

University Rankings: Proposal for a Future Research Agenda through a Systematic Literature Review

Tatiane Teixeira *  and Claudia Tania Picinin 

Postgraduate Program in Production Engineering, Federal University of Technology—Parana, Ponta Grossa (UTFPR—PG), Ponta Grossa 84017-220, Brazil; claudiapicinin@utfpr.edu.br

* Correspondence: tteixeira888@gmail.com

Abstract: The purpose of this study is to develop a proposal for a future research agenda on university rankings, based on a systematic review of the existing literature, with emphasis on the following criteria: objectives, countries, types, variables, methodologies, and future lines of research. The analysis of university rankings revealed a need to review evaluation methodologies and reflect on their consequences for educational policies and the strategic management of higher education institutions. The PRISMA method was used to map the literature available on the Scopus database. The findings were systematized to promote a broad understanding by the reader: (i) drawing up a table that condenses the results of this review; (ii) categorizing the objectives identified in the articles; (iii) surveying the number of studies by country; (iv) categorizing the methodologies employed; (v) developing a figure of the categories of variables associated with rankings; and (vi) compiling a table that brings together the recommendations for future research suggested by scholars in the field. As a result, this research not only goes into great detail on issues related to university rankings, but also establishes a path for future research, constituting a robust foundation for educational managers, policymakers, and academics interested in the subject.

Keywords: higher education; university ranking; ranking indicator



Citation: Teixeira, T.; Picinin, C.T. University Rankings: Proposal for a Future Research Agenda through a Systematic Literature Review. *Sustainability* **2024**, *16*, 3043. <https://doi.org/10.3390/su16073043>

Academic Editor: Tai-Yi Yu

Received: 18 February 2024

Revised: 21 March 2024

Accepted: 26 March 2024

Published: 6 April 2024



Copyright: © 2024 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

University rankings are tools used to evaluate and compare the quality and performance of higher education institutions worldwide. These rankings, which cover diverse metrics, including teaching, research, knowledge, innovation, and international perspectives, have played an increasingly significant role in guiding educational policies, investment decisions, and student choices. They also encourage the search for prestige and resources, encouraging universities to align their strategies with the metrics evaluated.

However, despite their growing influence, university rankings are the target of intense debate and criticism, mainly related to their methodologies, evaluation criteria, and impacts on university behaviour.

The purposes of studying university rankings are numerous, among them analysing the challenges and impacts in the search for “world-class” status [1–4] verifying how they reflect and shape educational policies and practices [5], using strategic and competitive tools [6–8], studying how rankings affect perception and internationalisation policies [9], studying the effects of size (number of students) and internationalisation (percentage of international students) on academic rankings [10], relating rankings to the concept of quality and quality assurance [11], as well as reflecting on the limitations and biases of university rankings [12].

Other purposes of studies on university rankings addressed the themes of sustainability in education [13,14], policies in education [15–19], public financing and resources [20,21], and teachers and academics [22–26].

The objectives of studying university rankings also involve the proposal of new models and methodological approaches: the Delphi technique, an approach focused on

industry income; Temporal Topic Model (TTM) method; and the I-distance method and multicollinearity approach [27–31].

In research on university rankings, an approach from a media and dissemination perspective stands out, in which the role of branding in higher education and the influence on marketing and enrolment results is investigated [32]. A further approach analyses how visual images on university rankings websites construct a social image of higher education [33]. One more approach analyses the relationship between university rankings' dissemination and higher education efficiency [34]. An alternative approach analysed how elite higher education institutions and the central classification systems use awards and academic celebrities to reinforce their brands [35].

Given this scenario, the objective of this study is to develop an agenda for future research proposals through a systematic review of the literature on university rankings to identify:

- (1) What are the objectives of each study carried out?
- (2) Which countries are studied?
- (3) What are the university rankings studied?
- (4) Which variables are used to make relationships with university rankings?
- (5) What methods were used?
- (6) What future research has been suggested in the articles by the researchers?

This research is justified by the growing importance of rankings in the governance of universities, in student decision-making, and the political strategies of countries regarding higher education.

Using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines (Supplementary Materials) to identify, analyse, and synthesise the available evidence on university rankings, seeking to uncover gaps in knowledge, methodological trends, and suggestions for future investigations.

This work stands out for its innovative approach, defining an agenda for future research through a systematic literature review on university rankings. This study also facilitates a comprehensive understanding of the field through precise categorisation (including objectives, countries, types of rankings, associated variables, methodologies, and suggestions for future research) and the organisation of objectives into clear themes. The detailed analysis of the main variables and the critical reflection on including recommendations for future research in the mapped articles, culminating in elaborating a summary table, provide an essential macrostructural vision of university rankings studies.

The structure of the article is organised as follows: Section 2 details the methodology used in the literature review; Section 3 presents the six defined categories: objectives of the articles, countries involved, types of university rankings studied, related variables, methodologies used, and proposals for future research; Section 4 discusses the information collected; and, finally, Section 5 concludes the study.

2. Materials and Methods

This paper uses a systematic literature review that 1. identifies and explores concepts and theories previously unknown or not considered by researchers; 2. examines the methodological approaches used in previous studies, including data collection and analysis methods, to improve understanding of their applications and limitations; 3. critically examines the limitations identified in previous studies, with the aim of discerning aspects that can be improved or involved from new perspectives in future investigations; 4. recognises and evaluates the different theoretical approaches and analytical perspectives adopted in pre-existing studies; 5. deepens the interpretative analysis of available data, seeking to improve the understanding of the topics studied and the implications derived from studies on global university rankings [36].

To examine the university rankings studies that have been already explored, a literature review of the existing research publications is necessary to identify gaps in knowledge, find

out what has already been researched, and how it was conducted (use of relevant research methods of data collection and analysis) [37].

For this purpose, the PRISMA [38,39] method (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) is used as a methodological basis for the systematic literature review, synthesising all relevant evidence on the topic. The guiding question for the PRISMA [38,39] method is as follows: what are the gaps in the topic of university rankings? The following categories guided the literature mapping: (1) What are the objectives of each study carried out? (2) Which countries are studied? (3) What are the university rankings studied? (4) Which variables are used to make relationships among university rankings? (5) What methods were used? (6) What future research has been suggested in articles by researchers? The identification of research gaps allows for encouraging and guiding future studies. Table 1 presents the details of the categories studied in this systematic literature review:

Table 1. Details of the studied categories.

Categories	Details
Objectives:	Identify the main objectives of each study analysed, seeking to understand the main questions that guide research regarding university rankings.
Countries:	Identify the geographic distribution of research, highlighting the countries that were the focus of the study to understand whether there is a regional concentration in research or whether it is globally distributed.
University rankings:	Catalogue which university rankings were the subject of study.
Ranking-related variables:	Identify which variables are used in studies to establish correlations or analyses with university rankings.
Methods:	Analyse the methods used in research, including qualitative, quantitative, or mixed approaches, to understand how studies are conducted.
Further research proposals:	Review the recommendations for future research made by the authors to identify gaps that still need to be explored.

Source: Authors (2023).

The title of a manuscript is often the part of an article on the basis of which editors or readers decide whether to invest their time in reading the whole manuscript. The title is read first and must be carefully chosen to attract the target audience. It must be specific enough to convey the exact content of the manuscript. Once the title has been read and if it is of interest, only then will the reader move on to the next section, i.e., the abstract [40].

In this context, the purpose of this article was to search for articles that had the keywords only in the title. The reason is that an attractive title will largely determine whether readers are interested in the article [41]. Silveira, Romeiro, and Noll (2022) [42] further mentioned that the title is the gateway to academic work and is responsible for engaging the reader. It is essential to describe the type of study in the title. Succinct but clear statements will attract more interest in the article [43]. The title should intrinsically incorporate the fundamental concepts or themes [40].

The decision to search only the titles in the database was guided by the need to focus on articles that explicitly centred their discussion on university rankings. This guarantees the direct relevance of the studies retrieved to the aim of the review, which is to draw up a future research agenda on the subject. Specifically, the aim was to identify studies whose main focus was university rankings, as demonstrated by the presence of these words in the title, indicating a direct and unquestionable relevance to the topic of interest.

Using only the titles for the search allowed us to identify articles that had direct and immediate relevance to the topic of university rankings. This approach is based on

the understanding that the titles of articles condense the essence of their content, and, therefore, the presence of terms related to university rankings in titles suggests a thematic concentration which is essential for the focused nature of the systematic review carried out.

The choice to limit the search to titles contributed to a more precise selection of articles, avoiding the inclusion of papers which, although they may mention university rankings tangentially in abstracts or keywords, do not focus substantially on this topic. This method ensured concentration on the core of the debate on university rankings, facilitating a more in-depth and relevant analysis of the literature and future research agendas on the subject.

The application of the PRISMA method, while generally requiring a comprehensive search approach, does not exclude the possibility of adopting focused search strategies when justified by the specific nature of the research topic. In this case, the choice to search exclusively on titles was a conscious methodological decision, aimed at deepening understanding and gathering evidence on university rankings in a focused and efficient manner.

This study explored the articles published in the Scopus database until 30 July 2023. The search in the Scopus database was without time limits. It was limited only to the types of files, “article” and “review”, to identify all studies that presented the defined keywords: “universit* rank*” and “higher education” or “rank* indicator” or “world class universt*” or “global university* rank*” or “world university* rank*” in the title of the article.

The choice of the Scopus database is justified because it is one of the largest and most renowned global academic databases, standing out for its multidisciplinary scope that covers a wide range of areas of knowledge. With its rigorous editorial selection, Scopus ensures the inclusion of high-quality publications, providing broad coverage of peer-reviewed journals, conferences, and books. Additionally, its advanced analysis and citation tools allow researchers to track emerging trends in academia, assess the impact of research, and identify critical connections between different fields of study. These characteristics make Scopus an essential source for researchers looking for reliable and comprehensive data to support their studies.

Figure 1 illustrates the stages of this research according to the PRISMA method.

