Quality Standards for University Research in Relation to Social Prosperity in Ecuador and the International Context

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ABSTRACT

Purpose: This study analyses the evaluation criteria of university research in Ecuador and in recent international literature, with the aim of identifying their degree of alignment with social needs.

Methodology/Approach: A systematic literature review was conducted on publications from 2020 to 2025 in the Scopus database, following PRISMA guidelines. A total of 41 studies were examined to identify evaluation metrics, conceptual frameworks, and challenges in assessing academic research.

Findings: The results confirm the predominance of quantitative indicators focused on publications, citations, and rankings, while also highlighting their limitations in addressing local issues. The literature points to the growing proposal of hybrid models that combine bibliometric indicators with criteria of social relevance, knowledge transfer, and qualitative assessments as a more balanced alternative.

Research Limitation/Implication: When contrasting these findings with the Ecuadorian model, a limited incorporation of social impact indicators is evident, underscoring the need to develop more comprehensive evaluation frameworks.

Originality/Value of paper: The value of this work lies in offering a comparative perspective between Ecuadorian regulations and international trends, providing evidence to support the design of evaluation models that balance scientific quality with the real contribution of research to socioeconomic development and inclusive social progress.

Category: Literature review

Keywords: Quality assessment; higher education; research evaluation; social impact; Ecuadorian standards.

Research Areas: Quality Management; Strategic Quality Management

1 INTRODUCTION

In recent years, higher education has undergone significant changes driven by regulatory reforms and evaluation processes aimed at ensuring the quality and relevance of institutions and their academic offerings (Vásquez et al., 2024; Zamora et al., 2019). The Constitution of the Republic of Ecuador and its subsequent regulations establish a framework designed to promote scientific, technological, and innovative research as fundamental pillars of academic and professional training, with an emphasis on building solutions to national problems and fostering the country's socio-economic development (Asamblea Nacional, 2023, pp. 2–3).

Within this context, universities must consolidate themselves not only as producers of academic knowledge but also as socially responsible actors capable of fostering collective prosperity and sustainable development (Trinh, 2023; Wang & Ruan, 2024). This debate has gained prominence over the last decade, as the growing pressure to publish in indexed journals and prestigious quartiles has shaped an academic system dominated by bibliometric indicators, which, while effective for assessing scientific visibility, do not necessarily reflect the social impact of research (Trueblood et al., 2025).

Several studies have questioned the effects of the publish or perish culture, noting that incentives centred on the quantity of publications have led to adverse outcomes such as the proliferation of predatory journals, the disconnection between science and local needs, and questionable publishing practices (Dotti & Walczyk, 2022; Çakir, Kuyurtar & Balyer, 2024). For this reason, scholars have argued for the redesign of evaluation models to incorporate metrics aligned with both individual and social prosperity (de Jong & Balaban, 2022; Ilieva-Trichkova, Boyadjieva & Dimitrova, 2024). Initiatives such as the Impact Rankings seek to operationalise this shift by including criteria linked to the Sustainable Development Goals (Times Higher Education, 2025), thereby bringing academic evaluation closer to social relevance.

In Latin America, the debate acquires particular characteristics due to existing disparities in research capacity, institutional heterogeneity, and the pressure of state policies seeking to align universities with international standards (Marino-Jiménez et al., 2024). It has been shown that institutional incentives for publishing have produced uneven effects across disciplines and have prioritised academic productivity over social relevance (Troncoso, Ganga-Contreras & Briceño, 2022). Although higher education is essential for innovation and development, a gap remains between research and the resolution of social problems (CEPAL, 2022).

In Ecuador, the quality assurance framework led by the Consejo de Aseguramiento de la Calidad de la Educación Superior (CACES) sets standards focused on indicators to evaluate academic production as a contribution to the creation or development of scientific knowledge. The external evaluation model, harmonised in 2023 (CACES, 2019, pp. 79–80), placed at its core Standard 11: Publication of

articles in indexed journals, with a formula that calculates per capita publication rates weighted by quartile and inclusion in funded projects.

Subsequently, the external evaluation model for accreditation purposes consolidated this approach. The indicator of Academic Production (CACES, 2023, pp. 102–109) introduced a broader definition, establishing a per capita academic production index alongside other scales of assessment and weightings for impact levels and interculturality. It is estimated that 70% of Ecuadorian universities offer incentives for academic publications, although only 30% achieve publications in indexed journals (Carranco et al., 2025).

