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WHAT DOES THE LITERATURE SAYS ABOUT INTERNATIONAL MOBILITY AND ITS IMPACTS ON DIFFERENT SPHERES OF ACADEMIC CAREERS?

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ABSTRACT: Given the growing strategic importance of international mobility for funding agencies and higher education institutions, this study presents a mapping review of scientific articles published from 2013 to 2022 and indexed in the Scopus and Web of Science databases. Its aim is to identify the predominant themes, the geographical and temporal patterns of knowledge production in this field, the methodologies employed, and the main research gaps. The analysis involved a careful selection of articles, followed by an examination of abstracts and full texts, thematic categorization, and data interpretation. The results show that, despite the hegemony of Global North countries as centers of knowledge production and as preferred destinations for international mobility, new actors—namely China, India, Singapore, and South Korea—have been reshaping the global landscape. Nevertheless, there remains limited research on gender and racial inequalities, pointing to gaps that may inform future studies.

Keywords: academic career, international mobility, impacts of academic mobility, scientific migration.

O QUE A LITERATURA TEM A DIZER SOBRE A MOBILIDADE INTERNACIONAL E SEUS IMPACTOS NA CARREIRA ACADÊMICA?

RESUMO: Reconhecendo a mobilidade internacional como prioridade estratégica crescente para agências de fomento e instituições de ensino superior, este estudo apresenta uma revisão de mapeamento de artigos científicos publicados entre 2013 e 2022 nas bases Scopus e Web of Science. Objetiva-se identificar temas predominantes, padrões geográfico-temporais da produção de conhecimento nesse campo, metodologias adotadas e lacunas investigativas. A análise compreendeu seleção criteriosa de artigos, exame de resumos e textos completos, categorização temática e interpretação de dados. Os resultados revelam que, apesar da hegemonia dos países do Norte Global como centros de produção de conhecimento e destinos preferenciais da mobilidade internacional, emergem novos atores—China, Índia, Singapura e Coreia do Sul—que têm redefinido o cenário global. Destaca-se, porém, a carência de investigações sobre desigualdades de gênero e raciais, evidenciando lacunas que podem orientar pesquisas futuras.

Palavras-chave: carreira acadêmica, mobilidade internacional, impactos da mobilidade acadêmica, migração científica.

INTRODUCTION

The mobility of students, professors, and scientists is a phenomenon that dates back to the Middle Ages and can be considered an important component in the history of medieval universities, such as those of Paris and Bologna, which attracted numerous “students and academics from different parts of Europe” (Huang, Welch, 2021, p. 3). Yet, although mobility has a very long history, it began to draw the attention of researchers as of the 1950s, at which time the focus of the discussions was predominantly on international students rather than on the mobility of academic personnel (Shen et al., 2022). It was only in the 1990s that publications on the mobility of academic personnel began to appear in higher education journals, with significant growth especially from 2005 on (Shen et al., 2022; Huang, Welch, 2021).

Netz et al. (2020, p. 328, our translation) define international academic mobility “as the movement of scientists and information across national borders”, whether physical or virtual. According to these authors, scientists can work in the academic or corporate sector and be involved in both research and teaching activities, either simultaneously or separately. For Shen et al. (2022), international academic mobility can be analyzed from two dimensions – spatial and temporal. While the temporal dimension includes short-, medium-, and long-term stays, as well as migration, the spatial dimension involves physical and virtual movements.

It has become increasingly evident that academic mobility has been considered a crucial factor in recognizing a career as “successful”. Netz et al. (2020), in a literature review study, highlighted that international mobility had positive effects on an academic career, on scientific productivity, and on collaborations. These effects were observed for both short-term and long-term mobility. Nevertheless, the positive effects may weaken over

time due to geographic distance, which hinders interactions. In regard to an increase in skills and scientific knowledge, access to research resources, and an increase in symbolic capital, the impacts proved to be less robust (Netz et al., 2020). On the other hand, studies such as those by Delicado and Alves (2013) and van der Wal (2021) indicate that immobility or limited mobility is often associated with slower career progression, limited opportunities to occupy coordination and management positions, difficulties in entering international collaboration networks, and even career abandonment.

Given these considerations, scholars have asserted that mobility, together with measurable results and growing productivity, has become an imperative that guides the strategies and decisions of universities and funding sources around the world (Gibb, 2022; Bauder, 2015). It is often assumed that placing academics in different teaching and research systems impacts their activity, which may be beneficial not only for the individuals themselves, but also for science, and that will contribute to progress in knowledge and skills, as well as expand collaboration networks (Scellato et al., 2012; Dueñas-Fernández et al., 2013; Cao et al., 2020) and research lines (García-Pascacio et al., 2023).

The literature suggests that diverse factors affect the propensity toward mobility and also its feasibility, duration, and geographical scope, with particular emphasis on the individual characteristics of the academics, such as gender, age, and race; the cultural aspects of each country; legislation and policies regarding science, technology, and innovation (ST&I) and migration; the profile and the reputation of the educational and scientific institutions in the countries of origin and destination; and the specific aspects of each field of knowledge (Nguyen Thi Phuong Tam, Araujo, 2017; Jenkins, 2020). Considering the variety of factors cited above, these studies hold that it is necessary to analyze the effects of international mobility on scientists' careers in light of these elements. Therefore, for a more comprehensive understanding of the phenomenon of international academic mobility, this article presents the results of a mapping of international literature that identified the main research topics addressed in scientific articles published from 2013 to 2022 on international academic mobility. The investigation also identified the geographic and temporal distribution of the publications, as well as gaps in existing research. This study contributes to an understanding of the dynamics and impacts of academic mobility in a global context.

In this study, we have adopted the term “international academic mobility” to indicate cross-border physical movements that involve the short-, medium-, or long-term presence of teaching professionals and researchers, whom we refer to here as “academics”, in scientific institutions of other countries (Netz et al., 2020; Shen et al., 2022; Bamberger, 2022; Jöns, 2018; Urry, 2002) for purposes of knowledge exchange – in classes, lectures, visits, learning, and training – as well as for teaching and/or research. The scope of this study does not include movements of internationalization of higher education carried out exclusively by undergraduate, master's,

or doctoral students, or by administrative staff of higher education institutions (HEIs). Mobility during doctoral studies was only considered when the studies that analyzed it were conducted after it was completed, with the aim of analyzing its contribution to the professional activity of the academics. Thus, in our study, the term “academics” encompasses professionals who have completed doctoral studies engaged in post-doctoral research or in effective teaching and/or research positions in any modality of employment and career stage (assistant professors, full professors, and others, with full- or part-time contracts for a determinate or indeterminate period).

This study is justified through the aim of broadening understanding of the various factors associated with international academic mobility, with the potential for providing guidelines for public policy, as well as for improving governmental capacities in this field.