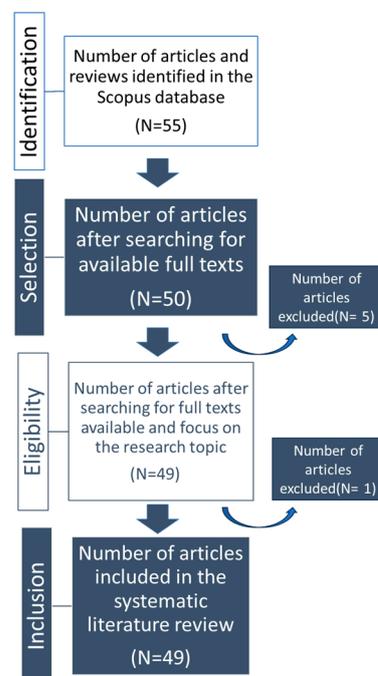


Figure 1. Presents the stages of this research according to the PRISMA method. Source: author (2024).

The result of the database search was 55 articles. After searching for complete articles, 50 articles resulted. After reading the titles and abstracts, 49 articles resulted.

Regarding the exclusion criteria, (1) studies were excluded if the full articles were not freely available, and (2) articles that address philosophical analysis were excluded.

The following inclusion criteria guide the definition of articles used in this systematic literature review: (1) scientific articles without time limits; (2) original research and review articles included, whose theme fully or partially answered the guiding question; (3) articles that contain search terms in the title according to the adopted logical Booleans; (4) and articles that addressed university rankings were included.

The categories defined in Table 1 were recorded in an electronic spreadsheet, which allows filtering and tabulation and facilitates the writing of the article.

3. Results

The results present the literature mapping through the definition of categories after searching and reading articles that address the topic of “university ranking”.

The defined categories are the objective of the articles, countries, type of university ranking studied, indicators used, variables related to university rankings, methods used and proposed future research.

3.1. Objective of the Articles

The objective of the identified articles is organised into nine topics: 1. the impacts and challenges of university rankings; 2. the sustainability of education; 3. the education policies; 4. the public funding and resources; 5. the teachers and academics; 6. the proposed models and approaches; 7. the geographic analyses; 8. the media/dissemination; and 9. the comparisons and relationships between the rankings. The details of each topic are presented below.

This section is dedicated to clarifying the objectives outlined by the various studies analysed on university rankings. Understanding the purposes behind each article is fundamental to identifying the general motivations of academic research in this area, allowing for a comprehensive view of the intentions guiding studies on university rankings. From assessing impacts and challenges to proposing new models and approaches, this analysis aims to highlight the various facets that university rankings represent for higher education institutions in a globalized context.

1. The impacts and challenges of university rankings.

	Description	Author/Year
The impacts and challenges of university rankings	The impacts of pursuing “world-class” status on European and Asian higher education are examined.	[1]
	It discusses how these classification lists influence the transformation of universities around the world, shaping behaviours, quality standards, and institutional identities, as well as questioning the effects that these lists have on higher education and how they reflect and shape the educational policies and practices in a global context.	[5]
	Investigated the challenges faced by Yanbian University, an ethnic minority university in China, in its attempt to become a world-class university.	[2]
	Describing the transition from the original Times Higher Education Supplement World University Rankings, which was developed in partnership with Quacquarelli Symonds (QS), to the Times Higher Education (THE) rankings driven by Thomson Reuters.	[44]
	Suggests using university rankings as a strategic tool for Taiwan to strengthen its position in the higher education scenario, especially in the region known as Greater China. It discusses how Taiwan can employ these rankings to increase its visibility and influence in global higher education.	[6]
	Discusses how global university rankings can be used as indicators in the integration process and as competitive tools in the context of the globalisation of higher education.	[7]

The impacts and challenges of university rankings	Demonstrates how applying organizational theories can offer a deep understanding of the dynamics and changes in universities in response to global rankings. The study focuses on the interaction between university rankings and the strategies and practices adopted by Canadian universities, exploring the effects of these rankings on organizational behaviour and strategic decisions at higher education institutions. [8]
	Addresses the Times Higher Education World University Rankings for 2012–2013, focusing on the criteria for including universities in these rankings. In this context, the authors present the possibilities and challenges related to establishing a research university in Armenia [3]
	The contributions of different indicators to the ranking of higher education institutions in three global university classification systems were investigated. The study uses a regression analysis to examine the contribution of indicators to the ranking of universities in the ARWU, THE, and QS. [45]
	Evaluates the proposition that university rankings, presented as league tables, are a universal approach to showing the performance of higher education institutions (HEIs) simply and multifunctionally. The study analyses 61 national classification systems applied in 36 countries worldwide. [46]
	The impact of global university rankings on the internationalisation of higher education was assessed. The article presents how rankings affect the perception and policies of internationalisation in higher education institutions. [9]
The impacts and challenges of university rankings	Studies internationalisation using the size variable: evaluating the effects of size (precisely the number of full-time equivalent students) and internationalisation (precisely the percentage of international students) on academic rankings. The article aims to understand how these factors influence university rankings, generally and separately, for private and non-private universities. [10]
	Investigates how global university rankings interact with quality and quality assurance in higher education. [11]
	Proposes a study that aims to ensure competitiveness in the global educational services market by using a combination of numerical values of the criteria to compile international rankings. [47]
	Investigates how higher education institutions in China conceptualize the status of a “world-class university” through university rankings. The article focuses on how rankings have become a means of understanding the world-class concept and how they influence decisions and behaviours in the Chinese higher education sector. [4]
	A survey carried out at universities in the five central European countries and the Visegrad Group countries, using the 2022 Times Higher Education (THE) world university rankings as a basis, offers an analysis of how participation in the Impact Factor quartile (Journal Impact Factor—JIF) of research articles varies between European universities in medical sciences. [48]
	Presents a reflection on the limitations and biases of global university rankings. The author argues that these rankings are having a corrosive effect on higher education systems, institutions, and personnel, encouraging policy reforms at the governmental level and re-allocating resources at the institutional level. These changes can improve rankings but do not necessarily increase the quality of research and teaching. [12]

Item 2 details research focusing on sustainability in education, with two articles on this topic.

2. The sustainability of education.

	Description	Author/Year
The sustainability of education	Evaluates the structure of global university sustainability rankings, specifically the UI Green Metric and the Times Higher Education World University Rankings (THE-WUR), based on the framework of the Berlin Principles. [13]	
	Using a social network analysis approach, they investigate educational policies related to creating world-class universities in China for higher education sustainability. The study explores the communication path and the spatial distribution of information from the social network. [14]	

The next item will focus on education policies, presenting four researchers who deal with the topic.

3. The education policies.

	Description	Author/Year
The education policies	With a focus on understanding how university rankings shape policy issues and influence decisions in higher education, it assesses the impact of global university rankings on higher education policies in Europe.	[15]
	Studies how university rankings are used in the development of national higher education systems, with particular attention to the influence that these rankings have on higher education policies. The study proposes a critical reflection on how global university rankings help shape these policies and suggests a more detailed analysis of the specific interactions between the creators of the rankings and the contexts of national educational policies.	[15]
	Seeks to provide a basis and starting point for future initiatives and proposals that can guide policymakers in improving higher education institutions. The study investigates the requirements, initiatives, and strategic approaches suitable for creating world-class universities (WCUs) in Yemen.	[17]
	From the perspective of exploring the role of feelings and emotions (affects) in the context of global university rankings, especially concerning the influence of commercial rankings on global higher education policies, it focuses on understanding how these rankings construct and use “emoscapes” (affective landscapes) to shape educational policies and practices.	[18]

The next item seeks to work on relating university rankings with public funding and resources.

4. The public funding and resources.

	Description	Author/Year
The public funding and resources	Assesses whether investment in world-class universities is an efficient use of public resources; that is, they seek to understand whether world-class universities create benefits beyond the specific institutions that receive investments, contributing to improvements in the education system.	[20]
	Whether governments base their performance-based financing (PBF) programs on the metrics used in global university rankings is analysed. The study explicitly evaluates PBF programs in four countries—Austria, Denmark, Finland, and Sweden—intending to identify whether these programs are guided by the indicators used in global university rankings.	[21]

In item 5, we discuss the focus on teachers and academics, who are fundamental actors in this scenario of university rankings.

5. The teachers and academics.

	Description	Author/Year
The teachers and academics	Investigates how faculty members in China interpret the definitions and implications of pursuing world-class universities (WCUs) and dealing with the multiple dimensions of their academic lives in global and national contexts and locations.	[22]
	The study focuses on analysing the impact of “semantic harmonisation” (standardisation of meanings and data collection methods) on these data concepts and how this harmonisation influences ranking results, using as for example the Times Higher Education World University Ranking.	[23]

The teachers and academics	Explores the integrity dilemmas Russian academics face in creating world-class universities. It investigates how the legacies of the Soviet administration impact issues of integrity in Russian higher education, especially in the context of government-driven excellence projects such as the 5-100-2020 program.	[24]
	Investigates students' experiences at high-ranking American universities, focusing on the difference between public and private institutions. The article assesses whether a university's position in global rankings can be a potential indicator of student experiences, considering aspects such as institution wealth, acceptance rates, student demographics, class size, and graduate income.	[25]
	Examine the impact of the Times Higher Education (THE) Japanese University Rankings on university admissions results from 2017 to 2019. The study investigates how including Japanese universities in a national ranking can affect the number of applicants and acceptance rates and whether a more favourable ranking is associated with increased tuition rates.	[26]

Item 6 covers models and approaches used to address the topic of university rankings.

6. The proposed models and approaches.

	Description	Author/Year
The proposed models and approaches	Based on a conceptual framework of five strategies by Fred R. David and the findings obtained through in-depth interviews, the Delphi technique was carried out with a panel of 17 experts to discover an appropriate model to elevate Thai universities at the level of world-class universities.	[27]
	Technical universities' (TUs') performance was compared with other universities in the global ranking, specifically in the 2017 THE (Times Higher Education) Ranking. The study identifies 137 TUs and statistically analyses their scores, highlighting the existence of clusters of TUs that show high performance in the industry income category and, in many cases, low performance in research and teaching.	[28]
	A new approach to data analysis methods in the form of visualisation is defined using the Temporal Topic Model (TTM) method. This approach is aimed at assisting the management of private universities. The focus is to generate time-based visualisations and the monthly Temporal Topic Model to visually change news topics related to rankings, allowing management to decide on marketing strategies and policies concerning public opinion.	[29]
	An article assessing Asian university rankings and the position of leading Indian higher education institutions in the rankings explores the possibilities of improving ranking methodologies using the I-distance method and identifying possible weaknesses in the subjectively chosen weighting factors of ranking methodologies of THE (Times Higher Education) and QS (Quacquarelli Symonds).	[30]
	Using data from the Times Higher Education World University Ranking 2013–2014, an investigation of the problem of multicollinearity and redundancy of indicators in the ranking systems of world universities is carried out. The article analyses how the different indicators used in the rankings correlate and contribute to universities' total scores and rankings.	[31]
	Proposes an analysis of the U-Multirank university ranking, focusing on how U-Multirank operates and how it differs from traditional university rankings, especially in its multidimensional and visual approach.	[49]

The next item will focus on geographic analyses, presenting five studies that address global hegemonies, geographic inequalities, regional clusters, and other topics.

