category "Visibility of Publications" covers various aspects related to the perception and impact of the scientific publications of the interviewed professors (see Table 2). This category was broken down into several dimensions and subdimensions, which were coded using the Atlas.ti version 24.

Table 2.
Category, visibility of posts at the university under study.

Code	Dimensions	Subdimensions	SJR	Scopus preview
Increase in visibility	Metrics impact	Citations, H-Index	Limited analysis of citations, does not exist Author Profile	Detailed analysis and updated from citations and author profile
	Global access	Distribución Geográfica, Colaboraciones Internacionales	Falta de acceso amplio	Acceso global y colaboraciones optimizadas
Academic recognition	Recognitions and awards	Awards international honorable mentions	Less recognition	Increased visibility and recognition
	Prestige of publications	Magazine rankings, peer evaluations	Rankings of arts reliable	Rankings of more journals accurate

Through the interview process, various aspects related to the visibility of academic publications at the National University of Chimborazo were identified. These interviews were coded in Atlas.ti version 24. This analysis allowed for a systematic and rigorous organisation of the data obtained. The emerging categories focused on the visibility of publications, highlighting two main codes: 'Increased Visibility' and 'Academic Recognition'.

Increased Visibility: This code was subdivided into two key dimensions: 'Impact Metrics' and 'Global Access'. In terms of impact metrics, the testimonies of T.3 and T.6 highlighted the limitations in citation analysis and the absence of an author profile on the SJR platform. In contrast, the Scopus Preview platform provided a detailed and up-to-date citation analysis, including a robust author profile. This is reflected in the sub-dimensions of citations and H-index, where Scopus Preview proved to be significantly superior. According to the testimonies of the interviewed academics T.10 and T.16, the use of Scopus would allow to extend the citation analysis and increase the author profile, generating the codes. On the other hand, T.8, T.18 and T.1 indicated that it would facilitate a wider geographical distribution of publications and collaborations at an international level. Considering these dimensions, it is established that the use of Scopus could improve the visibility of the faculty's publications.

The global access dimension covered geographical distribution and international collaborations. T.8, T.18 and T.1 faculty members indicated that the lack of broad access in SJR limited the visibility of their research. On the other hand, Scopus Preview facilitated optimised global access, improving international collaborations and the geographical distribution of publications. Academic Recognition: This code included the dimensions of 'Awards and Prizes' and 'Publication Prestige'. In the first dimension, testimonials indicated that the SJR platform offered less recognition in terms of international awards and honourable mentions. Scopus Preview, however, significantly increased the visibility and recognition of publications, as mentioned by several faculty interviewed. In terms of 'Academic Recognition', it was evident that T.23 and T.14 teachers experienced 'less recognition' when using SJR, compared to the 'greater visibility and recognition' achieved through Scopus Preview. This is crucial, as

academic recognition not only translates into prestige, but also influences the possibility of obtaining funding and resources for future research.

In terms of the prestige of publications, peer review and journal rankings were crucial sub-dimensions. Teachers indicated that SJR rankings were less reliable compared to the more accurate Scopus Preview rankings, which directly impacted on the perceived prestige of their publications. T.9 and T.3 stated that the journal rankings provided by SJR are 'less reliable'. In contrast, for T.17, T.18 and T.25 Scopus Preview provides 'more accurate journal rankings', allowing researchers to select journals that truly reflect the quality and impact of their work, thus contributing to the improvement of their visibility in academia.

3.2. Category 2. Technical and Training Challenges

The second category identified from the interviews focused on the technical and training challenges associated with the use of the Scopus and Scimago platforms. Two main codes were highlighted: "System Complexity" and "Access and Costs" (See Table 3).

Table 3.
Category, technical and training challenges.

Code	Dimensions	Subdimensions	SJR	Scopus preview
System complexity	Learning curve	Initial training, training resources	Limited resources	Training and abundant resources
	Use of tools	Functionality advanced software updates	Basic features	Advanced tools and updated
Access	Economic restrictions	Subscriptions, licenses	Accessibility	Options subscribe more affordable
	Barriers institutional	Access policies, support administrative	Lack of institutional support	Improvements in access and support

System Complexity: This code was divided into the dimensions of 'Learning Curve' and 'Use of Tools'. In relation to the learning curve, T.4 and T.9 teachers' testimonies indicated that JRS training resources were limited, making initial training difficult. In contrast, Scopus Preview provided abundant training and resources, facilitating efficient use of the platform. The testimonies revealed 'System Complexity' as a significant obstacle. Teachers T.1 and T.2 mentioned that the 'learning curve' for using SJR is high, and that 'limited resources' for initial training hinder its effective use. In contrast, Scopus Preview was positively rated by T.22 as offering 'abundant training and resources', which makes it easier for researchers to adapt to the platform.