The following sections outline the methodological procedures adopted, describe the origin of the data, and detail the methods used to compose and analyze the sample, as well as present the research findings, discussion, and final considerations.

1. DATA AND METHODS

This exploratory study uses a mapping review to examine how the international literature has addressed academic mobility and its impacts on academic careers. Following a systematic approach inspired by Booth et al. (2021), the review involved identification, screening, inclusion, and three rounds of analysis. To enhance consistency and reduce bias, key decisions throughout the process—from data collection to validation of results—were discussed and confirmed by the research team. The database was built from searches conducted on 28 February 2023 in the Scopus and Web of Science databases. The search covered articles published between 2013 and 2022 and combined terms related to three core dimensions: collaboration/cooperation, mobility, and academic career.¹ Figure 1 summarizes the identification, screening, and analysis processes.

In the first step (“identification”), searches were conducted, the database was organized, and the records were checked for consistency. The database was constructed from the results of searches conducted on 28 February 2023 in the Scopus and Web of Science databases to identify and select articles² published over a 10-year period, from 2013 to 2022. Three central themes were defined to establish the main search terms: (1) collaboration/cooperation, (2) mobility, and (3) career. The set of English-language terms used in the selected databases was as follows:

¹ The complete search strings are provided in the Supplementary Material, in the Appendix to this paper.

² In both databases, the “article” category includes literature review and empirical data analysis studies.

- cooperation/collaboration - “collaboration”, “academic collaboration”, “international collaboration”, “international co-authorship”, “international cooperation”, “international networks”, “research collaboration*³”, “scientific collaboration”, “local connections”, “cooperation”;
- mobility - academic mobility”, “domestic mobility”, “international experience”, “global mobility”, “international mobility*”, “national mobility”⁴, “scientific migration”, “scientific mobility”, “geographic mobility”, “international migration”;
- career - “academic career”, “researcher*”, “researcher careers”, “scientist”, “scientific careers”, “post*doc*”, “post-doctoral positions”, “faculty”.

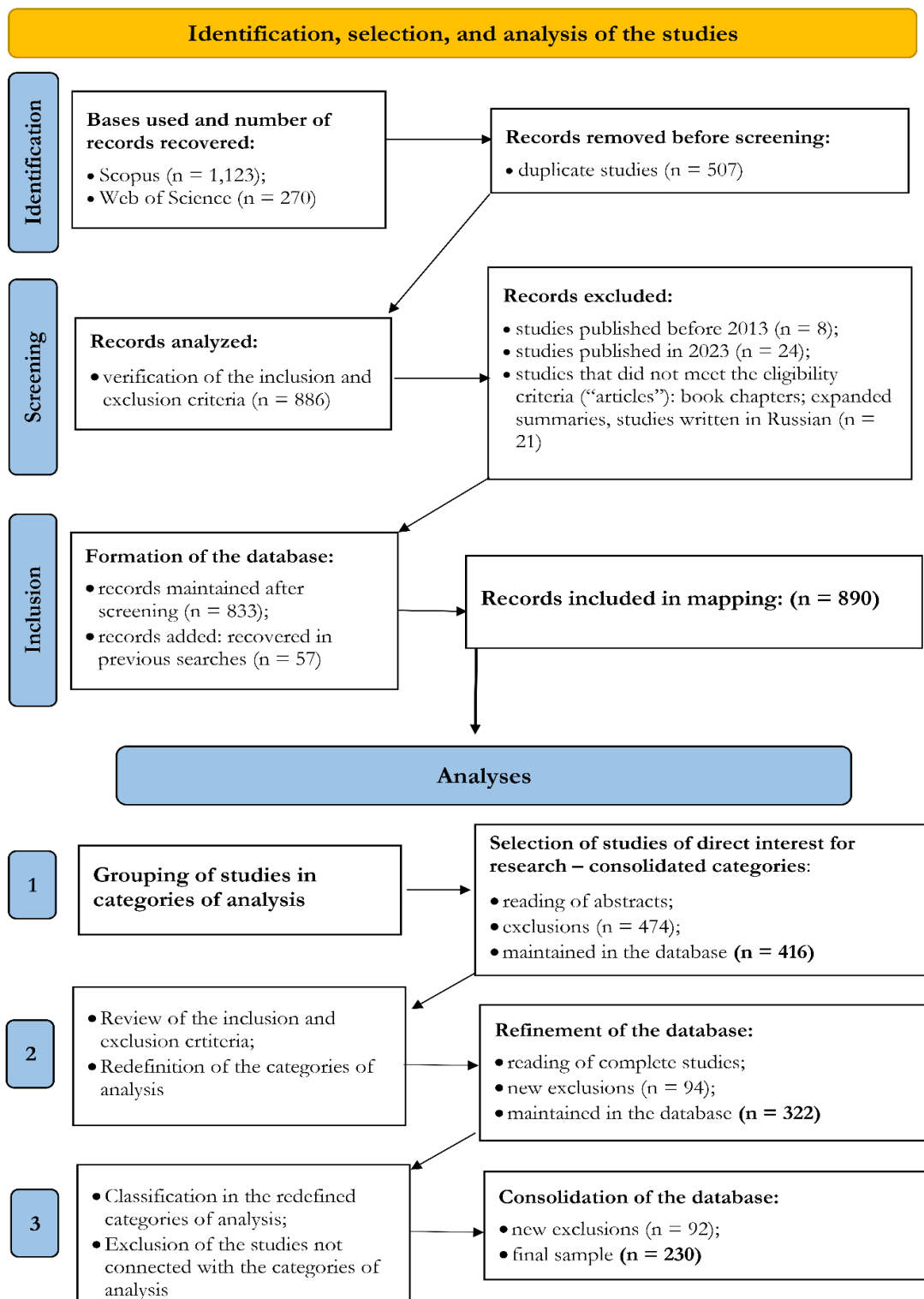
In the first round of analysis, only the abstracts of the articles were read for classification in the initial categories, called “framing categories”, which were defined based on previous bibliographical surveys and reviews of literature. We identified the main themes discussed by scholars in the field. We added dimensions related to the impacts of international mobility addressed in the study of Netz et al. (2020), namely, career, scientific productivity, and collaborations, with other dimensions addressed in the studies of Uhly et al. (2017), Gomez et al. (2020), Kozlowski et al. (2022), and Nguyen Thi Phuong Tam and Araújo (2017), such as gender and racial inequality, and center-periphery relations in production of scientific knowledge. These combinations enabled us to gain a broader understanding of the impacts of international mobility on the various fields of academic activity.

In the second round, the framing categories were refined and conceptually defined, both to clarify the meaning of each of them for the present study and to avoid conceptual redundancies. In addition, the inclusion and exclusion criteria were also reviewed: inclusion: documents that addressed international academic mobility; exclusion: documents that dealt with internationalization of higher education, with student mobility, and with domestic and international collaboration without the mobility component.