7. The geographic analyses

	Description	Author/Year
The geographic analyses	Analyses the nature of global hegemonies in higher education, particularly in the context of the domination of the Western paradigm and how this is perceived and reacted to by non-Western countries.	[50]
	Contributes to emerging debates about global geographic inequalities in higher education by critically analysing world university rankings.	[51]
	Analyses how university rankings, especially in parts of Russia, show the influence of regional scientific and innovative clusters in improving the competitive positions of universities. The article discusses how these clusters can be the primary advancement mechanism for improving the position of Russian universities in world rankings.	[52]
	Verifies how some research-intensive Chinese universities respond to global and national influences in creating world-class universities. The study considers two global forces (international academic discussions and global university rankings) and one national force (China's Double-First-Class Project).	[53]
	Examines how world-class universities in Hong Kong, Macau, and Guangdong, within China's Greater Bay Area (GBA), have worked to overcome regional incongruities and asymmetries. The study focuses on the internationalisation of research, education, and services in these locations, exploring the impact of international dynamics on these universities' efforts to create a more coherent agenda regarding regional international partnerships.	[54]

In item 8, the focus on media and dissemination is discussed, bringing different reflections from previous years on university rankings.

8. The media and dissemination

	Description	Author/Year
The media and dissemination	Investigates the role of branding in higher education and how it contributes to the identity, recognition, and success of higher education institutions (HEIs). The study focuses on how branding methodology is incorporated in some Indian higher education institutions, highlighting the importance of branding for the reputation of HEIs and its influence on marketing and enrolment results.	[32]
	Analyses how visual images on global university rankings (GURs) websites construct a social image of higher education in Asia. The study focuses on 135 visual media (photographs) publicly available on the websites of Times Higher Education (THE) and Quacquarelli Symonds (QS), seeking to discover the 'Asian visual gaze' of these rankers and broaden the understanding of the importance of Asian universities in the global discourse.	[33]
	Evaluates the relationship between the dissemination of university rankings and efficiency in higher education through the scientific literature, evidence and tensions surrounding the efficiency levels of universities, and its position in university rankings, establishing a causal relationship between efficiency, reputation, and market perception.	[34]
	Looks at how university rankings and the celebration of "academic stars" (such as Nobel Prize winners) influence policies and practices at universities. The study analyses how elite higher education institutions and significant ranking systems (such as ARWU, QS, and Times Higher Education) use awards and academic celebrities to reinforce their brands and how this is reflected in management and decision-making within institutions.	[35]

Finally, item 9 includes comparisons and relationships made with university rankings.

9. The comparisons and relationships between the university rankings

	Description	Author/Year
The comparisons and relationships between the university rankings	The characteristics of global university rankings are compared with the Olympic Games to highlight their competitive and high-stakes nature. The article discusses how universities should approach these rankings cautiously, considering their limitations as indicators of the educational system's success and their impact on the global academic market.	[55]
	Intra- and inter-ranking relationships, from a reputation perspective, between two of the most influential global university rankings, the Academic Ranking of World Universities (ARWU) and the Times Higher Education World University Rankings (THE), were analysed by	[56]
	presenting an investigation into the causal relationships between performance indicators that determine a university's ranking. The focus is on understanding how different indicators used in the Times Higher Education (THE) World University Rankings interact.	[57]
	The study uses a descriptive–correlational method to examine the internal correlation between the ISC WUR criteria, clarifying the representation of the university's total score from each functional criterion in the ISC WUR system. It then assesses the extent to which the ISC WUR results diverge or converge overall and examines the similarities and differences between the ISC WUR criteria and indicators and the results from the Leiden Nature Index, Times Higher Education (THE), and Quacquarelli Symonds (QS).	[58]

In summary, this topic identifies the main objectives of each study analysed, showing that the theme “impacts and challenges of university rankings” stands out in guiding the research of 17 articles, which is 35% of the articles mapped in the literature review.

3.2. Regions and Nations Involved in the Study of Global University Rankings

This section looks at the geographical distribution of research on university rankings, emphasizing the importance of understanding how different regions and countries are represented in the literature. Regional analysis is crucial for recognizing global and specific patterns in how rankings influence educational policies and practices, reflecting on cultural diversity and the different educational approaches adopted around the world.

This literature review identified that 20% of studies addressed university rankings from a global perspective [5,9,11,12,18,20,28,31,34,35,44–47,49,51,55–58].

The literature presents studies in specific regions. For example, Deem, Mok, and Lucas (2008) [1] developed a study in the context of Europe and Asia. Another study focuses on the representation of higher education in Asia [33], and Erkkilä (2014) [15] conducted a study focusing on Europe.

Figure 2 illustrates the number of developed articles focusing on each country. This analysis shows a higher incidence in China, with six articles.

The articles that focused research specifically on a single country were Russia [7,24,52], China [2,4,14,22,53,54], Canada [8], India [30,32], Japan [26], Thailand [27], Indonesia [29], the United States [25], Yemen [17], Taiwan [6], and Armenia [3]. Some studies focus on two or more specific countries: Denmark and India [19]; Belgium and Italy [23]; Austria, Denmark, Finland, and Sweden [21]; Japan, China, Hong Kong, Singapore, Taiwan, and South Korea [50]; the United Kingdom, Switzerland, Sweden, Germany, and Belgium; and Hungary, Poland, the Czech Republic, and Slovakia [48].

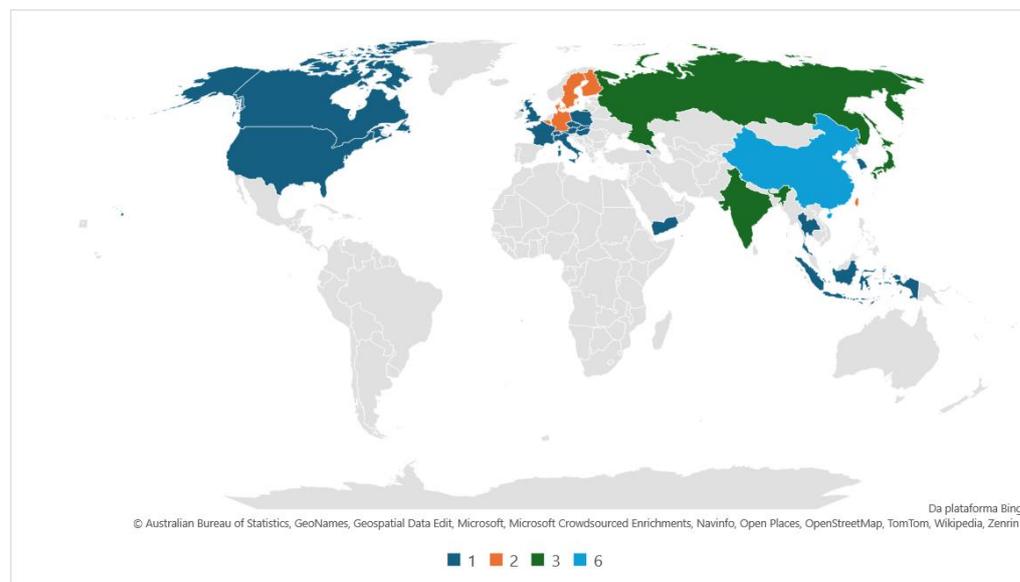


Figure 2. Number of developed articles in each country. Source: author (2024).

It can be summarized that South America and Africa need to be studied. China stands out with six studies of the country, and 41% focus on a global perspective.

3.3. University Rankings Identified in the Literature

The focus of this section is to catalogue and discuss the different university rankings covered in the articles reviewed. Understanding the variety of existing rankings and their specific evaluation criteria is essential in order to analyse both the impact of these rankings on universities and the criticisms that arise in relation to the methodologies applied. This discussion provides a basis for critical reflections on the legitimacy and influence of rankings in higher education.

Table 2 presents the university rankings studied in the articles mapped in the literature. It is worth noting that 14 articles (29%) do not focus on a specific university ranking, but address global university rankings in general [8,12,15,17,20,34,54], demonstrating the general concept of world-class universities and how this is pursued in Europe and Asia [1]; explaining the Russian 5-100-2020 Excellence Scheme, a Russian government project aimed at improving the global performance of Russian universities in world rankings [24]; exploring faculty perceptions of the concept of world-class universities in general [22]; focusing on creating world-class universities in China [14]; analysing national classification systems [46]; pointing out the use of university rankings as a strategic tool [6]; and focusing on Project 211, which is a Chinese government initiative to raise the standard of selected universities to a world-class level [2].

It is noteworthy that 14 (29%) articles present studies involving these three university rankings: Academic Ranking of World Universities (ARWU), Times Higher Education World University Rankings (THE), and Quacquarelli Symonds (QS) World University Rankings. These research studies focused on comparisons, student experiences, the use of awards and academic celebrities to reinforce their positions in rankings, the role of branding in higher education, the role of university rankings as strategic tools, and the impact of the internationalisation of higher education.

Table 2. University rankings.