Nevertheless, the evaluative logic remains anchored in counts and coefficients derived from the volume and editorial visibility of scientific outputs. This situation raises questions about its ability to measure the true contribution of higher education institutions to national development (Balladares et al., 2024). It is evident that academic production does not necessarily guarantee relevance or social impact, and that much of university investment in research is directed more towards international visibility than the resolution of local issues (Escobar-Jiménez, 2022; Carranco Madrid, Reinoso Ortiz & Torres Barzola, 2025).

As a result, many of these institutions continue to operate within a framework centred on scientific production as the main criterion of institutional quality (Oquendo, 2019; Gierhake & Jardon, 2022). Thus, a model persists that privileges quantitative indicators without sufficiently addressing the contribution of university research to sustainable development and inclusive social prosperity (Orellana & Balseca, 2020; Perero et al., 2022; Silva & Ortiz, 2021). This generates two core effects in the debate: first, the primacy of quantity and international visibility as the principal signals of quality; and second, the difficulty of systematically incorporating social impact metrics due to the complexity of collecting and standardising such data in evaluation formulas.

This tension between easily applicable metrics and contextually relevant measurements constitutes the central problem of this study. Accordingly, the objective of the present research is to analyse the research criterion embedded in the quality assurance framework of higher education in Ecuador in contrast with the international context, in order to discuss the extent to which these frameworks respond to social needs and contribute to prosperity. To this end, the study examines Ecuadorian regulations governing this criterion and undertakes a systematic review of recent literature on the subject. On this basis, the following research questions are posed: (1) What evaluation metrics have been identified to assess the quality of higher education research at the international level? (2) What challenges arise from incorporating these metrics into research evaluation systems in higher education? (3) What proposals exist for improving the evaluation of research with a social focus in universities?

2 METHODOLOGY

This systematic review followed the guidelines of the PRISMA methodology (Preferred Reporting Items for Systematic Reviews and Meta-Analyses), which provides a standardised framework to ensure transparency, comprehensiveness, and reproducibility in the processes of identifying, selecting, and synthesising scientific evidence (Page et al., 2021). This protocol organises the process into four phases: identification, screening, eligibility, and inclusion, thereby facilitating a critical and coherent evaluation of the studies considered.

2.1 Eligibility criteria

The review included studies published between 2020 and 2025 addressing the evaluation of university research. Eligible documents comprised research articles, theoretical or critical reviews, academic book chapters, and peer-reviewed conference proceedings that explicitly examined the relationship between research evaluation systems and aspects such as social impact, prosperity, community engagement, or sustainable development.

Excluded from the review were studies focusing on educational levels other than higher education, opinion papers without methodological grounding, non-peer-reviewed reports, duplicates, and studies exclusively concerned with academic production without connection to quality or social relevance criteria.

2.2 Information sources and search strategy

The bibliographic search was carried out in the Scopus database, selected for its broad coverage of scientific literature in education, social sciences, and public policy. To structure the search strategy, three main conceptual categories were identified: university research, evaluation or quality indicators, and social impact. These categories were operationalised into key terms and synonyms, combined using Boolean operators. The search was limited to titles, abstracts, and keywords. Table 1 presents the search string used, which yielded 91 candidate studies.

Table 1 – Search strategy

Database	Search string	Studies
Scopus	(TITLE-ABS-KEY ("research evaluation" OR "quality research" OR "research assessment" OR "research indicator*" OR "publish or perish" OR "research standard" OR "research metric*" OR "quality indicator*") AND TITLE-ABS-KEY ("social impact" OR "societal impact" OR "prosperity" OR "sustainable development" OR "community engagement" OR "social responsibility" OR "innovation impact") AND TITLE-ABS-KEY ("higher education" OR "universit*" OR "academic research")) AND PUBYEAR > 2019 AND PUBYEAR < 2026 AND (LIMIT-TO (DOCTYPE , "ar") OR LIMIT-TO (DOCTYPE , "re") OR LIMIT-TO (DOCTYPE , "ch") OR LIMIT-TO (DOCTYPE , "cp"))	91

2.3 Study selection and data extraction process

The selection of studies followed the stages of the PRISMA protocol. In the identification phase, the initial search retrieved a total of 91 records: 63 original articles, 17 conference proceedings, 7 reviews, and 4 book chapters. No duplicate documents were detected; therefore, all records were screened by title, abstract, and keywords.