³ The symbol * is used to substitute the suffix, seeking all possibilities in the query.

⁴ The inclusion criterion restricting the review to international mobility was defined only after the searches had been conducted. At the outset, a broader search strategy was employed, encompassing both international and national mobility.

Figure 1. Flowchart of the identification, selection, and analysis process



Source: Prepared by the authors, inspired by the PRISMA 2020 flow diagram (Page *et al.*, 2021).

Note: The PRISMA 2020 flow diagram templates are distributed in accordance with the terms of the Creative Commons Attribution (CC BY 4.0) license, which permits others to distribute, remix, adapt and build upon this work, for commercial use, provided the original work is properly cited.

At the end of rounds 1 and 2, we retained only 322 articles in the database, after the exclusion of 94 documents, and then proceeded to the third, and final, round of analysis. In the third round, the articles were once more distributed among the team members for reading of the complete texts. In this round, in addition to classifying the articles into the seven consolidated categories – 1) “cooperation”; 2) “occupational status”; 3) “research funding”; 4) “racial inequality”; 5) “gender inequality”; 6) “academic performance”; 7) “center/periphery” (concepts defined at the end of this section) – we also sought to identify the following elements: a) the population investigated; b) the location of the study (country, group of countries or region); c) methodology used; and d) duration (longitudinal or non-longitudinal), which will be taken up again in the next section. Finally, we focused on identifying specific aspects that were not previously emphasized, such as research gaps and differences in approaches regarding the role of international academic mobility.

Management of the database and the steps of identification, screening, inclusion, and analyses, as well as the preparation of graphs and figures, were performed with the support of the Microsoft Excel spreadsheet software. The database contained the following information: article title, abstract, Digital Object Identifier (DOI), authorship, year of publication, source of publication (repository/journal), the initial framing categories (in a single variable), the consolidated categories (one variable for each column), and the combination of the consolidated categories.

An objective was to analyze the convergence among the consolidated categories, and so in the third round, the database was structured to allow the same article to be classified in multiple categories, thus expanding the possibilities for analysis. The total number of category combinations (C) is given by the formula $C = p^k$, where “p” is the number of possibilities of framing the article within a certain category. There are two possibilities: “0”, if the article is not associated with the category, and “1”, if it is. For its part, “k” refers to the number of categories proposed, which in this article is 7, resulting in 128 combinations. Table 1 of the Supplementary Material presents these combinations, as well as the frequency of articles for each combination. The combination among categories, that is, allowing an article to be classified in more than one category, is an important and interesting mechanism because it makes it possible to determine whether the article analyzed within one category needs others to argue and support an issue.

In addition, we performed bibliometric analyses using the Python language (Pandas and Numpy libraries) to obtain indicators of author productivity, geographic distribution of study locations, and analysis of keywords based on their respective frequencies. The generated data were exported in .xlsx format, and the results were presented graphically using Microsoft Excel. To create a cloud of the most frequent keywords, we used the tool available on the WordClouds.com website (<https://www.wordclouds.com/>).

1.1 Conceptualizing the Framing Categories

The seven consolidated framing categories that guided the analysis in this study are the following: 1) “cooperation”; 2) “occupational status”; 3) “research funding”; 4) “racial inequality”; 5) “gender inequality”; 6) “academic performance”, and 7) “center/periphery”.

The term “cooperation” is used in this study to include the partnerships established among researchers, which range from the most consolidated kinds that lead to the formation of scientific teams (constituted by collaborative networks with different types and degrees of interaction and integration) to sporadic partnerships between two or more researchers (Bennett; Gadlin, 2012).

“Occupational status” refers to the different phases or steps in profession academic careers. As Arthur (1989, p. 8, free translation) clarifies, career is understood as the “evolutionary sequence of the work experiences of a person over time”, including recruitment, progression, responsibilities, removals and leaves of absence, up to severance. This includes initial professional registration, which marks entry into the academic environment as teaching and/or research staff, followed by early years dedicated to teaching, research, and extension. Career progression involves obtaining titles and fulfilling institutional requirements, which may lead academics to take on positions of greater responsibility, such as course coordinators or department heads. Final phases include severance, as in dismissal and retirement. A realistic view of the academic career requires consideration not only of successes – professional advancement, recognition – but also of challenges – failures, difficulties faced by academics – as highlighted by Fischer (2016).

“Research funding” encompasses the financial resources that academics are able to obtain to carry out their investigative activities. In the context of this study, this category is related to the possible impact of international mobility on obtaining funding for scientific research. According to Tsugawa and Sugihara (2022), funding is considered a critical factor for the continuity of academic research, and it is affected by increasing competition among researchers.

By “racial inequality” and “gender inequality” we refer to disparities in composition of the scientific labor force, including barriers to career entry, as well as opportunities for full career development (Kozłowski et al., 2022). In respect to race, the term was used to represent differences in opportunities for academics who are part of historically marginalized groups, such as indigenous peoples and peoples of African descent, or those from certain countries or regions. It should be emphasized that, currently, both biological and social sciences agree that race is not a biological attribute, but rather a social construct. For that reason, scientists have preferred to use “the term ‘ancestry’ to more appropriately reflect human variations and their connections with the geographic origins

of their ancestors” (Chou, 2017, n.p., free translation).

The term “gender” was used to represent differences in academic opportunities that result in systematic privileges for a certain sex or gender to the detriment of others. These gender-related disadvantages are generally cumulative and multidimensional, arising from the effects of several variables, including emotional, social, economic, and political contexts (Nguyen Thi Phuong Tam; Araújo, 2017). According to Uhly et al. (2017), gender is an analytical concept or a basic principle that organizes material, social, and cultural life, which is both produced from social interactions and built up through structures and standards in force in society. Lando and Souza (2020, p. 44) point out that the prevailing standard is still that of “gender binarism”, which represents the “naturalization of a fixed understanding of what it is to be man or woman”, unlike “gender identity”, which is linked to individual and inner experiences, representing “feeling like a man and/or woman (or neither one or the other)”. In this perspective, people can express their gender identity through their appearance – for example, clothing and accessories (Becker et al., 2023).

By “academic performance”, we refer primarily to the outcomes of academics’ professional activities, particularly their measurable impacts, such as publication output, citation counts (Bærøe et al., 2022), and participation in and engagement at scientific events, as well as to qualitative improvements perceived by academics themselves in their teaching and/or research as a result of international experience. Netz et al. (2020) note that research on this topic has identified positive effects of international mobility on scientific productivity, particularly regarding publications and patents.