University Rankings	Authors
The article does not focus on a specific university ranking.	[1,2,8,12,14,15,17,20,22,24,34,46,50,54]
Academic Ranking of World Universities (ARWU) THE-QS.	[5,51]
U-Multirank.	[49]
Times Higher Education Japan University Rankings (THEJ).	[26]
Times Higher Education (THE).	[3,23,31,48,57]
Academic Ranking of World Universities (ARWU) and Times Higher Education World University Rankings (THE).	[56]
Times Higher Education (THE) and QS World University Rankings	[18,27,28,33,44,47]
Academic Ranking of World Universities (ARWU), Times Higher Education World University Rankings (THE), and Quacquarelli Symonds (QS) World University Rankings.	[6,7,9,10,21,25,32,35,45,52,53,55]
QS, THE (Times Higher Education), ARWU (Academic Ranking of World Universities), and US News & World Report's Best Global Universities Rankings.	[4]
Academic Ranking of World Universities (ARWU), Times Higher Education World University Ranking, QS World University Ranking, and U-Multirank.	[11]
UI Green Metric World University Ranking (WUR) and Times Higher Education World University Rankings (THE-WUR).	[13]
ISC World University Ranking (ISC WUR) Leiden Ranking Nature Index, Times Higher Education (THE), and Quacquarelli Symonds (QS).	[58]
Webometrics Ranking of World University (WRWU) and Times Higher Education Supplement (THES), and Quacquarelli Symonds World University Rankings (QS WUR).	[29]
Scimago Institutions Rankings (SIR), Times Higher Education (THE), and Quacquarelli Symonds (QS).	[30]

Source: author (2024).

It is observed that six (12%) articles evaluated the Times Higher Education (THE) and Quacquarelli Symonds Ltd. (QS) rankings, and five (10%) articles focused only on Times Higher Education (THE); however, THE or its variations (Times Higher Education Supplement (THES) Times Higher Education Japan University Rankings (THEJ)) are studied in 14 (29%) different articles.

3.4. Relationships between University Rankings

This section explores the relationships identified between university rankings and various factors such as educational policies, internationalization, perception of quality, and institutional strategies. Analysing these interrelationships is vital to understanding how rankings shape and are shaped by the educational environment, influencing strategic decisions by higher education institutions. Such an understanding is fundamental to assessing the role of rankings in shaping the global educational landscape.

As illustrated in Table 3, the analysis of the interactions established by researchers about university rankings is presented. By 'relations', we understand the aspects investigated in conjunction with university rankings, transcending the mere analysis of the rankings in isolation.

Table 3. Relationships between university rankings.

Relationships	Authors
Strategies adopted by higher education institutions.	[1]
Strategic management and organisational change in universities/practices, processes, and decision-making.	[8]
Relationship between the concept of WCUs and higher education strategies and policies.	[17]
Relationship between universities' efforts to become world-class institutions and the influences of global university rankings and national policies.	[53]
Educational policy and reform.	[15]
Policy processes and countries' search for positioning in the global knowledge economy. Specific interaction between ranking creators and the contexts of national educational policies.	[19]
Global geopolitics and geoeconomics of higher education.	[51]
Interaction between soft power, higher education policies, and the efforts of non-Western countries to achieve world-class status in a globalised environment.	[50]
Visual and multidimensional approaches can influence perceptions and practices in higher education.	[49]
"Emoscapes" as affective indicators/affective landscapes to shape global higher education policy.	[18]
Internationalisation of higher education.	[9]
Internationalisation of higher education and the development of world-class universities.	[54]
Relates university rankings to the globalization of higher education and the competitiveness of universities in the global educational market.	[7]
Relates international and global dimensions rather than national or local dimensions. Faculty perceptions of the concept of world-class universities.	[22]
Relates the university ranking to the size of the university and the degree of internationalisation.	[10]
Relates sustainability by examining and comparing their frameworks and assessment criteria against the Berlin Principles.	[13]
Educational policies for the creation of world-class universities with the sustainability of a higher education.	[14]
"5-100-2020" excellence scheme.	[24]
Quality concepts and policies and quality assurance.	[11]
Relationship between university rankings and the quality assessment of higher education institutions. It also discusses how different stakeholders perceive quality.	[46]
Relationship between the dissemination of university rankings and efficiency in higher education, considering aspects such as quality, reputation, and market perception.	[34]
The intra- and inter-ranking relationships of the two university rankings from the point of view of reputation and the branding of higher education institutions.	[56]
Reputation and branding of higher education institutions.	[32]
Relationship between university rankings of THE and perceptions of quality and reputation of universities on the global stage.	[44]
Semantic interpretation of data ("academic staff" and "students").	[44]
Visual representations on university ranking websites and the construction of a social imagination about higher education.	[33]
How different performance indicators (research quality, teaching scores, citations, industry income and international outlook) influence each other and ultimately affect the university's overall ranking.	[57]
Internal correlation between the ISC WUR criteria and the correlation of the ISC WUR indicators with those of other classification systems (Leiden, Nature Index, THE, and QS).	[58]

Table 3. Cont.

Relationships	Authors
It analyses how different indicators influence the positions of universities in the rankings and how they compare.	[45]
How positioning in rankings influences the perceptions and actions of higher education institutions.	[4]
Relationship between the position in the university ranking and the global leadership of universities in the educational services market.	[47]
Position of universities in the ranking of THE and scientific impact.	[48]
Relationship between obtaining the Nobel Prize, celebritisation, and media coverage in higher education and how these factors impact university rankings and educational policies.	[35]
Relationship between global university rankings and performance-based financing models adopted by governments.	[21]
Relationship between policies for world-class universities and public resources in the higher education system, considering the impact of WCUPs.	[20]
Fundamental guidelines could be considered qualitative indicators to boost universities to world-class level.	[27]
Relationship between the specific characteristics of technical universities and their performance in global rankings, with a special focus on industry income as an indicator.	[28]
Relationship between university rankings and the preferences of students at private universities.	[29]
Student experience at American universities, both public and private.	[25]
Relates university rankings to university admissions results, such as the number of applicants and acceptance rates.	[26]
Relationship between university rankings and the perception of candidates, the competitiveness of universities, the methodology and bias of rankings, subjectivity in evaluations, and the impact of rankings on the quality of education.	[52]
Relationship between university rankings and aspects of educational and scientific development.	[3]
Relationship between university rankings and the influence of these rankings on educational policies, higher education reform, the challenges faced by ethnic minority higher education institutions, and the need to balance cultural identity and integration into wider society.	[2]
Relations between university rankings and other factors, such as global competition for academic prestige, inequality between countries, and rankings' influence on political decision-making.	[55]
Relates university rankings with their methodologies and indicators and seeks to identify the potential weaknesses and contributions of the indicators used in the THE and QS rankings.	[30]
University rankings can be affected by overlapping and non-contributory indicators, changing the meaning of the overall score.	[31]
The critical relationship between university rankings and other aspects of higher education highlights how rankings may be distorting the priorities of educational institutions and negatively affecting quality and ethics in education.	[12]
Explores aspects such as educational policy, regionalisation, national interests, cultural and academic sovereignty, and the formation of regional subjectivity.	[6]
Studies the implications and relationships of international university rankings with aspects of higher education governance in a globalised context.	[5]

Source: author (2024).

Among the aspects that stand out in Table 3, the strategic issue that studies related to university rankings help to make stand out [1,8,17,53] is a concern relating to educational policies [15,19,50]. The relationship made regarding internationalization is observed [7,9,10,22,54]; the quality aspect is highlighted [11,46]; reputation is also the focus of studies [32,34,44,56]; the position aspect of the ranking is studied by researchers [4,45,47,48]; an analysis of students' perceptions and experiences is highlighted [25,26,29,52]; and other research addresses the relationship between university rankings [2,3,30,55].

3.5. Methodologies Used in Studies on University Rankings

This section highlights the methodological approaches used in studies on university rankings, emphasizing the diversity of methods used to investigate this phenomenon. From bibliometric analyses to interviews and comparative analyses, understanding the methodologies adopted is crucial to assessing the robustness and variety of research in the area. This methodological reflection makes it possible to identify gaps in the existing research and suggests directions for future studies.

It is evident that eight articles carried out a literature analysis, eight articles chose the interview method, seven articles focused on statistical analysis, six articles focused on carrying out a comparative analysis, five articles demonstrated analysis of social networks, news, promotional materials, and visual media, three articles studied educational policies, three articles carried out a bibliometric analysis, two articles addressed a critical analysis, and six articles addressed different terms (strategic plans, I-Distance method, Notears algorithm, data mining, evolution of rankings of THE, and former student experience)

Below are tables detailing the methodologies and authors of the articles studied.

3.5.1. Literature Review

Table 4 details the methodology used in the articles that addressed the literature review.

Table 4. Literature review methodology.

Method	Authors
An analytical and critical approach combines a review of the existing literature with an analysis of concepts such as “soft power” and hegemony in higher education.	[50]
An analytical and critical approach reviews the existing literature on university rankings and internationalisation and analyses indicators and categories used by the rankings.	[9]
The approach reviews the existing literature on university rankings, their implications, and the author’s critical reflection on the topic.	[12]
An analytical approach reviews the existing literature on university rankings and their implications, together with data from surveys carried out with students and analyses of specific rankings-related indicators.	[52]
The approach reviews and analyses the existing literature on university rankings and their impact on education and science, specifically focusing on Armenia.	[3]
An analytical approach examines the existing literature on university rankings, educational policies, and the context of higher education in Taiwan and Greater China.	[6]
An analytical methodology and literature review examines various university rankings and discusses their implications in the context of transnational governance of higher education.	[5]
An analytical and critical approach analyses various documentary sources, such as the academic literature, glossaries, international studies, institutional strategies, and other documents, focusing on the official websites of international ranking systems, individual institutions of higher education, and media advertisements.	[11]

Source: author (2024).

This survey in Table 4 illustrates the diversity of approaches with concepts such as “soft power”, internationalization, and the implications of rankings in global higher education. The highlighted studies contribute to understanding the complex dynamics involving university rankings.

3.5.2. Interviews

Table 5 details the methodology used in the articles that addressed the application of interviews.

Table 5. Interview methodology.

Method	Authors
A qualitative approach is based on semi-structured interviews with 42 scientists and administrators from two leading research universities in Moscow.	[24]
The approach is a qualitative analysis of data collected through semi-structured interviews.	[4]
A qualitative multi-method approach includes semi-structured interviews with university leaders, document analyses, and website analyses.	[8]
A qualitative approach is used to conduct semi-structured interviews with 24 faculty members at Peking and Tsinghua Universities, covering a variety of disciplinary fields.	[22]
Document analyses and in-depth interviews with key informants from eight universities in and around Bangkok followed by the Delphi technique with a panel of 17 experts to develop the proposed model.	[27]
Multi-year field studies, document analyses, and interviews conducted in India and Denmark, as well as observations in the Times Higher Education Rankings.	[19]
A qualitative methodology involves in-depth interviews with experts in higher education in Yemen. Five experts relevant to the study were selected.	[17]
Case studies, document analyses including academic publications, Project 211 reports, and interviews with senior faculty, senior administrators, and community leaders.	[2]

Source: author (2024).