During the screening stage, 49 documents were excluded as they were not related to the aim of the study or did not address the research questions: 29 articles, 14 conference proceedings, 3 reviews, and 3 book chapters. As a result, 42 studies were selected for full-text retrieval, of which one could not be accessed. The final corpus for systematic data extraction thus comprised 41 primary studies (see Figure 1).

Data extraction was conducted using a standardised matrix designed to capture key information from each study, including bibliographic reference, country or context of application, type of research, evaluation approach, findings related to bibliometric and social metrics, documented effects of evaluation systems, and suggested proposals.

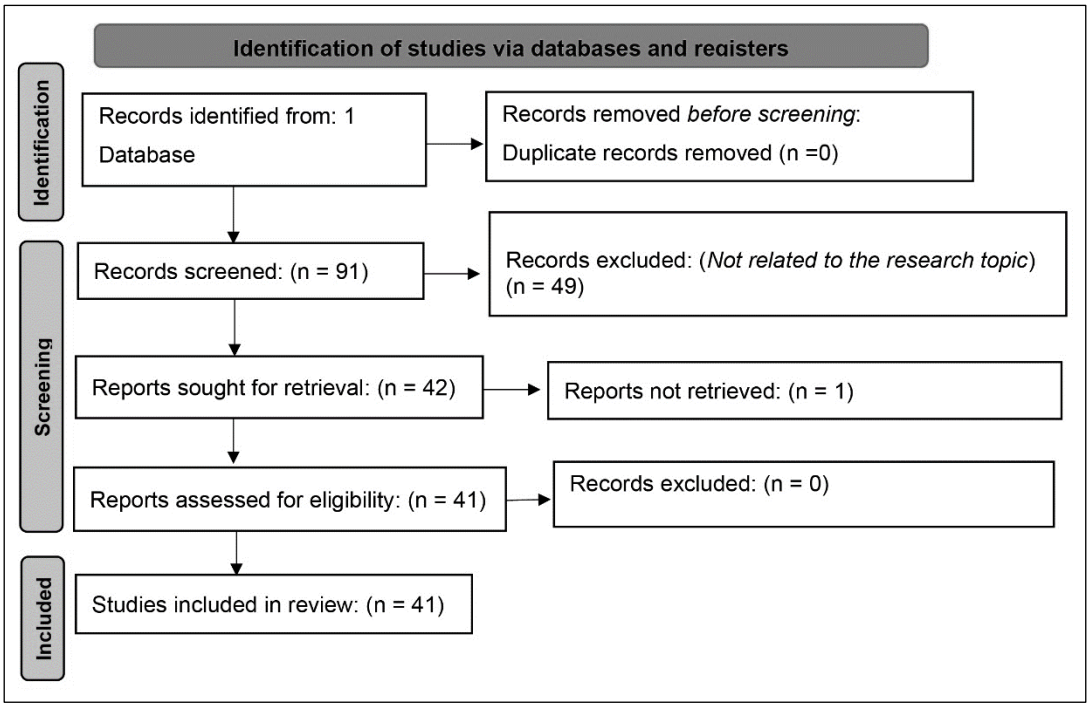

Figure 1 – PRISMA flowchart

2.4 Methods of synthesis

The analysis of the results adopted a narrative and thematic approach aimed at identifying common patterns and divergences among the included studies. The findings were organised around three axes of analysis directly linked to the research questions: the orientation of evaluation systems, the effects of

implementing bibliometric metrics, and proposals aimed at strengthening social impact. The synthesis integrated the evidence into comparative tables and explanatory narratives, which facilitated a cross-cutting reading of the results and the construction of a coherent analytical framework on the tension between academic quality, research productivity, and social prosperity.

3 RESULTS

3.1 Metrics used to assess research quality

Table 2 presents the metrics identified for evaluating research quality, organised into categories that facilitate analysis and allow the indicators to be linked with the studies that report them.