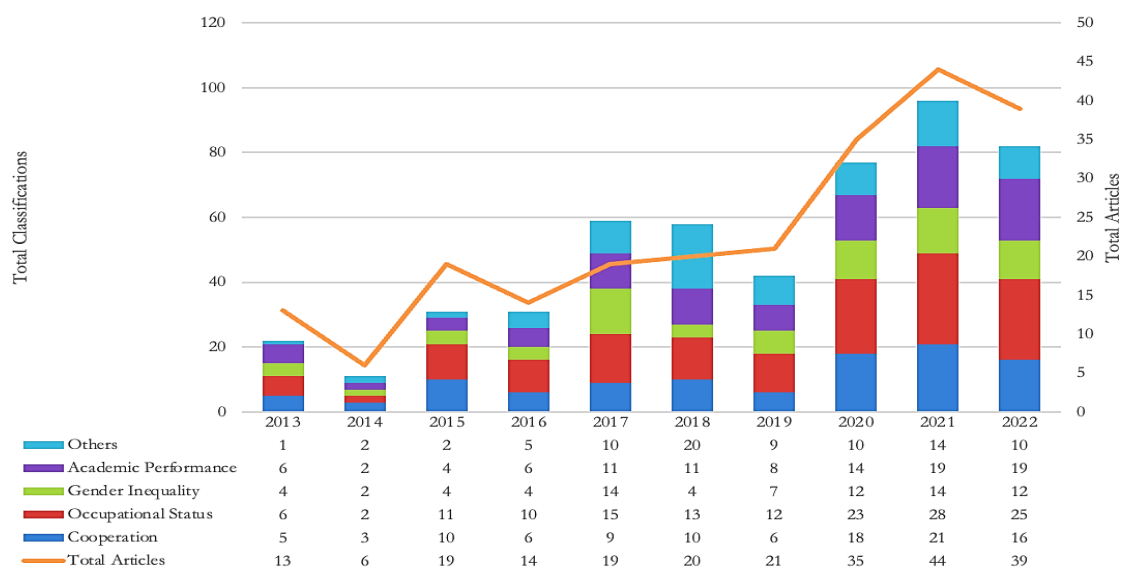
Finally, the “center/periphery” category refers to asymmetric relationships between academics from less developed or developing countries, which occupy a peripheral role in the global scientific system, and academics from the countries that are at the center of this system (Demeter, 2019; Olechnicka et al., 2019). According to World-System Theory (Wallerstein, 2004), the center is formed by dominant capitalist countries, which act not only as industrial and economic centers, but also as cultural and scientific centers. The periphery, made up of less industrialized and generally agrarian countries, provides labor and raw materials to the central countries. The semi-periphery, on the border between the center and the periphery, has characteristics of both blocks. The semi-periphery can play different roles in the world system, acting either as the periphery in relation to the center, or as the center in relation to the periphery. These discussions can also be framed based on the Global North / Global South relational pair; the countries of the North are the main destination of international mobility, due to their developed and knowledge-intensive educational and research systems; and the countries of the South, in general, are seen as unattractive for mobility, as a result of their poorly developed educational and research systems, inadequate academic career structures, low salaries, and other factors (Zdravkovic et al., 2016).

For the purposes of this study, center and periphery / North and South can also refer to the discrimination faced by academics from peripheral regions when they enter in central institutions, where prejudice may arise related to origin and/or ancestry (country, region, race, or ethnicity). This debate also appears in the hegemony of the English language and in control of what is published in the journals of greatest prestige.

2. RESULTS

In this section, we present the results of analyzing the 230 studies in the sample based on the criteria described in the methodology. It is essential to recall that the present study investigated the impacts or repercussions that international mobility has on the professional history of academics. Our analysis revealed that 475 authors authored the studies comprising the sample. It can be observed that there was continuous growth in the number of articles from 2013 to 2022, with a notable increase between 2019 and 2021 (Figure 2). Regarding thematic classification of the articles, the most frequent category was “occupational status”, both in terms of the total number of classifications (28.5%) and the total number of articles of the sample (63.0%) (Table 2 of the Supplementary Material), a trend that remained predominant throughout the period investigated (Figure 2). It was the exclusive category in 26 articles (11.3% of the total), and along with other categories, it appeared in 119 articles. Following that, the most representative categories were “cooperation” (45.2% of the total) and “academic performance” (43.5%). The categories “gender inequality” (33.5%) and “center/periphery” (23.0%) appeared in intermediate positions. The least frequent categories were “research funding” (8.3%) and “racial inequality” (4.8%).

Figure 2. Distribution of the articles by years and categories, 2013 to 2022

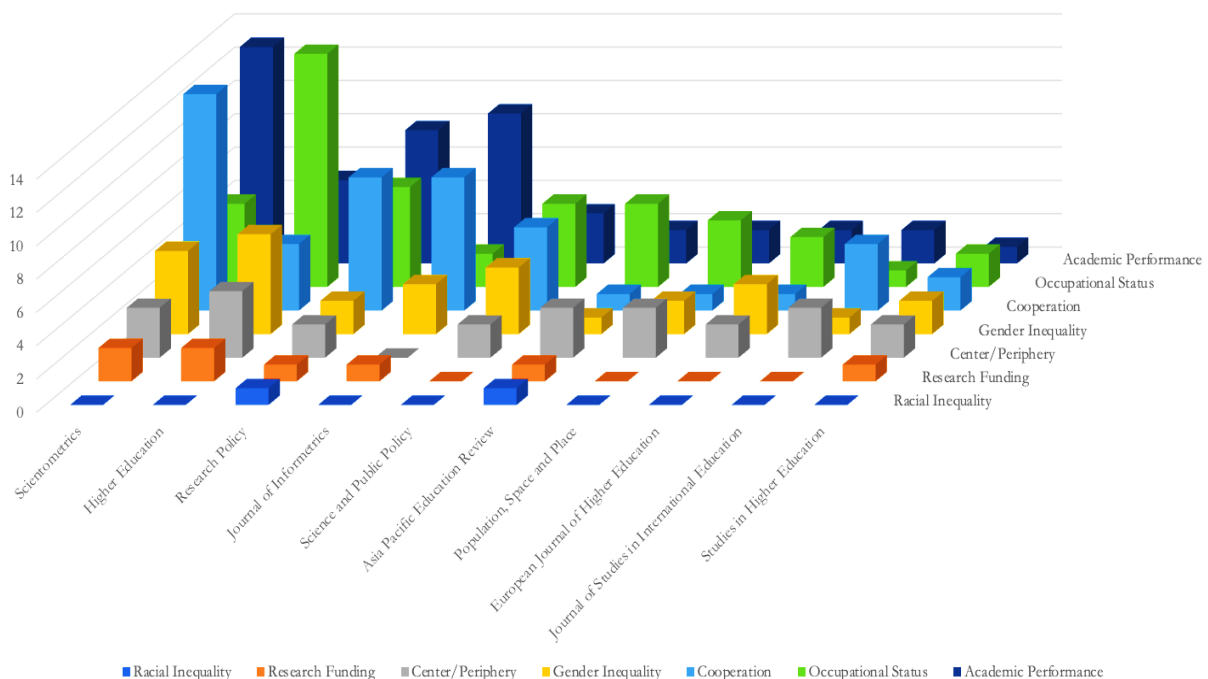


Source: Prepared by the authors based on research data.