In relation to 'Use of Tools', T.11 and T.23 expressed that SJR provides 'basic functionalities', which limits their ability to perform an in-depth analysis of their publications. On the other hand, Scopus Preview was highlighted by T.24 and T.20 as offering 'advanced and up-to-date tools', allowing researchers to perform more efficient searches and obtain more relevant data for their work. The dimension of tool usage covered advanced functionalities and software updates. T.11 and T.20 mentioned that SJR offered only basic functionalities, while Scopus Preview provided advanced and updated tools, improving user experience and efficiency in the management of scientific output.

Access: This code included the dimensions of 'Economic Constraints' and 'Institutional Barriers'. T.5 and T.12 teachers' testimonies highlighted those costs are practical and open to SJR. In contrast, Scopus Preview offered more affordable equitable accessibility options, but must be implemented in an institutional, personal or open way by facilitating access to the platform. In terms of institutional barriers, the testimonies of T.1 and T.24 indicated that lack of institutional support was a recurrent problem in the use of SJR, even though it is recommended by CACES. Scopus Preview, on the other hand, presented improvements in access policies and greater administrative support, which favoured the

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integration and use of the platform in the university context. Finally, in the 'Institutional Barriers' dimension, T.12 identified that SJR suffers from 'lack of institutional support' as it operates in a dependent manner, which hinders its effective implementation in universities. In contrast, Scopus Preview according to T.25 has shown 'improvements in access and support policies', suggesting a more favourable environment for researchers seeking to maximise the impact of their publications.

3.3. Category 3. Impact on Research

The third emerging category of interviews focused on the impact of platforms on research (See Table 4). This category was broken down into two main codes: "Scientific Collaborations" and "Innovation and Development".

Table 4.
Category 3. Impact on research.

Code	Dimensions	Subdimensions	SJR	Scopus preview
Scientific collaborations	Networks research	Collaborative projects, congresses and conferences	Limited networks of research	Extensive collaboration networks
	Publications joint	Co-authorships, articles multidisciplinary	Less opportunities to co-authorships	Greater opportunity to publications joint
Innovation and development	Knowledge transfer	Patents, models innovation	Limited knowledge transfer	Facilitates the transfer of knowledge
	Practical application	Application projects, case studies	Applications limited practices	Greater practical applicability

Scientific Collaborations: This code was divided into the dimensions of "Research Networks" and "Joint Publications". The testimonies of professors T.7 and T.14 pointed out that research networks in JRS were limited, restricting opportunities for collaboration. The testimonies of professors T.10 and T.13 reflected that "Scientific Collaborations" are null when using SJR, with "no research network" and no opportunities to participate in collaborative projects. On the contrary, Scopus Preview facilitated extensive collaboration networks, promoting collaborative projects and participation in congresses and conferences. According to T.1, T.4 and T.19 Scopus Preview stood out for offering "extensive collaboration networks and free and paid academic courses", allowing researchers to get involved in joint projects and attend congresses and conferences, enriching their academic experience.

Regarding joint publications, professors T.10 and T.17 mentioned that there were no opportunities for co-authorship in SJR. Instead, Scopus Preview offered greater opportunities for joint publications and multidisciplinary articles, enriching the quality and scope of research. For Innovation and Development: This code included the dimensions of "Knowledge Transfer" and "Practical Application". The testimonies of professors T.13 and T.19 indicated that knowledge transfer in SJR was limited, while Scopus Preview facilitated this process through patents and innovation models. In terms of practical application, teachers mentioned that practical applications were limited in JRS. However, Scopus Preview presented greater practical applicability, allowing a better implementation of application projects and case studies.

4. Triangulation and Discussion

The analysis of the results obtained through interviews with professors from the National University of Chimborazo reveals a series of significant findings regarding the use of the Scopus and Scimago platforms for the evaluation of scientific production. These results were contrasted with opinions of other authors and previous research, as well as with the author's own interpretation, using an analytical and comparative approach. Publication visibility emerged as a central category, underscoring the importance of impact metrics, global access, scholarly recognition, and prestige of

publications. According to testimonies of professors T.3 and T.6, the SJR platform showed significant limitations in citation analysis and the lack of an author profile, while Scopus Preview offered a detailed and up-to-date analysis, which is essential for the accurate evaluation of scientific production. In this context, it was noted that Abalkina [25] had already highlighted the relevance of citations as a critical indicator of the impact of scientific publications. This perspective is consistent with the findings of the present study, where Scopus Preview proved to provide more accurate and accessible impact metrics, improving the global visibility of publications. The need to implement more robust tools for the analysis of citations and author profiles was evident, corroborating the effectiveness of Scopus Preview compared to SJR.