Table 2 – *Ways to evaluate the quality of research*

Category	Specific indicators or metrics	Studies
Academic productivity	Number of publications (articles, chapters, books); articles in indexed journals; publications per academic staff; publications per project.	(Bangani and Onyancha, 2020; Gunawan, Aungsuroch and Fisher, 2021; Sherin, T.M. and Mavily, 2021; Peralta-González and Gregorio-Chaviano, 2022; Mushagalusa et al., 2024; Acuña-Moraga et al., 2025; Javadi et al., 2025)
Citation metrics	Total citations; citations per article; citation counts in databases (WoS, Scopus, Google Scholar); h-index.	(Hanna et al., 2020; Sedighi, 2020; Arthur and Hearn, 2021; Belcher et al., 2021; Findler, 2021; Sherin, T.M. and Mavily, 2021; Peralta-González and Gregorio-Chaviano, 2022; Stocco Ranieri, 2022; Mfengu, 2025; Mutz, Bornmann and Haunschild, 2025)
Journal-based metrics	Impact Factor; SJR; CiteScore; quartile ranking (Q1–Q4); publication in journals list/top; journal classification.	(Lauronen, 2020; Gunawan, Aungsuroch and Fisher, 2021; Zhou, Law and Lee, 2021; Yi and Li, 2022; Steingard and Rodenburg, 2023; den Besten, 2024; Krepsky, 2024; Ramassa, Avallone and Quagli, 2024; Matic Girard and Girard, 2025; Zhao, Li and Liang, 2025)
Institutional indicators	Number of PhDs awarded, number of research-active staff, funded projects, participation in institutional rankings, and research and development income.	(Khomyakov, 2021; Cheng et al., 2022; Stocco Ranieri, 2022; Mushagalusa et al., 2024; Radushinsky et al., 2024; Javadi et al., 2025)
Knowledge transfer and innovation	Patents; spin-offs; licences; patent-derived income; jobs created; technology transfer; university–industry collaborations.	(Marra, 2022; Peralta-González and Gregorio-Chaviano, 2022; Mushagalusa et al., 2024)

Category	Specific indicators or metrics	Studies
Impacto social y político Social and political impact	Citations in policy documents; contributions to guidelines or practices; impact on public services; evidence in the press; SDG mapping.	(Hanna et al., 2020; Dotti and Walczyk, 2022; Jonker, Vanlee and Ysebaert, 2022; Marra, 2022; Li, Lo and Yang, 2024; Mutz, Bornmann and Haunschild, 2025; Steingard and Rodenburg, 2025)
Altmetrics and public dissemination	Views; downloads; mentions on social media; media coverage; press attention.	(Sedighi, 2020; Jonker, Vanlee and Ysebaert, 2022; Mure, 2024; Mfengu, 2025)
Qualitative evaluation	Clarity and relevance of research questions; methodological rigour; validity and reliability; participation or collaboration; ethics; practical relevance.	(Belcher et al., 2021; Findler, 2021; Gunawan, Aungsuroch and Fisher, 2021; Jahn et al., 2022; Krepsky, 2024; Javadi et al., 2025)

The findings indicate a clear predominance of quantitative metrics as the starting point for assessing the quality of research in higher education. Among these, production-based indicators constitute the core of institutional and national evaluation systems. These are complemented by citation metrics and journal reputation indicators, which systematically appear as central references for measuring the visibility and the perceived quality of scientific output.

The review also reveals a growing interest in capturing the social and political impact of research. However, such metrics are less frequently employed and lack clear methodological standardisation. Attempts have been identified, such as tracking citations in policy documents, inclusion in professional guidelines, presence in the media, or the automatic mapping of publications to the Sustainable Development Goals (SDGs). While these strategies broaden the evaluative spectrum, their diversity and limited robustness hinder systematic implementation.

Complementarily, altmetrics have emerged as a tool for monitoring public attention and digital visibility. Nevertheless, their volatile nature and susceptibility to manipulation limit their acceptance as reliable indicators of profound social impact. Finally, a significant body of work proposes qualitative metrics focusing on the evaluation of methodological rigour, the relevance of research questions, ethics in the process, and the adequacy of studies to local contexts and problems. These approaches seek to counterbalance the biases of quantitative evaluation, underscoring the importance of valuing the intrinsic quality of the research process and its contextual relevance.

3.2 Challenges in evaluation systems

Most of the metrics employed to evaluate university research privilege quantitative dimensions and academic visibility over the direct measurement of social impact. Indicators such as the number of publications, citations, ranking positions, and publications in high-impact journals form the foundation of current evaluation systems. Although useful for comparing productivity and scientific prestige, they remain insufficient to capture the contribution of research to the resolution of

concrete social problems (Bangani & Onyancha, 2020; Arthur & Hearn, 2021; Belcher et al., 2021; Dotti & Walczyk, 2022; Acuña-Moraga et al., 2025).

