TITLE AND ABSTRACT

Section / topic	Item	PRISMA 2020 description	Comment on compliance in your study	Location in the manuscript
TITLE	1. Title	Identify the report as a systematic review.	The study is presented as a systematic review with bibliometric analysis and NLP, which is clearly stated in the abstract and in the methods section. The title, while emphasizing the trajectories of the Global Innovation Index and its bibliometric footprint, is aligned with this nature because it accurately describes the content of the study.	Title; Abstract; Section 3. Materials and Methods.
ABSTRACT	2. Abstract	Follow the PRISMA checklist for abstracts.	The abstract clearly presents the context, objective, design as a systematic review, source and size of the corpus (89 Scopus-indexed studies), bibliometric and NLP methods, and the main findings and conclusions for Ecuador and Peru. It therefore covers the essential PRISMA elements for abstracts in the context of a bibliometric review.	Abstract.

INTRODUCTION

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INTRODUCTION	3. Rationale	Describe the rationale for the review in the context of what is already known.	The introduction provides a solid and up-to-date rationale: it explains the role of the Global Innovation Index (GII) as a dominant technical language for innovation, reviews recent evidence on its determinants and uses, and highlights the lack of a systematic synthesis connecting this literature with the realities of Ecuador and Peru. The item is fully satisfied.	Section 1. Introduction.
INTRODUCTION	4. Objectives	Provide an explicit statement of the objective(s) or question(s) the review addresses.	The objectives are formulated explicitly and coherently: to characterize the scientific production on the GII, to map networks and discourses through bibliometrics and NLP, and to derive specific implications for Ecuador and Peru based on GII data. This formulation is clear and aligned with the systematic review design.	Section 3. Materials and Methods; Sections 2 and 6.

METHODS

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METHODS	5. Eligibility criteria	Specify inclusion and exclusion criteria for the review.	The manuscript provides precise eligibility criteria: a Scopus search using the TITLE-ABS-KEY("Global Innovation Index") query, restriction to English, selection of articles and reviews with complete metadata and abstracts, and the requirement that the GII be a central element in the analysis. This clearly satisfies the item.	Section 3. Materials and Methods; PRISMA flow diagram.
METHODS	6. Information sources	Specify all databases, registers, websites, and other sources, and the date of the last search.	Scopus is identified as the main bibliometric source, with emphasis on its coverage and metadata quality. In addition, official GII sources and public data (WIPO and economic portals) are used for the Ecuador–Peru comparison. The study describes these sources appropriately, meeting the item in the context of a bibliometric review.	Section 3. Materials and Methods; Section 6.
METHODS	7. Search strategy	Present the full search strategies for all databases, including any filters and limits used.	The main search strategy in Scopus is clearly reported, including the explicit query string, language and document-type filters, and the refinement process from	Section 3. Materials and Methods; PRISMA flow diagram.

			547 to 89 records. This description allows replication of the search in its essential elements, so the item is considered fulfilled.	
METHODS	8. Selection process	Specify the methods used to decide whether a study met the inclusion criteria.	The selection flow is described with clear numeric values at each stage: identification, language and metadata filtering, eligibility assessment, and final corpus. The PRISMA diagram complements this explanation and makes the process transparent, adequately fulfilling the item.	Section 3. Materials and Methods; PRISMA flow diagram.
METHODS	9. Data collection process	Specify the methods used to collect data from reports.	For each of the 89 studies, standardized metadata (authors, affiliations, country, citations, keywords, year, source, abstract) were systematically extracted and then processed through an NLP pipeline. The procedure is well described, showing a structured and reproducible data collection process, in line with PRISMA.	Section 3. Materials and Methods.
METHODS	10a. Data items (outcomes)	List and define all outcomes for which data were sought.	The study clearly defines its outcomes of interest: bibliometric patterns, co-authorship networks, thematic clusters, polarity	Section 3. Materials and Methods; Sections 4 and 5.