The semi-structured and in-depth interviews with scientists, administrators, and experts in different geographies, from Moscow to Yemen, allow a detailed understanding of the perceptions and strategies that higher education institutions adopt in the face of the challenges imposed by the rankings. This method, enriched by a documentary analysis and direct observations, captures the complexity of educational dynamics, offering valuable insights for future research to deepen the understanding of the impact of university rankings globally.

3.5.3. Statistical Analyses

Table 6 details the methodology used in the articles that addressed statistical analyses.

Table 6. Statistical analyses.

Method	Authors
Ordinal regressions to analyse data from the ARWU and THE rankings between 2010 and 2018.	[56]
A multiple regression analysis predicts dependent variables such as the total number of applicants, acceptance rate, and enrolment rate in 2018 and 2019, based on rankings and other institutional variables in previous years.	[26]
Linear regression models analyse 2017 and 2018 THE data for 258 public and private national universities in Japan.	[10]
A correlation analysis includes Spearman correlation tests and non-parametric partial correlation to analyse data from 355 universities ranked in the five ranking systems in 2020.	[58]
A statistical analysis includes a descriptive analysis, correlation test, and cluster analysis of data from 137 technical universities listed in the 2017 THE ranking.	[28]
Statistical techniques, including correlation analysis and multiple regression, to examine multicollinearity and redundancy of indicators in the THEWUR ranking.	[31]
Correlation and regression analyses are used to investigate the influence of various indicators on university rankings.	[45]

Source: author (2024).

This survey of statistical analysis methodologies demonstrates the rigorous and varied application of quantitative techniques in investigating the impact of university rankings.

From ordinal regressions to correlation and cluster analyses, these methods allow for in-depth exploration of the relationships between rankings and key institutional variables, such as the number of applicants and enrolment rates.

3.5.4. Comparative Analyses

Table 7 details the methodology used in the articles that addressed comparative analyses.

Table 7. Comparative analyses.

Method	Authors
The approach is a critical and comparative analysis of policies and practices adopted by universities in Europe and Asia.	[1]
Critical and comparative analysis of the rankings, along with a geographic approach to examining the data and interpreting the results.	[51]
Comparative content analysis of the two rankings, evaluating them based on the Berlin Principles framework for university rankings.	[13]
Comparative analyses of THE-WUR data and results are used before and after semantic data harmonisation at selected universities in Belgium and Italy.	[23]
A comparative analysis of performance-based financing programs is used in four countries, evaluating the orientation of these programs relative to the indicators used in global rankings.	[21]
A qualitative and comparative analysis approach uses the metaphor of the Olympic Games to explore and discuss the characteristics, implications, and limitations of global university rankings.	[55]

Source: author (2024).

This survey of comparative analysis methodologies highlights the importance and effectiveness of this approach for understanding the policies, practices and impacts of university rankings in varied geographic contexts. These critical and comparative analyses evaluate education policies in Europe and Asia and interpret THE-WUR data, offering valuable perspectives on the differences and similarities in higher education systems. The approach reveals the complexity of rankings and their reception by universities and suggests paths for future research that promote equity and excellence in global education.

3.5.5. Communication and Visual Media

Table 8 details the methodology used in the articles that addressed communication and visual media resources.

Table 8. Communication and visual media.

Method	Authors
Critical policy analysis focuses on affect theory, analysing texts and public promotional materials from the THE and QS commercial rankings.	[18]
Critical analysis of 135 visual media (photographs) publicly available on THE and QS websites.	[33]
A social network analysis (Social Networking Analysis—SNA) investigates social relationships and actor behaviour. It explores implicit behaviour patterns and relationships through data mining.	[14]
Social network and multimedia critical discourse analysis examines the relationship between Nobel laureates, top universities, and university rankings.	[35]
University news data collection in Indonesia, with word processing and analysis using the TTM model. The study focuses on visualising temporal topics related to university ranking indicators.	[29]

Source: author (2024).

This methodological survey of communication and visual media highlights the importance of critical analysis and affect theory in interpreting texts, promotional materials, and visual media related to university rankings. Applying social network analysis and data mining techniques offers unique insights into social relationships and the impact

of rankings on university reputations. These innovative approaches provide a deeper understanding of how rankings are perceived and used by higher education institutions, opening new perspectives for future research in global education.

3.5.6. Educational Policies

Table 9 details the methodology used in the articles that addressed educational policies.

Table 9. Educational policies.

Method	Authors
The analytical and critical approach focuses on policy analysis and studying the effects of rankings on European educational policies.	[15]
Document analysis of educational and institutional policies, complemented with the academic literature and insights from researchers and policymakers involved in developing the GBA (Greater Bay Area).	[54]
An analysis of educational policies and rankings includes documentary analysis and considerations about the objectives and implementations of WCUPs in different countries.	[20]

Source: author (2024).

Through critical documentary analysis and consideration of insights from researchers and policymakers, these approaches offer rich insight into how rankings influence educational policies in different geographic and institutional contexts. This detailed understanding highlights the importance of an ongoing dialogue between theory and practice in formulating educational policies that adequately respond to the challenges posed by university rankings.

3.5.7. Bibliometric Analyses

Table 10 details the methodology used in the articles that carried out bibliometric analyses.

Table 10. Bibliometric analyses.

Method	Authors
A bibliometric analysis of scientific publications from selected European universities analyses the distribution of publications in different quartiles of the JIF (Journal Impact Factor) and the influence of the position of affiliated and non-affiliated authors in the CNCI (Category Normalized Citation Impact).	[48]
A structured intervention process called Knowledge Development Process—Constructivist (Proknow-C) is used to conduct a bibliometric and systemic analysis of the relevant literature, including a bibliographic portfolio of 77 items from 1995 to 2016.	[34]
A bibliometric and systemic analysis of 61 national higher education ranking systems is used based on updated and expanded data from IREG's Observatory on Academic Ranking and Excellence.	[46]

Source: author (2024).

This methodological survey of bibliometric analysis highlights the careful application of this approach to examine scientific production and the academic impact of universities and higher education ranking systems. These studies offer insights into trends and academic excellence in the global context.

3.5.8. Critical Analyses

Table 11 details the methodology used in the articles that carried out critical analyses.

Table 11. Critical analyses.

Method	Authors
Based on Science and Technology Studies (STS) theory, a critical analytical approach examines how U-Multirank operates as a digital educational platform.	[49]
A critical analysis approach examines the relationship between reputation, branding, and rankings in university rankings, emphasising Indian higher education institutions.	[32]

Source: author (2024).

This survey demonstrates the application of detailed and theoretical approaches. By examining the intersection between reputation, branding, and rankings, especially in specific contexts such as Indian higher education institutions, these studies provide reflections on the impact of these rankings on the perception and management of universities.

3.5.9. Diverse Perspectives and Data Analyses

Table 12 details the methodology used in the articles that carried out analyses from different perspectives.

Table 12 illustrates the richness and innovation in investigating university rankings and their implications. From a document analysis of university strategies to causal structure modelling and data mining, these methodologies offer answers about how higher education institutions respond to global and local pressures. This methodological variety not only deepens our understanding of the impact of rankings but also motivates research on university governance and strategy in the global education scenario.

Table 12. Diverse perspectives and data analyses.

Method	Authors
An in-depth document analysis of 41 Chinese research-intensive universities' strategic plans examines how these universities plan to respond to global and national forces.	[53]
A quantitative methodology uses data from university rankings to analyse student experiences at highly-ranked universities in the United States.	[25]
An analysis of Asian university rankings uses the I-distance method, which integrates variables with different units of measurement into a composite indicator.	[30]
Exploratory data analysis based on causal structure modelling uses the NOTEARS algorithm and a constructed Bayesian network model to measure indicators' conditional probability distribution and relationships.	[57]
A data mining approach includes clustering (k-means method) and classification analysis (decision tree method) to analyse universities based on the QS and THE rankings criteria.	[47]
A descriptive analysis of the evolution of THE rankings. The methodology used, and the criticism received.	[44]
A comprehensive analysis of ranking criteria that influence university policies and socioeconomic implications. It discusses the role of rankings in formulating strategies for higher education institutions in the context of global education trends.	[7]

Source: author (2024).

3.6. Future Research Presented in the Mapped Articles

This section is dedicated to mapping out the proposals for future research identified in the articles analysed. Including suggestions for future research is considered good academic practice, as it helps to outline ways to advance knowledge in the field of study. It offers readers insights into gaps in the existing literature, unresolved questions, and possible new directions for investigation.

Scientific articles often reveal gaps in existing knowledge, and future research possibilities must be indicated, proposing new approaches to be achieved in the line of research

to improve knowledge on a given subject, in addition to helping to direct attention to less-explored areas. It encourages the continuity of scientific advancement [41,42].

Suggestions for future research can inspire other researchers to explore innovative ideas or apply different methods, thus enriching the field of study. Authors can also encourage collaboration between research groups, promoting a more interdisciplinary approach.

It was identified, however, that 59% of the articles (29 articles) do not present an explicit proposal for future research in the articles [1–3,6–9,11,12,15,17,19–21,26,27,30,31,34,35,44,46,49–52,54,55].

Next, future research proposals cited in the articles are presented in Table 13.

Table 13. Future research proposals.