Several studies warn that this productivist bias shifts agendas towards topics of high visibility, fosters opportunistic or unethical practices, and reduces attention to interdisciplinary or applied research with local relevance (Gunawan, Aungsuroch & Fisher, 2021; Khomyakov, 2021; Golhasany & Harvey, 2022). In this regard, the publish or perish culture, in addition to creating pressure on researchers, limits the capacity of universities to contribute to social change (Nemec, 2024). Even in cases where academic publications manage to influence policies or practices indirectly, evidence of tangible impacts remains scarce and is not systematically incorporated into the prevailing evaluation frameworks (Hanna et al., 2020; Javadi et al., 2025).

3.3 Proposals for evaluation

The literature outlines proposals aimed at broadening the evaluative scope to incorporate social impact. Notable among these are approaches that complement traditional metrics with qualitative indicators and alternative measures, such as citations in policy documents, explicit contributions to the SDGs, records of technology transfer, patents, or evidence of adoption by non-academic actors (Findler, 2021; Dotti & Walczyk, 2022; Mutz, Bornmann & Haunschild, 2025; Steingard & Rodenburg, 2025). The use of altmetrics and the monitoring of media and social networks has also been explored as a means of capturing the public visibility of research, although these approaches face limitations concerning reliability (Bangani & Onyancha, 2020; Sedighi, 2020).

At a more operational level, recommendations can be grouped into three sets of proposals. The first advocates the adoption of alternative metrics such as altmetrics, grey literature, patents, technological products, and policy documents (Bangani & Onyancha, 2020; Sedighi, 2020; Zhao, Li & Liang, 2025). The second suggests the incorporation of mixed methodologies, including case studies, SROI (Social Return on Investment) evaluation, SIAMPI methods, and participatory approaches (Dotti & Walczyk, 2022; Marra, 2022; Stocco Ranieri, 2022). The third encourages the promotion of open science and responsible practices through open data, reproducible software, and citizen science (Khomyakov, 2021; Krepsky, 2024; Mfengu, 2025).

Despite these proposals, the integration of social and qualitative indicators faces significant methodological and practical challenges. Collecting qualitative data entails high resource demands, requires frameworks adapted to institutional and territorial specificities, and necessitates comparable analytical standards (Peralta-González & Gregorio-Chaviano, 2022; Radushinsky et al., 2024). In addition, there is a need to ensure equity in academic careers and prevent adverse effects on mobility and international collaboration (Lauronen, 2020).

The solution does not lie in replacing bibliometric metrics but in integrating them into broader frameworks that weigh production and editorial quality alongside

indicators of knowledge transfer, contributions to public policy, and community well-being. Nevertheless, such frameworks face clear limitations, including limited standardisation, high administrative burden, difficulties in validating qualitative data, and the risk of subjectivity or capture by interest groups (Jonker, Vanlee & Ysebaert, 2022; Nogueiro, Saraiva & Jorge, 2022; Mure, 2024).

Furthermore, several studies suggest that any evaluative reform should be accompanied by investment in information systems, the training of evaluators, and mechanisms for external verification to minimise undesirable effects such as the purely instrumental use of metrics or the strategic manipulation of indicators (Golhasany & Harvey, 2022; Marra, 2022; Radushinsky et al., 2024).

4 DISCUSSION

The results indicate that the evaluation of university research continues to be strongly dominated by quantitative metrics, principally production and citation indicators, as well as journal and institutional reputation parameters associated with rankings. While these indicators provide objectivity and enable international comparison, they are limited in their capacity to directly reflect the contribution of research to solving social problems. These findings suggest the existence of a structural tension between what is easily measurable and what genuinely responds to the social relevance and responsibility of the university. Current frameworks have reinforced an academic culture oriented towards international visibility.

Consequently, there is a growing consensus on the need to shift the evaluative emphasis from purely productivist measures towards a more pluralistic vision oriented towards social benefit and prosperity. This shift entails strengthening university social responsibility and institutional governance by incorporating principles of sustainability and transparency (Acuña-Moraga et al., 2025). It also requires recognising non-traditional forms of value creation and combining qualitative techniques capable of capturing the real contribution of research to collective well-being (Arthur & Hearn, 2021; Belcher et al., 2021; Findler, 2021). These perspectives aim to enhance social relevance, align research output with development priorities, strengthen public trust, and guide institutional management towards tangible impacts (Cheng et al., 2022; Acuña-Moraga et al., 2025; Mfengu, 2025).