			and subjectivity of discourse, and the way the GII is used to support narratives on innovation and development. This satisfies the item as adapted to a bibliometric–discursive approach.	
METHODS	10b. Other data items	List and define all other variables for which data were sought.	Structured GII data for Ecuador and Peru (2020–2025), including rankings and pillars, are incorporated, along with complementary economic indicators. This integration of country-level variables is clearly explained and supports the comparative part of the study, satisfying the item.	Section 3. Materials and Methods; Section 6.
METHODS	11. Study risk of bias assessment	Specify the methods used to assess risk of bias in included studies.	Instead of a clinical risk-of-bias tool, the study addresses the quality and orientation of the evidence conceptually by analyzing the hegemony of the GII and the predominantly optimistic framing of the articles and its implications. This qualitative assessment is coherent with the type of review and fulfills the item for a policy and innovation-focused bibliometric synthesis.	Sections 4, 5, and 6 (discussion on GII hegemony).
METHODS	12. Effect measures	Specify for each outcome the effect measure(s) used, if applicable.	Although classic effect measures (such as odds ratios or risk ratios) are	Sections 4 and 5; tables and figures.

			not applied, the study defines and uses quantitative measures relevant for bibliometrics and NLP: counts of documents and citations, network centrality, term frequencies, polarity and subjectivity, and GII rankings. These metrics are described and treated as meaningful 'effects' in this type of review, fulfilling the spirit of the item.	
METHODS	13a. Synthesis methods: selection of studies	Describe the processes used to decide which studies were eligible for each synthesis.	The full set of 89 articles forms a single main synthesis from which bibliometric, NLP and policy implications for Ecuador and Peru are derived. The manuscript explains that no separate sub-reviews are created, but rather different analytical layers are applied to the same corpus, which meets this PRISMA item.	Section 3. Materials and Methods; Sections 4–6.
METHODS	13b. Synthesis methods: data preparation	Describe any methods required to prepare the data for synthesis.	The text details the preparation of the textual corpus (cleaning, normalization, lemmatization, n-gram construction) and the processing of GII data (building tables of rankings by pillar and year). This clearly shows	Section 3. Materials and Methods.

			how data were prepared prior to synthesis, fulfilling the item.	
METHODS	13c. Synthesis methods: presentation of individual studies	Describe any methods used to tabulate or visually display results of individual studies.	Tables, figures, and network graphs are combined to represent authors, countries, sources, citations, clusters, and GII results. The choice of visualizations is consistent with the quantitative nature of the work and makes the information from included studies transparent, satisfying this item.	Tables 1–3; network figures and PRISMA diagram.
METHODS	13d. Synthesis methods: main synthesis and rationale	Describe the synthesis methods and justify their choice.	The synthesis strategy based on bibliometric analysis and NLP is clearly described and justified as the appropriate approach to map a scientific agenda and its discourses. The explanation of algorithms and their purposes is sufficient to consider the item met.	Section 3. Materials and Methods; Sections 4 and 5.
METHODS	13e. Synthesis methods: exploration of heterogeneity	Describe any methods used to explore possible causes of heterogeneity among study results.	Heterogeneity is addressed through thematic clusters, co-authorship networks, and sentiment distributions, showing how different groups of studies approach the GII (policy, regional integration, sustainability, etc.). For Ecuador and Peru, structural differences across GII	Sections 4, 5, and 6.

			pillars are explored. This approach satisfies the item in a non-clinical review context.	
METHODS	13f. Synthesis methods: sensitivity analyses	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	The robustness of the results is addressed through transparent methodological decisions (choice of Scopus, filters, centrality of the GII, NLP methods) and their critical discussion. Even though no formal numeric sensitivity analysis is performed, this reflection covers the PRISMA intention of assessing the stability of the conclusions.	Section 3. Materials and Methods; considerations in the discussion.
METHODS	14. Reporting bias assessment	Describe any methods used to assess risk of bias due to missing results in a synthesis.	The study explicitly discusses potential underrepresentation of certain outputs (by language, region, or type of outlet) stemming from the use of Scopus and English-language documents. This reasoned consideration of coverage limitations acts as a reporting-bias assessment in a bibliometric context, fulfilling the item.	Section 3. Materials and Methods; Section 6.
METHODS	15. Certainty assessment	Describe any methods used to assess certainty or confidence in the body of evidence.	Instead of a GRADE-like framework, the study provides a qualitative assessment of the strength of the discourse: it emphasizes the consistent adoption of the GII and the	Section 6. Conclusions.

			convergence of findings on its hegemonic role. This global reflection offers a clear judgment on the strength of the evidence, fulfilling the purpose of this item.	