Future Research Proposals	Authors
1—The article suggests the need for more research into the effects of university ranking lists on higher education governance, particularly in how they influence educational policies and institutional practices in different national and cultural contexts.	[5]
2—International ranking systems must be carefully examined, and their results must be interpreted in a considered manner, recognising their limitations and the potential impact they may have on perceptions and decisions related to HEIs.	[45]
3—Analyse whether the location of academic training affects faculty interpretations of policies related to WCU and their daily work lives. Explore varying responses from colleges of different rankings, disciplines, and institutional types/selectivities to understand better how globalisation influences college academic lives and how these changes influence cultural academics in China.	[22]
4—There is a need for more studies to facilitate the collection of complementary indicators such as patents, technology licensing, consultancy services and advisory projects, and the launch of technology-oriented start-ups and spinoffs, regardless of the “rules of the game” already existing in global rankings. Using qualitative comparative analysis (QCA) (Ragin, 1997; Roig-Tierno, Gonzalez-Cruz and Llopis-Martinez, 2017) as a complement to traditional correlation methods is also advisable to be used in future research. Furthermore, it proposes to investigate how universities within each group define themselves better to understand performance and mission definition similarities.	[28]
5—Build a ranking based on bibliometric data that are free from reputational bias and an “old reputation”. For example, specific corporate and organizational strategies, such as mergers and secondary affiliations of highly cited researchers, can improve positions in global rankings.	[56]
6—The article suggests the need to research the relationship between university rankings and student experiences, including the impact of factors such as race and disability on the earnings (remuneration) of graduates from different universities.	[25]
7—It is proposed that additional empirical analyses be carried out for private and non-private universities in Japan, as well as in the USA, Europe, Asia, and Latin America.	[10]
8—Establish relationships between the identified leadership factors (Citations per Faculty (QS), international students (QS), international faculty (QS), citations (THE), international outlook (THE), teaching (THE), employer reputation (QS), research (THE), and industry income (THE)) which can be the basis for building cognitive maps to increase competitiveness.	[47]
9—The article suggests limitations in considering only international academic discussions and global university rankings as global forces, indicating the need for more investigations into regional and local influences on research-intensive universities. Furthermore, it recommends using other empirical data, such as interviews, to complement the analysis of strategic plans.	[53]
10—Future research should explore how specific ranking cutoffs are perceived at universities worldwide and whether the top 100 has proliferated as a global standard of excellence. It also suggests investigating how Chinese universities are perceived globally and how they react to different rankings.	[4]

Table 13. Cont.

Future Research Proposals	Authors
11—GUR websites and their visual images are part of a broader geopolitics of knowledge, which has an economic impact when marketing specific HE destinations. Examine other regions, going beyond simple content analysis, and investigate whether HEIs around the world are visually presented with specific disciplines (e.g., business or engineering) or administrative units (e.g., libraries, student services) to signify its modern or “world-class” nature. The study recommends moving beyond the methodological critiques and impact studies of GURs in the existing literature to critically examine the underlying geopolitics of knowledge that informs the spatialization and visualization of HE.	[33]
12—There is a need for more critical research focused on the role of affect in the mobility of educational policies, especially in the current context where higher education policy is strongly influenced by data-based logic and ranking commercial companies.	[18]
13—Investigate the motivations for HEIs to participate in sustainability rankings, assessing whether there are trends for HEIs to resemble each other in their sustainability policies increasingly. Investigate sustainability programs and practices due to assessments, the benefits, and disadvantages of participating in more than one ranking that aims to measure the same theme such as sustainability performance, the implications, and the lessons learned for sustainability practices at HEIs.	[33]
14—Provide a complete view of the challenges generated by the Soviet legacy to better inform future actions by policymakers and higher education professionals in Russia and other jurisdictions with traditions of authoritarian control, self-serving bias, self-censorship, and fear of institutional retribution.	[24]
15—Analyse the relationship between authors’ position (affiliated and non-affiliated) and the scientific impact in different academic areas and geographic contexts. Consider other factors, such as the Gross Domestic Product and spending on research and development in the country of affiliation of the authors.	[48]
16—Evaluate how MOOCs and other forms of online education can enhance the internationalization of higher education in China in the future. Investigate the challenges and opportunities for creating world-class higher education institutions in the post-pandemic era, considering the changes driven by online education’s rapid adoption and development during the pandemic. Future research could explore the challenges and opportunities for universities in different regions of China, given the uneven distribution of world-class higher education institutions.	[14]
17—Research on the influence of branding and reputation on university rankings, particularly in cultural and geographic contexts other than India.	[32]
18—Expand the scope and improve the methodology to understand the relationship between research scores and university performance. Furthermore, it proposes the study of universities’ internal strategies to improve their research capabilities and analyse data from multiple ranking agencies to provide a more comprehensive view of university performance.	[57]
19—Understand and improve possible deficiencies in ranking systems and reinforce their strengths. It also recommends a comparative analysis with other university ranking systems, such as Shanghai, for a more comprehensive perspective.	[58]
20—Studies must be carried out to quantify the total impact of semantic harmonization on ranking results. It also highlights the need for deeper semantic harmonization to ensure high-quality data are comparable fairly and meaningfully across institutions.	[23]

Source: author (2024).

In the temporal analysis of the themes proposed for future research in the context of university rankings, it is identified that, in 2009, Lindblad and Lindblad [5] suggested the need to investigate the effects of university ranking lists on the governance of higher education. Later, only in 2017, Hou and Jacob [59] recommended a more judicious approach to interpreting university rankings. From this point onwards, there is thematic diversification in the suggestions for future research, with each author proposing different directions, except for the theme ‘use of empirical data’, which was recommended in 2018, 2019, and 2021 by Carmen and Enrique [28], McAleer, Nakamura, and Watkins [10], and Yang, Yang, and Wang [53], respectively.

Figure 3 summarizes the key elements explored in this research, offering a succinct overview of the topics, methodologies, variables, types of rankings, and future perspectives addressed, with the aim that this compilation facilitates the review of the aspects covered in this analysis of university rankings.

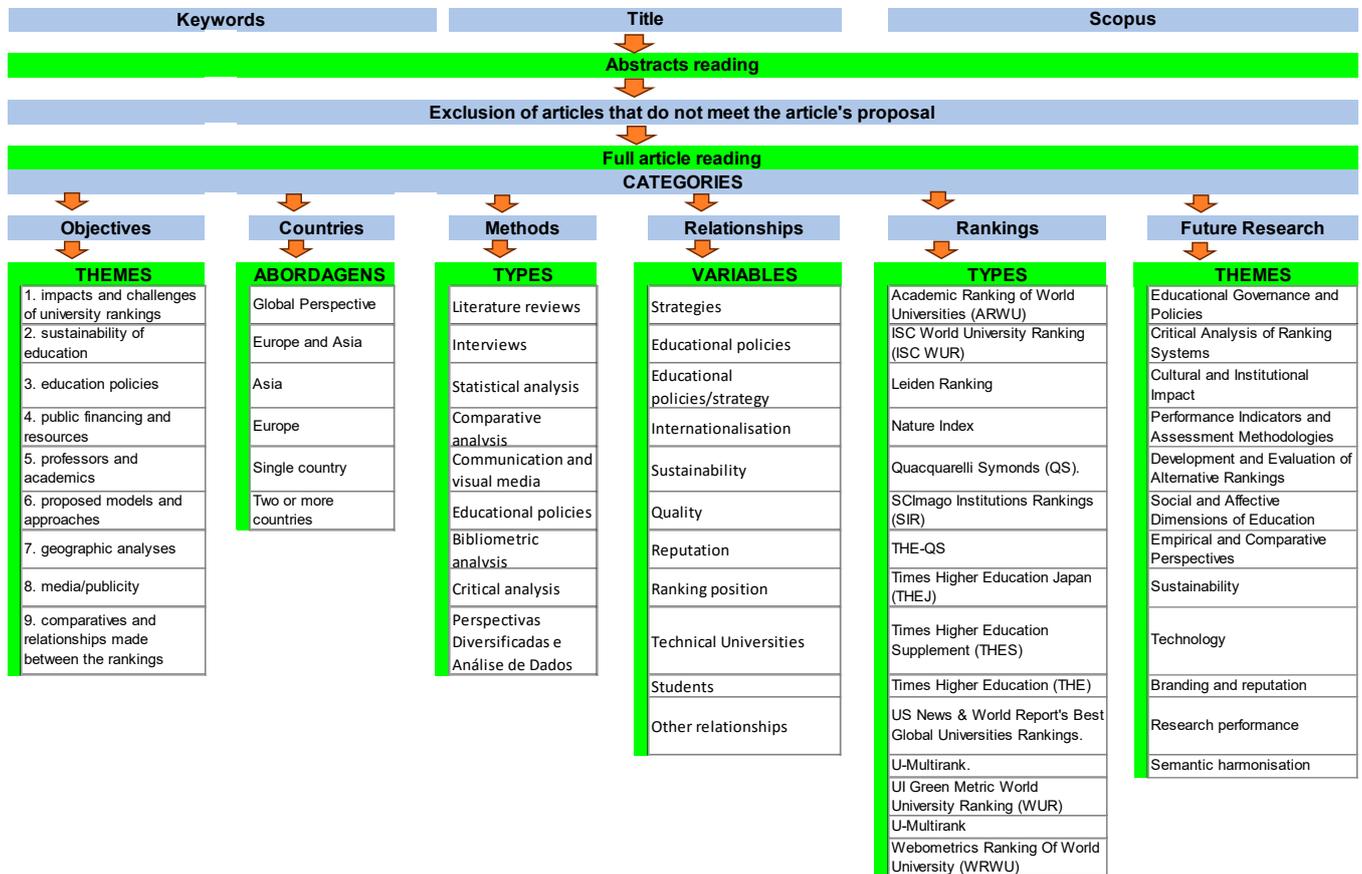


Figure 3. Summary table—systematic review. Source: author (2024).

4. Discussion

The aim of this study is to draw up an agenda for future research through a systematic review of the literature on university rankings. More precisely, this systematic review aims to answer the following questions:

- (Q1) What are the objectives of each study carried out?
- (Q2) Which countries were studied?
- (Q3) Which university rankings have been studied?
- (Q4) What variables are used to establish relationships with university rankings?
- (Q5) What methods were used?
- (Q6) What future research is proposed in the articles by the researchers?

The answers to each of the six research questions are detailed below.

4.1. (Q1) What Are the Objectives of Each Study Carried Out?

This systematic review of the literature on university rankings presents the objectives of the articles; the focus of the research is distributed into categories. The category with the most significant prominence in terms of the number of articles is the category “focus on the impacts and challenges of university rankings”, in which research that deals with the search for the status of “world-class university” was grouped. These studies demonstrate the strategies of using university rankings to reflect on the limitations and biases of rankings; these are all articles that generate analyses and promote decision-making.