Note: the most frequent categories are used; the others were placed in the category “others” (“research funding”, “racial inequality”, and “center/periphery”).

The articles were published in 116 different journals and four conference proceedings (Table 3 of the Supplementary Material). An analysis of this group of repositories (journals and proceedings) in which the 230 studies were published showed that 62.2% of the journals accounted for publication of from 2 to 17 documents, while the other 37.8% published only one article addressing the theme of international academic mobility between 2013 and 2022. The top 10 journals with the highest number of articles, along with classification into categories, are shown in Figure 3. The journal with the highest concentration of articles was *Higher Education*, with 17 studies, and the year 2021 stood out, with six published studies (the highest concentration in the period). Regarding the categories of analysis, the “occupational status” category stood out, appearing in 14 of the 17 documents published in this journal. Additionally, 13 articles based their analyses on qualitative methodological approaches. This journal has been prominent in the field of studies on higher education, publishing theoretical and empirical studies focused on deepening understanding of issues concerning this theme around the world. In addition to *Higher Education*, other journals featured higher education as a central part of their scope, such as *Journal of Studies in International Education* (6 articles), *Asia Pacific Education Review* (5 articles), *Studies in Higher Education* (4 articles), and *Higher Education Quarterly* (3 articles), among others.

Figure 3. Mapping of the top 10 journals and classification into categories, 2013 to 2022



Source: Prepared by the authors based on research data.

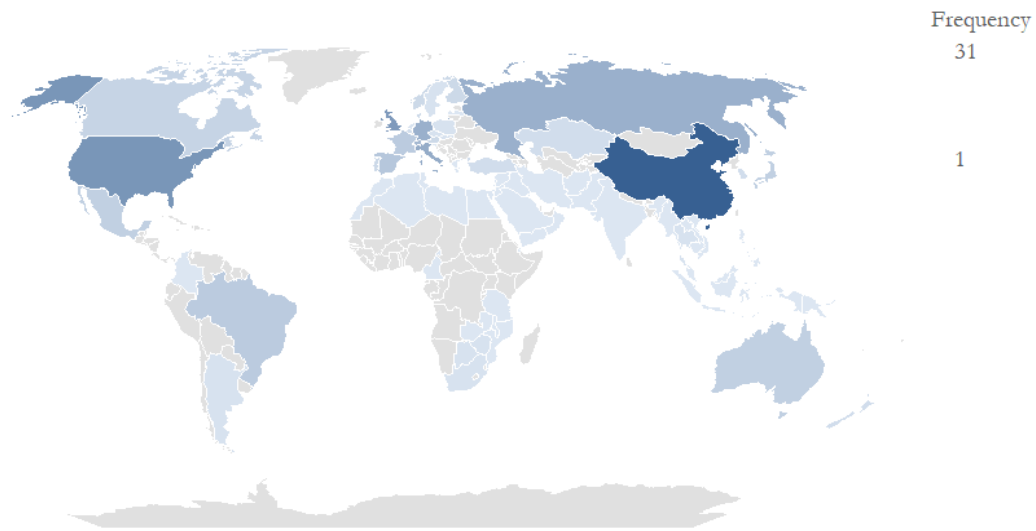
In the journal *Scientometrics*, which publishes quantitative investigations related to production, communication, and use of scientific and technological information, 15 articles were found. Observing the

classification of the documents in the analysis, two categories stood out, “cooperation” and “academic performance”, which appeared together in 11 articles. Another journal that stood out was *Research Policy*, with 12 documents, which were classified in the “cooperation” and “academic performance” categories. This journal is recognized for publishing studies based on methodologies that combine qualitative and quantitative approaches, and especially for publishing results with implications for policy and management in the field of science, technology, and innovation. We found other journals that also encourage contributions based on quantitative studies (bibliometrics, scientometrics, webometrics, patentometrics, and altmetrics), such as the *Journal of Informetrics* (9 articles) and *Quantitative Science Studies* (3 articles). In these two journals, the “cooperation” and “academic performance” categories also stood out as the most frequent. Finally, within the set of articles studied, four were published in Conference Proceedings, with two in the *Proceedings of the International Conference on Scientometrics and Informetrics*, a scientific event organized by the International Society for Informetrics and Scientometrics (ISSI).

Regarding the methodology used in the articles under analysis, there is a certain balance between quantitative methods (42.2%) and qualitative methods (34.4%), while the studies that used mixed methods, that is, both quantitative and qualitative approaches, accounted for 19.1%, as shown in Table 4 of the Supplementary Material. There is also a small set (4.4%) that used only literature review. In regard to geographic distribution, that is, the locations studied in the research that gave rise to the mapped articles, we identified that 17.8% of the articles (41) were directed to an international context, without identification of individual countries. A large number of studies dealt with academic mobility in the Chinese context, with China being mentioned as the study location in 31 articles, which accounts for 13.5% of the articles in the sample. That exceeds studies focused on central countries (or countries of the Global North) that are traditionally the most aspired to, such as the United States, with 19 articles (8.3%), and United Kingdom, with 18 articles (7.8%) (Figure 4 and Table 5 of the Supplementary Material). Other countries with more than 10 studies each were Italy (14), Russia (13), Germany (13), and Switzerland (11), which were among the locations most studied in the articles that make up our sample (Figure 4 and Table 5 of the Supplementary Material). Among the countries that appeared as study locations for international academic mobility in a more widespread manner are Spain, in eight articles; Brazil and France, both appearing in seven articles; and then Japan, Australia, and Mexico, each of which appeared in six articles. A smaller number of studies focused on countries such as Canada (5), Finland (4), Austria (4), Portugal (4), and Norway (4). Likewise, with only 3 studies each, were South Korea, Denmark, Kazakhstan, Singapore, Turkey, New Zealand, and Belgium. In a more specific way, we observed a group of countries with 1 or 2 occurrences, such as Poland (2), South Africa (2), Thailand (2), Colombia (1), Vietnam (1), and India (1). In addition, we identified articles that referred to study locations more generally – for example, continents or regions of continents (Figure 4 and Table

5 of the Supplementary Material).

Figure 4. Distribution of the articles according to the study location, 2013 to 2022

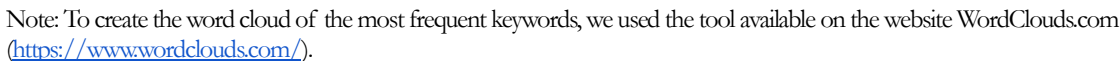


Source: Prepared by the authors from research data and with the support of the Bing platform.