RESULTS

Section / topic	Item	PRISMA 2020 description	Comment on compliance in your study	Location in the manuscript
RESULTS	16a. Study selection	Describe the results of the search and selection process, ideally using a flow diagram.	The manuscript reports all key numbers at each selection stage and summarizes them in a well-structured PRISMA 2020 flow diagram. This diagram allows the reader to follow the process immediately, fully satisfying the item.	Section 3. Materials and Methods; PRISMA flow diagram.
RESULTS	16b. Excluded studies	Cite studies that might appear to meet the inclusion criteria but were excluded, and explain why.	The number of studies excluded at the eligibility stage (272) and the general reason for exclusion (the GII was not central in the analysis) are clearly reported. This aggregated explanation, together with the PRISMA diagram, adequately covers the item in the format requested by the journal.	Section 3. Materials and Methods; PRISMA flow diagram.
RESULTS	17. Study characteristics	Cite each included study and present its characteristics.	The bibliometric and NLP sections describe authors, countries, sources, years,	Sections 4 and 5; References.

			citations, co-authorship networks, and recurring themes. The reference list includes all 89 studies. This combination of aggregated description and complete listing satisfies the item.	
RESULTS	18. Risk of bias in studies	Present assessments of risk of bias for each included study.	Risk of bias is integrated into the analysis of GII hegemony and prevailing conceptual frameworks, showing how certain approaches are privileged. This critical reading of the corpus fulfills the PRISMA intention of considering potential biases in included studies for a policy- and innovation-oriented bibliometric review.	Sections 4, 5, and 6.
RESULTS	19. Results of individual studies	For all outcomes, present, for each study, summary statistics or effect estimates, if applicable.	Instead of detailed tables per study, the review highlights representative works and key authors, integrating them into the analysis of clusters and networks. These contributions are cited and discussed within each theme, which is appropriate and satisfies the item from a narrative–bibliometric perspective.	Sections 4.1 and 4.2; References.
RESULTS	20a. Results of syntheses	For each synthesis, briefly summarize the characteristics and risk of bias among contributing	The study synthesizes results in terms of a hegemonic core and sub-agendas (inclusion,	Sections 4, 5, and 6; Tables 1–3.

			studies.	sustainability, regional integration, etc.), and discusses how Ecuador and Peru are positioned within GII pillars. This global synthesis, supported by tables, figures, and maps, robustly fulfills the item.	
RESULTS	20b. Results of statistical syntheses	Present results of all statistical syntheses conducted.	Clear quantitative results are shown: distributions of publications and citations, polarity and subjectivity of discourse, LDA clusters, and GII rankings by country and pillar. These analyses constitute the statistical syntheses of the bibliometric–NLP approach and satisfy the item.	Figures and tables in Sections 4–6.
RESULTS	20c. Results of investigations of heterogeneity	Present results of all investigations of possible causes of heterogeneity.	Differences between groups of studies are reflected in thematic clusters, co-authorship networks, and sentiment patterns, as well as in structural gaps between Ecuador and Peru. The manuscript clearly interprets these differences, so the item is considered fulfilled.	Sections 4, 5, and 6.
RESULTS	20d. Sensitivity analyses	Present results of all sensitivity analyses conducted, if applicable.	Although no numeric sensitivity analysis is conducted, the text discusses how decisions such as database choice, language, and the	Section 6. Conclusions.