Another analysis that can be carried out concerning the “objective of articles” category is that between 2021 and 2023, authors are observed exploring dimensions beyond traditional implementation, policies and indicators. This analysis reflects a significant thematic and methodological diversification, exemplified by the following studies:

Decuyper and Landri (2021) [49] investigate the influence of visual and multidimensional approaches on university rankings, analysing how these strategies can affect perceptions and practices within higher education.

Shahjahan, Sonneveldt, Estera, and Bae (2022) [18] introduce the concept of ‘emoscapes’ as affective indicators, proposing their use to shape global higher education policy.

Galleli, Teles, Santos, Freitas-Martins, and Hourneaux Junior (2022) [13] focus on sustainability, examining and comparing university rankings’ structures and evaluation criteria with the Berlin Principles.

Li and Xue (2022) [14] discuss educational policies to create world-class universities, emphasising the importance of sustainability in higher education.

Shahjahan, Estera, Bae, and Sonneveldt (2022) [18] analyse visual representations on university ranking websites, exploring how these images contribute to constructing a social imagination about higher education.

Poelmans, Sacchetti, Vancauwenbergh, and Piazza (2023) [23] investigate the semantic interpretation of data relating to ‘academic staff’ and ‘students’, expanding the understanding of how these elements are represented in university rankings.

4.2. (Q2) Which Countries Were Studied?

The analysis allowed us to understand the geographical distribution of the studies; in this way, referring to the “countries” category, it was identified that 20% of the articles approached the rankings from a global perspective, and in the specific country analysis, China stands out with six articles. Research in China has been directed at the concept, perception, construction, and policies to obtain the status of a “world-class university” [4,22,53,54]. Furthermore, Choi (2010) [2] investigated the challenges faced by Yanbian University, an ethnic minority university in China, in its attempt to become a world-class university.

One of the studies in China focused on four types of university rankings: the QS, THE, ARWU, and US News & World Report’s Best Global Universities rankings [4]. Moreover, the other research in China focused on the ARWU, QS, and THE rankings [53]. The remaining studies focus on something other than a specific university ranking [2,14,22,54].

4.3. (Q3) What Are the University Rankings Studied?

In the “university rankings” category, 13 articles did not focus on specific rankings. These articles have in common concern about researching strategies and policies adopted concerning university rankings [1,2,8,14,15,20,24,50] as well as studying the internationalisation of higher education and international dimensions to the detriment of national or local dimensions [22,54], quality assessment [34,46], and a critique of university rankings that may distort priorities [12].

The following university rankings highlighted in the studies were catalogued:

- (1) Academic Ranking of World Universities (ARWU)
- (2) ISC World University Ranking (ISC WUR)
- (3) Leiden Ranking
- (4) Nature Index
- (5) Quacquarelli Symonds (QS).
- (6) SCImago Institutions Rankings (SIR)
- (7) THE-QS
- (8) Times Higher Education Japan (THEJ)
- (9) Times Higher Education Supplement (THES)
- (10) Times Higher Education (THE)
- (11) US News & World Report’s Best Global Universities Rankings.
- (12) U-Multirank

- (13) UI Green Metric World University Ranking (WUR)
- (14) U-Multirank
- (15) Webometrics Ranking Of World University (WRWU)

This study stood out with 13 articles addressing three specific rankings: ARWU, THE, and QS. The countries studied in these articles are part of Asia and Europe. They indicate an opportunity for future research on other continents. The methodology used in these articles is literature review (three articles); interview (one article); statistical analysis (two articles); comparative analysis (two articles); methodology focused on communication analysis and visual media (one article); bibliometric analysis (one article); critical analysis (one article); methodology for document analysis of strategic plans (one article); and methodology using data from university rankings to analyse student experiences (one article).

The focus on THE university rankings is observed in five articles. From a global perspective, Kaycheng (2015) [31] and Rajagukguk, Prabowo, Bandur, and Setiowati (2023) [57] researched how indicators interact with each other with different methodological approaches. Statistical techniques were used, including correlation and multiple regression analysis, exploratory data analysis, and causal structure modelling using the NOTEARS algorithm.

In researching specific countries, three authors were mapped, Poelmans, Sacchetti, Vancauwenbergh, and Piazza (2023) [23], with comparative analyses of the data and results of THE before and after the semantic harmonisation of the data in Belgium and Italy. Harutyunyan (2014) [3] reviews and analyses the approach of the existing literature on university rankings in Armenia. Kohus, Demeter, Kun, Lukács, Czakó, and Sziget (2022) [48] use a bibliometric analysis of scientific publications in selected European universities.

4.4. (Q4) What Variables Are Used to Establish Relationships with University Rankings?

In the category “variables/relationships used together with university rankings”, Figure 4 was created to categorise the groupings identified in the research.

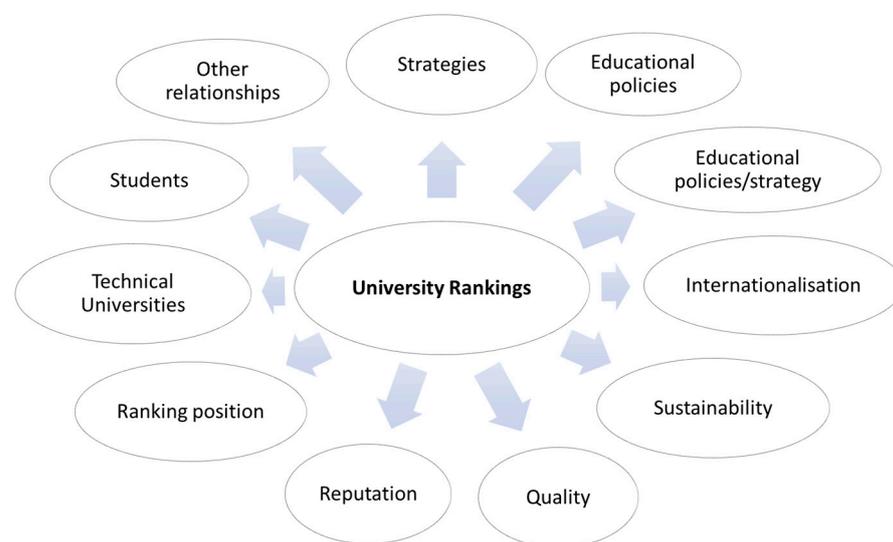


Figure 4. Variables/relationships. Source: author (2024).

The analysis revealed that five studies focus on institutional strategies, another five address internationalisation, four discuss reputation, four consider positioning in rankings, and four focus on the student’s perspective.

The strategic approach is discussed by universities in search of recognition as world-class institutions. Regarding internationalisation, studies explore the transition from a local perspective to an international scope, investigating global dimensions rather than national or local ones and correlating the institution’s size to its degree of internationalisation.

Regarding reputation, the publications analysed address the influence of rankings on the construction of image and brand, the dynamics of reputation between different rankings, and the perception of prestige at a global level.

Research on positioning in rankings studies the impact of various indicators on the ranking of universities, as well as the repercussions of this classification on the perception and strategic initiatives of institutions, the correlation between position in rankings and global leadership, and the significance of this position for the scientific impact of the university. In this context, a study relating retractions to university rankings is added. It concludes that universities with a better position in THE ranking have a lower rate of retraction of scientific articles [60].

Finally, understanding the relationship between rankings and students is essential. The literature indicates investigations into student preferences in private universities, the student experience in American institutions, both private and public, the interaction of rankings with the number of candidates, the acceptance rate at universities, and students' perception of rankings.

4.5. (Q5) What Methods Were Used?

In the methods category, it was observed that most research is conducted through literature reviews, interviews and statistical analyses, comparative analyses, communication and visual media, and bibliometric analyses, as shown in Figure 5.

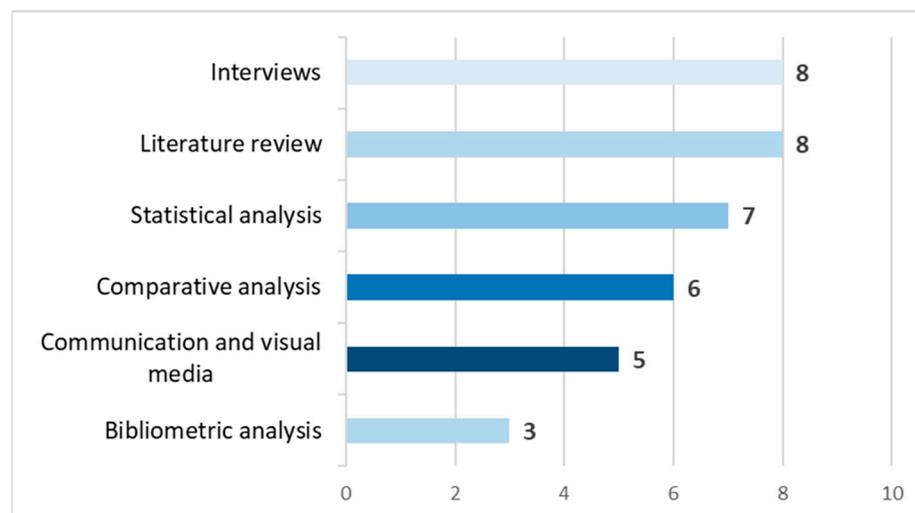


Figure 5. Number of articles by type of methodology. Source: author (2024).

Various study methodologies can be observed, enriching the understanding of university rankings. Next, tables are presented with the relationship between some methodologies, the articles' objectives, and the studies' geographic location. Figure 6 shows the directions in which studies were focused using the methodology that involves literature review.

It can be seen that the literature review was used to understand the impacts and challenges universities face in order to occupy a position in university rankings. In the global context, we sought to understand internationalization, analyse the indicators and categories used by the rankings, analyse various documentary sources (the academic literature, glossaries, strategies, official websites, etc.), as well as examining the implications in the context of the transnational governance of higher education, and we also carried out a negative critical analysis of the rankings. With regard to the focus on geographical analysis, it was noted that in Taiwan the existing literature on university rankings, educational policies, and the context of higher education in this country was checked. In Armenia, the analysis of the existing literature on the impact of rankings on education and science was explored.