On the other hand, the dimension of academic recognition and the prestige of publications also turned out to be an area of clear differentiation between the two platforms. Faculty highlighted that Scopus Preview facilitated greater recognition and visibility, which is crucial for the prestige and credibility of scholarly publications. Pastor [1] had previously emphasized the importance of academic recognition in the career of researchers, which is aligned with the perceptions of the interviewed teachers. Technical and training challenges were another relevant category. Testimonials from T.4 and T.9 teachers indicated that SJR had a steeper learning curve due to limited training resources, while Scopus Preview offered more comprehensive training and advanced tools. Beigel [9] had pointed out that the adoption of new technologies in research is highly dependent on the availability of training and technical support resources, an area in which Scopus Preview proved to be most effective.

In addition, economic constraints and institutional barriers were identified as significant challenges in the use of JRS. The Scopus Preview platform, by offering more affordable subscription options and greater administrative support, made it easier to access and use its tools, which is crucial for the integration of these platforms in the university context. Liu et al. [11] They suggested that economic barriers and lack of institutional support can inhibit the adoption of technologies, which was corroborated by the testimonies of the teachers. In terms of research impact, the category focused on scientific collaborations and innovation and development. Faculty members T.7 and T.14 highlighted that Scopus Preview facilitated broader collaborative networks and opportunities for joint publications, which are essential for innovation in scientific research. Ortiz et al., [24] had underlined the importance of collaborative networks for the advancement of science, an observation that was reflected in the findings of this study. Knowledge transfer and practical application were also critical subdimensions. The testimonies indicated that Scopus Preview facilitated the transfer of knowledge through patents and innovation models, improving the practical applicability of research. Erro et al [28] had argued that knowledge transfer is essential for organizational innovation, a point that was evidenced in the results obtained.

5. Conclusions

The objective of this study was to evaluate university scientific production through the use of the Scopus and Scimago platforms at the National University of Chimborazo. The results indicate that Scopus Preview outperforms SJR in multiple dimensions critical to scientific output, including visibility, scholarly recognition, training resources, and opportunities for collaboration. In the category of publication visibility, Scopus Preview provides a more detailed and up-to-date analysis of citations and author profiles, as well as optimized global access that improves international collaborations. These findings suggest that the adoption of Scopus Preview can significantly increase the visibility and prestige of scholarly publications.

Technical and training challenges were also addressed more effectively by Scopus Preview, which provided more abundant training and resources, as well as advanced and up-to-date tools. This eased the learning curve and improved efficiency in the use of the platform, which is crucial for the integration and use of these technologies in the academic context. The research impact category revealed that Scopus Preview expands scientific collaboration networks and offers greater opportunities for joint publications. This enhances the ability of researchers to participate in collaborative projects and in congresses and conferences, increasing the transfer of knowledge and the practical applicability of their research.

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Finally, the results of this study suggest that Scopus Preview outperforms SJR in multiple critical dimensions for university scientific production. Therefore, a theoretical approach is generated that establishes that visibility, academic recognition, training resources, and collaboration opportunities are significantly better in Scopus Preview, which has a direct positive impact on the quality and scope of the research carried out at the National University of Chimborazo. These findings underscore the importance of adopting advanced technological platforms to improve the visibility and impact of scholarly publications, contributing to the advancement of knowledge and science.

6. Limitations and Recommendations

6.1. Limitations of the Research

This research, while revealing, has several limitations that must be considered. First, the sample of teachers interviewed was limited to the National University of Chimborazo (UNACH), which may not be representative of other higher education institutions in Ecuador or in other regions. The homogeneity of the sample could influence the generalization of the results obtained. Another significant limitation was the focus on the Scopus and Scimago platforms. Although these platforms are widely recognized and used, there are other tools and databases that could also influence the visibility and impact of scientific publications, such as Google Scholar, Web of Science, and discipline-specific databases that were not considered in this study. In addition, the qualitative methodology based on interviews could have introduced biases. Teachers' perceptions and experiences may be influenced by individual factors such as familiarity with technology, level of training received, and institutional support. The use of complementary quantitative methods could have provided a more complete and balanced view of the situation.

6.2. Recommendations for Research

Based on the identified limitations, the following recommendations are proposed for future research:

- Sample Expansion: Include a broader and more diverse sample of higher education institutions, both within Ecuador and in other countries, to improve the generalizability of results. This would allow for the comparison of teachers' experiences and perceptions in different contexts and with different levels of access to resources.
- Inclusion of Other Platforms: Explore the use of other academic platforms and databases in addition to Scopus and Scimago. This could include Google Scholar, Web of Science, and discipline-specific databases, to gain a more holistic view of the impact and visibility of scientific publications.
- Mixed Methodology: Incorporate quantitative methods along with qualitative interviews. Surveys and statistical analyses can provide complementary data that reinforce or challenge qualitative conclusions. The combination of methods can provide a completer and more robust picture of the situation.
- Data Triangulation: Use multiple data sources and collection methods for triangulation. Direct observation, analysis of publications, and review of institutional policies can provide cross-validation of findings obtained through interviews.
- Training and Institutional Support: Investigate more deeply the impact of training and institutional support on the effective use of platforms such as Scopus and Scimago. This may include detailed case studies of institutions that have implemented successful training programs.

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