Note: Studies were also found that referred to German language academia countries (1), Africa (1), North America (1), South America (1), Latin America (1), Asia (2), Europe (9), Western Europe (2), International (41), East Asia (1), Oceania (1), and the European Union (2). One study in the literature review did not mention countries.

The keywords most used by the authors, at least three times each, coincide with the search terms themselves and the filters applied to the searches that are mentioned in the methodology section, such as international mobility and academic career, as shown in Figure 5. Various terms are associated with mobility, indicating both the direction of mobility (“geographical mobility”, “international migration”, “return migration”, “international academic mobility”, “international mobility”, “brain drain”, “brain circulation”, and “returnees”) and the people performing the mobility (“faculty mobility”, “high-skilled migration”, “research productivity migration”, and “talent mobility”). Terms related to the context of the mobility also appear (“academic inbreeding”, “internationalization of higher education”, “globalization”, “academic labor”, “career development”, and “internationalization”), and analysis methods and approaches (“network analysis”, “bibliometrics”, “scientometrics”, “science of science”, and “Bourdieu”). Terms referring to the most frequent countries, regions, or areas appear (“Germany”, “China”, “Canada”, “European Research Area”). The keywords reflect the categories most used in the analysis, such as those related to academic performance (“scientific productivity”, “research performance”, “productivity”), cooperation (“research collaboration”, “international research collaboration”, “scientific collaboration”, and “collaboration networks”), and gender equality (“gender equality”).

Source: Prepared by the authors.



This study mapped the literature regarding international academic mobility in scientific articles published between 2013 and 2022 in the Scopus and Web of Science databases. The search strategy, described in the methodology section, proved to be successful, considering that the keywords present in the articles that made up the sample coincided with the categories established for the analysis. In this respect, the methodological approach developed for this study proved to be effective in mapping ten years of the theme, confirming that the literature review efforts prior to the survey led to greater accuracy in the results.

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topic. Among them is the article of Kato and Ando (2017), who identified that major motivations for mobility include the search for locations that offer a more suitable environment for research activities and knowledge advancement. According to the authors, that includes access to better scientific infrastructure and financial resources, without which researchers are not able to fully develop their potential.

In other articles, the funding issue was marginally addressed, without making a more direct and incisive association regarding the relationship between funding and international mobility, as in the studies of Carrozza and Minucci (2014) and Netz et. al. (2020). Although we found some arguments in these studies indicating that mobility has potential in favoring access to the research infrastructure and funding in the countries of destination, the authors did not more deeply develop these arguments in their studies. In addition, the authors held that studies are lacking that confirm the relevance of the relationship between funding and international mobility.

We also observe the lack of studies that had “gender inequality” as the central topic of the discussions, since only eight articles were exclusively classified in this category (3.5% of the total), indicating a low number of articles in the sample that were designed for an in-depth study of gender issues in academia and their relationships with international mobility. Nevertheless, we perceive that this theme was taken up in different studies, even if in a marginal way, in discussions related to other categories, such as “occupational status” and “academic performance” (Table 1 of the Supplementary Material). In general, we found that the studies investigated addressed this theme from the perspective of “gender binarism”, which, according to Lando and Souza (2020, p. 38), is founded on the categories of masculine and feminine corresponding to the biological designations (man/woman) and not on “gender identity”, which is linked to the individual and inner experiences that shape one’s sense of self, in other words, the feeling of identifying oneself as a man or woman, or of not identifying oneself as either. Although some studies, such as that of Momeni *et al.* (2022) have recognized gender as a non-binary identity, the authors of these studies chose to adopt the binary approach due to lack of sufficient information for an analysis that considered all possible gender variations.

Furthermore, the studies based on bibliometric data generally used the authors’ names for gender identification. However, this methodological approach can be problematic if complementary criteria are not adopted, as there are neutral names used both for men and women, as well as linguistic variations that make the names considered masculine in one language feminine in another. Other factors related to linguistic and cultural differences can also have an impact. Thus, for accurate gender identification, it is necessary to go beyond name analysis, incorporating information from other sources, such as questionnaires or interviews, or collecting data that include self-declaration of gender. Therefore, gender identification based on names has significant limitations, which require more robust and inclusive approaches.

Regarding inequalities in international academic mobility, we found that the category of “racial inequality” was identified in only 4.8% of the studies in our sample, despite the growing attention this issue has received within universities in recent years. The lack of reliable data on gender and racial diversity reflects the methodological challenges faced by researchers and may help explain the limited number of studies addressing international mobility from these perspectives. The small number of studies examining gender- and race-related issues in our sample reveals a significant gap in the current state of knowledge on this topic. This gap may hinder a more comprehensive understanding of the diverse factors shaping international academic mobility.

We observed that most of the studies focused on countries in the Global North. Given that these countries continue to be the main destinations for internationally mobile academics, this predominance may be interpreted as symptomatic of a status quo that reinforces the center–periphery dynamics discussed in the literature. The asymmetries observed in the distribution of studies between the Global North and the Global South further suggest that the specific characteristics of peripheral countries remain underrepresented in research on international academic mobility. Our review identified only 16 studies (6.9%) focused on Latin American countries, highlighting the limited representation of this region in the literature.

We also identified studies that recognize countries traditionally not considered part of the Global North as key science centers in their regions. These countries are attracting both regional researchers and those from other parts of the world. The significant presence of studies focused on China, for example, may highlight the country's rise to a prominent position in international academic mobility. This trend indicates a shift in traditional Center-Periphery relationships, introducing new destinations and connections between countries. The literature suggests that the growing interest in mobility flows related to China is linked to the country's increasing global relevance across various fields of knowledge (Adriansen; Madsen, 2021; The Authors, 2023). Thus, we observed studies indicating that countries traditionally considered part of peripheral regions, or even of the Global South, such as China, India, Singapore, and South Korea, could represent a center, depending on the context, by attracting researchers from their regions, who at another moment could have gone to the United States or to Western Europe. While countries of the Global North still predominate, the rise of nations such as China, India, Singapore, and South Korea challenges the established dichotomy (North as Center, South as Periphery). The results taken from the sample suggest that these countries are emerging as new centers of knowledge production, as well as new destinations for international academic mobility.