Although the Ecuadorian quality assurance model acknowledges the importance of research as a core function, its evaluation is mainly based on bibliometric indicators that measure academic output through counts of indexed publications, weighted by journal quartile, impact factor, and participation in funded projects (CACES, 2023, pp. 102–109). While this approach ensures numerical standardisation and international comparability, it limits the systematic inclusion of dimensions related to social impact, technology transfer, or contextual relevance.

By contrast, the literature reviewed advocates broadening the evaluative spectrum to include alternative metrics such as evidence of research uptake in public policy, contributions to the Sustainable Development Goals, patent registrations, technological products, and social return on investment (SROI) evaluation, as well as qualitative approaches that capture the local relevance and social influence of research.

The inclusion of such indicators would enable evaluation systems to overcome the current quantitative predominance and foster a more comprehensive assessment that reflects not only scientific production but also its effective contribution to the socio-economic development of the country. The progressive incorporation of these parameters, combined with stronger information systems and evaluative capacities, could enhance accountability, better align institutional incentives with socially impactful research, and contribute to bringing the evaluation model in line with the constitutional mandate of university social responsibility and sustainable development.

Higher education in Ecuador is thus marked by a tension between regulatory frameworks that recognise research as an instrument for addressing national needs and quality assurance processes that, in practice, replicate international approaches centred on editorial productivity. This situation highlights the urgency of developing integrative models that retain bibliometric indicators while articulating them with qualitative evaluations, social transfer indicators, evidence of policy adoption, and community impact assessments, in line with the constitutional mandate of university social responsibility.

5 CONCLUSIONS

Internationally, the metrics used to evaluate research in higher education show a strong inclination towards quantitative indicators, with particular emphasis on academic productivity, citations, and journal reputation. While these indicators allow for standardised comparisons and ensure international visibility, they are limited in their capacity to capture the contextual relevance and social value of scientific output. At the same time, there is a growing interest in alternative indicators such as social and political impact, altmetrics, and qualitative assessments, although these still lack a robust methodological framework to support their systematic application.

The incorporation of such metrics into evaluation systems presents significant challenges. On the one hand, traditional indicators provide comparable and objective data but tend to reinforce publish or perish dynamics that shift attention towards highly visible agendas while diminishing the value of interdisciplinary or locally relevant research. On the other hand, social and qualitative indicators pose complex methodological and practical challenges, as they require investment in information systems, training for evaluators, and verification mechanisms to ensure reliability. Moreover, without clearly defined criteria, these indicators risk becoming merely instrumental tools or being subject to strategic manipulation.

In this context, improvement proposals are oriented towards the construction of hybrid models that integrate bibliometric metrics with indicators of knowledge transfer, contributions to public policy, alignment with the Sustainable Development Goals, technological innovation, and open science practices. The use of mixed methodologies, such as social return on investment (SROI) evaluation or participatory approaches, aims to broaden the evaluative scope beyond productivity. Nevertheless, these alternatives face obstacles such as limited standardisation, high administrative burden, and the difficulty of validating qualitative data without introducing bias. The real challenge, therefore, lies in designing integrative evaluation frameworks that simultaneously acknowledge scientific quality, academic visibility, and the genuine contribution of research to social well-being, while avoiding the replication of the same biases they seek to overcome.

6 LIMITATIONS AND FUTURE WORK

This review has limitations, including the focus on publications between 2020 and 2025 and documents indexed in Scopus, which may exclude relevant contributions found in other databases or in grey literature. The operationalisation of social impact remains a conceptually fragmented and methodologically challenging field, making it difficult to establish strictly comparable criteria across contexts. Moreover, many of the reviewed studies reflect theoretical or incipient proposals rather than widely validated applications.

Future research should focus on the design and validation of hybrid evaluation frameworks that combine bibliometric metrics with social and qualitative impact indicators, taking into account institutional and regional specificities. This requires the development of comparable and transparent methodologies, the strengthening of information systems, and the training of evaluators in integrative approaches, as well as the exploration of advanced technological tools for data analysis. These efforts would contribute to more balanced evaluation models that simultaneously recognise scientific quality and the contribution of research to sustainable development and social well-being.

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CONFLICTS OF INTEREST

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The data supporting the findings of this study are available from the corresponding author upon reasonable request.

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