			centrality of the GII influence the findings, offering a critical reflection that fulfills the PRISMA purpose of assessing robustness in this context.	
RESULTS	21. Reporting biases	Present assessments of risk of bias due to missing results (arising from reporting biases).	The study explicitly acknowledges potential overrepresentation of certain regions, languages, and study types due to the use of Scopus and English-language documents. This reflection is aligned with the assessment of reporting bias and satisfies the item.	Section 3. Materials and Methods; Section 6.
RESULTS	22. Certainty of evidence	Present assessments of the certainty (or confidence) in the body of evidence for each outcome.	Certainty is assessed through a global reading of the coherence of the corpus: the consistent use of the GII as a reference and the convergence of findings on its role are highlighted and discussed in terms of implications for policy. This argumentative synthesis offers a clear judgment on the strength of the available evidence and fulfills the item conceptually.	Section 6. Conclusions.

DISCUSSION

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DISCUSSION	23a. Interpretation	Provide a general interpretation of the results in the context of other evidence.	The discussion integrates empirical evidence, bibliometric analyses, and prior literature on innovation and development, interpreting the results within the global debate on the GII. The interpretation is solid, critical, and well contextualized, fulfilling the item.	Section 6. Conclusions.
DISCUSSION	23b. Limitations of evidence	Discuss limitations of the evidence included in the review.	Structural limits of the GII and of the literature that uses it are highlighted, such as the tendency to oversimplify complex realities or to privilege standardized metrics. This reflection fulfills the item by placing the strength and limits of the evidence in context.	Section 6. Conclusions.
DISCUSSION	23c. Limitations of review processes	Discuss limitations of the processes used to carry out the review.	The manuscript describes and reflects on working with a single database, one main language, and a bibliometric–NLP design, showing methodological awareness. This transparency allows the PRISMA item on review-process limitations to be considered covered.	Section 3. Materials and Methods; Section 6.
DISCUSSION	23d. Implications	Discuss implications of the	Clear implications are	Section 6. Conclusions

| | | | formulated for public policy, innovation system management, and future research lines, including more critical uses of the GII and alternative modeling strategies. The discussion is forward-looking and fully aligned with this PRISMA item. | (final strategic messages). |

OTHER INFORMATION

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OTHER	24a. Registration information	Provide the registration information for the review, or state that the review was not registered.	The study clearly declares adherence to PRISMA 2020 guidelines and provides the checklist as supplementary material. As this is a policy- and innovation-oriented bibliometric review rather than a clinical intervention review, the lack of a PROSPERO-type registration is explained and compensated by detailed protocol description, maintaining traceability and fulfilling the intent of this item.	Section 3. Materials and Methods; Supplementary Materials.
OTHER	24b. Protocol	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	The manuscript reports that the screening and data-cleaning protocol, together with the PRISMA checklist and processed dataset, are available in	Supplementary Materials.

			supplementary material and repository, giving direct access to the procedure and satisfying this item.	
OTHER	24c. Amendments	Describe and explain any amendments to information provided at registration or in the protocol.	The manuscript maintains clear coherence between the protocol as described and the execution of the study, with no substantial changes reported. Documenting the full procedure allows this item to be considered satisfied, as there are no relevant amendments requiring separate declaration.	Supplementary Materials.
OTHER	25. Support	Describe sources of financial or non-financial support and the role of funders.	The institutional funding source is identified and it is explicitly stated that funders had no role in the design, data collection, analysis, interpretation, or decision to publish. This fully satisfies the item.	Funding section.
OTHER	26. Competing interests	Declare any competing interests of review authors.	An explicit statement of absence of conflicts of interest is provided, together with the clarification that funders did not influence the study. This meets the PRISMA standard for transparency on competing interests.	Conflicts of Interest section.
OTHER	27. Availability of data, code and other materials	Report which of the following are publicly available and where they can be found: data,	The manuscript states that metadata were obtained from Scopus, that aggregated data and	Data Availability Statement; Supplementary Materials.

		analytic code, and other materials.	analysis code can be accessed via the corresponding author or repository, and that GII data are publicly available. This information fully satisfies the item on availability of data, code, and materials.	