This phenomenon was identified in the study of Shin and Gress (2018), for example, who addressed the career progression of non-Korean expatriates, generally Western and English speaking, at a South Korean university considered a center of excellence. The study of Huang (2018), in turn, examined the hiring of foreign

researchers and professors, coming mainly from China, the U.S.A., Korea, and the U.K., aiming at internationalization of Japanese universities. Wang *et al.* (2019, p. 459), in a study focused on Singapore, noted that the country has emerged as an “growing center of knowledge that attracts academics with job opportunities outside of the traditional centers”. In a bibliometric study, these authors studied the collaboration patterns of the Singaporean native academics and international academics living in the country for at least five years. They found that 50.0% of the international academics in Singapore came from the Asia-Pacific region, 17.0% from Europe, 8.0% from North America, and 1.0% from Africa. These findings are important because they offer new perspectives on the dynamics that have been established in recent years within the field of international academic mobility. It should be highlighted that the use of the concepts of center-periphery in science, based on the World-Systems Theory of Wallerstein (2004) has been contested by Marginson and Xu (2023). They understand that this theory is not able to politically contextualize the emerging nations in their regions, nor does it represent the relationships among scientists in knowledge production, which can be quite horizontal. These authors argue that predetermined approaches toward center-periphery relationships contribute to obscure, or even deny, “the growing multipolarity in science”, “the autonomy and agency of nations and individuals”, and “the simultaneous construction of scientific systems in many countries categorized as semi-periphery and some on the periphery”, among other aspects (Marginson; Xu, 2023, p. 42-43).

Analysis of journals and conference proceedings on international academic mobility, in turn, has revealed diverse focuses and methodologies, reflecting the complexity and growing importance that this theme has acquired over the years. The predominance of publications dealing with the category “occupational status”, which represents 63.0% of the sample (Table 2 in the Supplementary Material), shows a significant emphasis on investigating the dynamics of academic careers. In the journal *Higher Education*, for example, more than 82.3% of the articles (14 of 17) were in this category (Figure 3). In contrast, the prevalence of quantitative studies in journals such as *Scientometrics* and *Journal of Informetrics*, focused on indicators of scientific productivity – for example, publications and citations – show the importance attributed to studies that analyze academic performance.

The findings underscore the importance of ongoing monitoring of international academic mobility discussions and the development of effective data collection methods to assess its impacts on scientific systems, economies, and individual careers. Future research could explore changes in this mobility landscape compared to this study, addressing questions such as: Will gender and race inequalities become more prominent in the literature? Will Latin America remain underrepresented? Will emerging destinations sustain their appeal, or will other countries rise in prominence? Furthermore, fostering interdisciplinary dialogue is crucial for comprehending the implications and challenges of international academic mobility.

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APPENDIX - SUPPLEMENTARY MATERIAL

Table 1. Distribution of articles according to the combination of analysis categories

Combination of categories	Frequency	%
Occupational Status Gender Inequality	27	11.74
Occupational Status	26	11.30
Cooperation Academic Performance	19	8.26
Cooperation	16	6.96
Cooperation Occupational Status Academic Performance	16	6.96
Academic Performance	13	5.65
Occupational Status Center/Periphery	10	4.35
Gender Inequality	8	3.48
Occupational Status Academic Performance	8	3.48
Occupational Status Gender Inequality Center/Periphery	6	2.61
Cooperation Academic Performance Center/Periphery	5	2.17
Cooperation Gender Inequality Academic Performance	5	2.17
Cooperation Occupational Status Center/Periphery	5	2.17
Cooperation Occupational Status Gender Inequality Academic Performance	5	2.17
Cooperation Gender Inequality	4	1.74
Cooperation Occupational Status	4	1.74
Cooperation Occupational Status Gender Inequality Academic Performance Center/Periphery	4	1.74
Occupational Status Racial Inequality Gender Inequality	4	1.74
Cooperation Center/Periphery	3	1.30
Cooperation Occupational Status Academic Performance Center/Periphery	3	1.30
Cooperation Occupational Status Research Funding Academic Performance	3	1.30
Occupational Status Academic Performance Center/Periphery	3	1.30
Occupational Status Gender Inequality Academic Performance	3	1.30
Center/Periphery	2	0.87
Cooperation Research Funding	2	0.87
Cooperation Occupational Status Gender Inequality	2	0.87
Academic Performance Center/Periphery	2	0.87
Occupational Status Racial Inequality	2	0.87
Occupational Status Research Funding	2	0.87
Cooperation Gender Inequality Academic Performance Center/Periphery	1	0.43
Cooperation Research Funding Center/Periphery	1	0.43
Cooperation Research Funding Academic Performance	1	0.43
Cooperation Research Funding Gender Inequality Academic Performance Center/Periphery	1	0.43
Cooperation Occupational Status Research Funding	1	0.43
Cooperation Occupational Status Research Funding Academic Performance Center/Periphery	1	0.43

Combination of categories	Frequency	%
Cooperation Occupational Status Research Funding Gender Inequality	1	0.43
Cooperation Occupational Status Research Funding Gender Inequality Academic Performance	1	0.43
Racial Inequality Center/Periphery	1	0.43
Research Funding	1	0.43
Occupational Status Gender Inequality Academic Performance Center/Periphery	1	0.43
Occupational Status Racial Inequality Center/Periphery	1	0.43
Occupational Status Racial Inequality Gender Inequality Academic Performance	1	0.43
Occupational Status Racial Inequality Gender Inequality Academic Performance Center/Periphery	1	0.43
Occupational Status Research Funding Academic Performance	1	0.43
Occupational Status Research Funding Academic Performance Center/Periphery	1	0.43
Occupational Status Research Funding Gender Inequality	1	0.43
Occupational Status Research Funding Racial Inequality Gender Inequality Academic Performance Center/Periphery	1	0.43
Overall Total	230	100.00

Note: Prepared by the authors.

Table 2. Distribution of articles according to analysis categories in relation to the total number of articles and classifications

Category	No. of articles	No. of classifications	% of articles
Occupational Status	145	28.5	63.0
Cooperation	104	20.4	45.2
Academic Performance	100	19.6	43.5
Gender Inequality	77	15.1	33.5
Center/Periphery	53	10.4	23.0
Research Funding	19	3.7	8.3
Racial Inequality	11	2.2	4.8
Total classifications	509	100.0	
Total articles	230		100.0

Note: Prepared by the authors.

Table 3. Distribution of articles according to the journal

Source title	Frequency	%
Higher Education	17	7.4
Scientometrics	15	6.5
Research Policy	12	5.2
Science and Public Policy	10	4.3
Journal of Informetrics	9	3.9
Journal of Studies in International Education	6	2.6

Source title	Frequency	%
Asia Pacific Education Review	5	2.2
Sustainability	5	2.2
Population, Space and Place	4	1.7
PLoS ONE	4	1.7
Studies in Higher Education	4	1.7
Higher Education Policy	4	1.7
European Journal of Higher Education	3	1.3
Minerva	3	1.3
Higher Education Quarterly	3	1.3
Quantitative Science Studies	3	1.3
Gender, Place and Culture	3	1.3
International Migration	3	1.3
Science, Technology and Society	2	0.9
Социология науки и технологий	2	0.9
Frontiers in Psychology	2	0.9
European Review	2	0.9
Social Inclusion	2	0.9
Globalisation, Societies and Education	2	0.9
Geoforum	2	0.9
Technological Forecasting and Social Change	2	0.9
Asian and Pacific Migration Journal	2	0.9
Gender, Work and Organization	2	0.9
International Journal of Educational Development	2	0.9
European Educational Research Journal	2	0.9
Research Evaluation	2	0.9
Chinese Education and Society	2	0.9
European Journal of Education	2	0.9
Asian Journal of Social Science	1	0.4
VoIRC RAS	1	0.4
Journal of Technology Transfer	1	0.4
Regional Studies	1	0.4
Journal of Vocational Behavior	1	0.4
Public Money and Management	1	0.4
International Journal of Chinese Education	1	0.4
Advances in Gender Research	1	0.4
Gender and Education	1	0.4
Annals of Regional Science	1	0.4
Journal of Sociology	1	0.4
Sociologias	1	0.4
SOTL in the South	1	0.4

Source title	Frequency	%
Science Advances	1	0.4
Geographie Economie Societe	1	0.4
Research in Higher Education	1	0.4
Adult Education Quarterly	1	0.4
Journal of Ethnic and Migration Studies	1	0.4
Politikon	1	0.4
International Perspectives on Higher Education Research	1	0.4
Vibrant Virtual Brazilian Anthropology	1	0.4
Tertiary Education and Management	1	0.4
Cypriot Journal of Educational Sciences	1	0.4
Journal of the Royal Society Interface	1	0.4
Applied Network Science	1	0.4
Global Mobility of Research Scientists: The Economics of Who Goes Where and Why	1	0.4
Network Science	1	0.4
The Academic Profession in Europe: New Tasks and New Challenges	1	0.4
Social Studies of Science	1	0.4
Biotropica	1	0.4
Industrial and Corporate Change	1	0.4
Economy of Region	1	0.4
Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)	1	0.4
Research in Comparative and International Education	1	0.4
Scholarly Assessment Reports	1	0.4
Migration Letters	1	0.4
Revue Europeenne de Psychologie Appliquee	1	0.4
Learning and Teaching	1	0.4
International Journal of the Legal Profession	1	0.4
Current Sociology	1	0.4
Sociological Research Online	1	0.4
International Journal of Leadership in Education	1	0.4
Innovative Higher Education	1	0.4
Journal of Higher Education Policy and Management	1	0.4
Transactions of the Institute of British Geographers	1	0.4
Proceedings of the Association for Information Science and Technology	1	0.4
Social Behavior and Personality	1	0.4
Journal of Information Science	1	0.4
SpringerPlus	1	0.4

Source title	Frequency	%
Japan Forum	1	0.4
18th International Conference on Scientometrics and Informetrics, ISSI 2021	1	0.4
Migraciones	1	0.4
Papers in Regional Science	1	0.4
Journal of International Communication	1	0.4
International Journal of Intercultural Relations	1	0.4
FEMS Microbiology Letters	1	0.4
Scientific Reports	1	0.4
Economic and Social Changes: Facts, Trends, Forecast	1	0.4
Vyshee Obrazovanie v Rossii	1	0.4
Rivista Geografica Italiana	1	0.4
Global Networks	1	0.4
Professional Geographer	1	0.4
International Journal of Sociology and Social Policy	1	0.4
BMS Bulletin of Sociological Methodology/ Bulletin de Methodologie Sociologique	1	0.4
Teaching in Higher Education	1	0.4
Journal of the Association for Information Science and Technology	1	0.4
Psychology of Sport and Exercise	1	0.4
Advances in Complex Systems	1	0.4
Journal of the New Economic Association	1	0.4
Woman in Russian Society	1	0.4
Journal of Scientometric Research	1	0.4
European Journal of Population	1	0.4
PsyCh Journal	1	0.4
17th International Conference on Scientometrics and Informetrics, ISSI 2019 - Proceedings	1	0.4
British Journal of Sociology of Education	1	0.4
Academy of Management Learning and Education	1	0.4
Research in Educational Administration and Leadership	1	0.4
Quality and Quantity	1	0.4
Applied Mobilities	1	0.4
International Journal of Communication	1	0.4
Industry and Innovation	1	0.4
International Studies in Sociology of Education	1	0.4
Journal of University Teaching and Learning Practice	1	0.4
Journal of Global Mobility	1	0.4
Mobilities	1	0.4

Source title	Frequency	%
GeoJournal	1	0.4
Profesional de la Informacion	1	0.4
Total Geral	230	100

Note: Prepared by the authors.

Table 4. Distribution of articles according to the methodologies used

Methodology	Frequency	%
Mixed method	44	19.13
Qualitative	79	34.35
Quantitative	97	42.17
Literature review	10	4.35
Overall total	230	100.00

Note: Prepared by the authors.

Table 5. Distribution of articles according to the location of the identified studies

Location of study	Frequency (no. of articles)
International**	41
China	31
United States	19
United Kingdom	18
Italy	14
Germany	13
Russia	13
Switzerland	11
Europe	9
Spain	8
Brazil	7
France	7
Australia	6

Location of study	Frequency (no. of articles)
Japan	6
Mexico	6
Canada	5
Austria	4
Denmark	4
Finland	4
Norway	4
Portugal	4
Belgium	3
Kazakhstan	3
South Korea	3
New Zealand	3
Singapore	3
Turkey	3
South Africa	2
Argentina	2
Asia	2
Botswana	2
Slovakia	2
Western Europe	2
Hong Kong	2
The Netherlands	2
Poland	2
Czech Republic	2
Sweden	2
Thailand	2

Location of study	Frequency (no. of articles)
European Union	2
Zimbabwe	2
German language academia	1
Afghanistan	1
Africa	1
North America	1
South America	1
Latin America	1
Saudi Arabia	1
Algeria	1
Bahrain	1
Cameroon	1
Cambodia	1
Qatar	1
Colombia	1
Djibouti	1
Egypt	1
United Arab Emirates	1
Slovenia	1
Philippines	1
Greece	1
Yemen	1
India	1
Indonesia	1
Iran	1
Iraq	1
Israel	1

Location of study	Frequency (no. of articles)
Jordan	1
Kuwait	1
Laos	1
East Asia	1
Lithuania	1
Lebanon	1
Libya	1
Macao	1
Malaysia	1
Malawi	1
Marocco	1
Myanmar	1
Mozambique	1
not specified	1
Oceania	1
Oman	1
Palestine	1
Papua New Guinea	1
Pakistan	1
Syria	1
Tanzania	1
East Timor	1
Tonga	1
Tunisia	1
Vietnam	1
Zambia	1

Note 1: Prepared by the authors.

Note 2: A study may refer to more than one country.

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