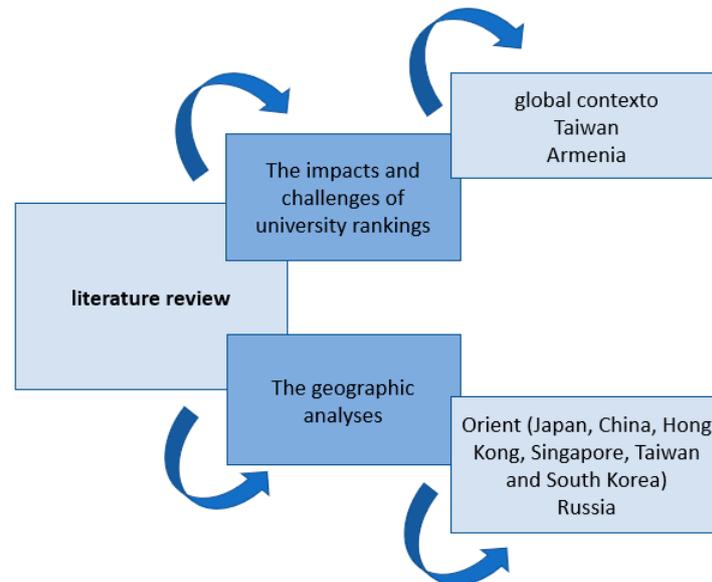


Figure 6. Literature review methodology. Source: author (2024).

Figure 7 shows the directions in which studies were focused using the methodology that involves interviews.



Figure 7. Interview methodology. Source: author (2024).

It can be seen that the interview methodology has been applied to specific countries, with four different objectives: i. Focus on impacts and challenges, with semi-structured interviews with university leaders, and interviews with senior lecturers, senior administrators, and community leaders to understand the impacts and challenges of university rankings. ii. Focus on education policies, using interviews with experts in higher education. iii. Focus on teachers and academics, with semi-structured interviews with 42 scientists and administrators from universities in Moscow and 24 faculty members from Peking and Tsinghua Universities. iv. Focus on model proposals and approaches, in which interviews were conducted with 116 key informants from eight universities in and around Bangkok, with the aim of proposing a model to propel Thai higher education institutions to a world-class level.

Figure 8 reports that in 2020, 2021, and 2022, the research used an approach related to communication and visual media.

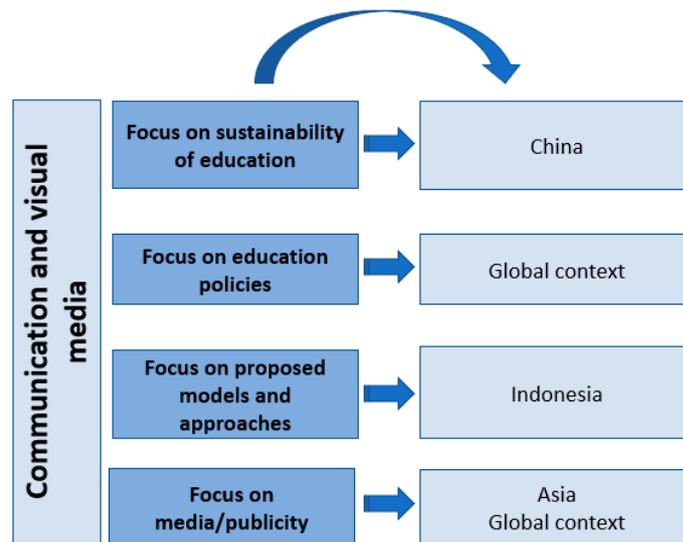


Figure 8. Communication and visual media. Source: author (2024).

Different from the literature review methodology used in six articles between 2009 and 2014, the most recent articles focus on the Theory of Affect, analysing texts and public promotional materials from university rankings, and 135 visual media sources are also analysed, including photographs which are publicly available. Social networks and news analyses were evaluated globally and in specific countries.

The objective in the global context is to understand how these rankings construct and use “emoscapes” (affective landscapes) to shape educational policies and practices and to analyse how the Nobel Prize is used as an indicator of excellence by the main university ranking systems, examining how mediatisation (the influence of the media) and celebritisation (the creation of academic celebrities) are used to shape perceptions of academic excellence. This media/outreach-focused approach looks at how global university ranking (GUR) websites construct a “social imaginary” of higher education in Asia through visualisation.

In Indonesia, a new approach to data analysis methods in the form of visualisation is evaluated using the Temporal Topic Model (TTM) method. This approach is aimed at assisting the management of private universities. The focus is to generate time-based visualisations and the monthly Temporal Topic Model to visually change news topics related to rankings, allowing management to decide on marketing strategies and policies concerning public opinion.

In the methods category, it is observed that, in the case of China, 50% of the research adopted the interview technique as the primary methodology. From a global perspective, the most recurrent methodologies include comparative analyses, statistical analyses, and literature reviews. Notably, articles that employ literature reviews aim to elucidate the impacts and challenges arising from university rankings. Comparative analysis is applicable to diverse research objectives: the impacts and challenges of university rankings, educational sustainability, financing and public resources, issues related to teachers and academics, geographical analyses, and comparative studies.

This wide range of applicability demonstrates the versatility of comparative analysis as a research methodology.

Research focused on teachers and academics was conducted in various national contexts, including Italy, Belgium, Japan, Russia, China, and the United States, using a methodological range comprising comparative analyses, statistical analyses, interviews, and analyses of student experiences. Such studies explore, among other themes, the integrity dilemmas faced by Russian academics faced with the challenge of positioning their institutions as world-class universities; the semantic variability in the interpretation and data collection of frequently used concepts, such as “academic staff” and “students”, in

contexts of university rankings; analysing whether a university's classification in the rankings influences aspects such as the institution's wealth, acceptance rates, class sizes, and potential earnings of graduates; and finally, the effects of the inclusion of Japanese universities in national rankings on the number of applicants and acceptance rates, investigating whether more favourable placements are correlated with an increase in enrolment rates for new scholars.

Finally, although the interpretations of faculty members in China, as well as the definitions and implications of aspiring to world-class university status, generally follow global trends, they struggle to find the right mix across global, national, and local dimensions to achieve responsibilities and productivity strictly defined by the government or the institutions where they work.

In a survey of postgraduate professors in the area of engineering III in Brazil, which also used a questionnaire as a methodology to research which factors influence teaching performance, they agree with professors in China who are concerned with research and appreciation in the national scenario, stating for example factors such as "lack of national project" and the "national scenario", and there were teachers who emphasised international issues, such as "international experience", "international contacts/cooperation", "national and international exchange", "participation in events abroad", "partnership in research at an international level" [61].

4.6. (Q6) What Future Research Is Proposed in the Articles by the Researchers?

A careful analysis of the proposals in the "future research" category revealed that many scientific articles do not propose explicit suggestions for subsequent investigations. Among the articles that effectively presented clear recommendations for future research, compiling a list of 20 suggestions was possible. This list is intended for the appreciation and consideration of researchers, providing possible directions for future studies. The selection of these suggestions has the potential to enrich the field of research, contributing significantly to the advancement of knowledge around the study in question.

To analyse the relationship between the objectives of the studies, the types of university rankings used, and the variables presented, we used Table 1—university rankings, which reveals that 13 of the articles analysed (corresponding to 27% of the total) focus on three specific rankings of universities: Academic Ranking of World Universities (ARWU), Times Higher Education World University Rankings (THE), and Quacquarelli Symonds (QS) World University Rankings. When focusing the analysis on these rankings, it was observed that the countries covered in the studies include Japan (2019), Austria, Denmark, Finland and Sweden (2020), India (2022), China (2021), Russia (2014), Taiwan (2013), and the United States (2019). Therefore, future research, including countries that have not yet been the subject of study, will expand the scope of analyses to include varied contexts and enable intercultural and transnational comparisons.

Topics that can be addressed in future research are the internationalization of higher education [9,10], government funding programs [21], relationship with obtaining the Nobel Prize [35], the role of branding [32], universities' efforts to become world class [53], the use of rankings as a competitive and strategic tool [6,7,55], and students' experience with the universities included in the rankings [25].

The methodology employed by Hou and Jacob (2017) [45], who used regression analysis to evaluate the impact of several indicators on university rankings in the 2013 and 2014 rankings, represents a reference model for future studies. This approach can be carried out in similar research in more recent periods. Additionally, research conducted by Efimova (2014) [52], which explored the influence of regional scientific and innovative clusters in improving the competitive positions of universities in Russia, suggests a potential field of study in other national contexts.

In Denmark and India, research focused on analysing the political processes of higher education and exploring the search for strategic positioning in the global knowledge economy. Future research could examine whether all countries that occupy prominent

positions in international rankings have established and consistently implemented higher education policies intended for becoming world-renowned institutions. Additionally, it is pertinent to identify the common and divergent policies between these countries to provide guidelines for institutions that aspire to integrate such rankings and are currently not positioned.

During the analysis of the articles covered in this systematic literature review, a notable aspect was noted: many studies do not explicitly offer suggestions for future research. Given this observation, Table 14 was created, cataloguing the journals that published more than one article identified in the review. In addition to the JCR impact factor and the number of citations for each article, this table includes an indication—‘Y’ for yes and ‘N’ for no—in the last column, denoting whether or not the articles provided proposals for future scientific investigations.

Table 14. Journals × impact factor × number of citations × future research.

Author	Title	Journal	Impact Factor (JCR)	No. of Citations	Future Research
[26]	“The introduction of the Times Higher Education Japan university rankings and changes in institutional admissions outcomes”	<i>Compare</i>	1.8	2	N
[33]	“Imagining ‘Asian’ higher education: visual campus gaze and global university rankings (GURs) websites”	<i>Compare</i>	1.8	10	S
[33]	“Commensuration of the globalised higher education sector: how university rankings act as a credential for world-class status in China”	<i>Compare</i>	1.8	30	S
[22]	“Building world class universities in China: exploring faculty’s perceptions, interpretations of and struggles with global forces in higher education”	<i>Compare</i>	1.8	54	S
[18]	“Emoscapes and commercial university rankers: the role of affect in global higher education policy”	<i>Critical Studies in Education</i>	3.9	40	S
[49]	“Governing by visual shapes: university rankings, digital education platforms and cosmologies of higher education”	<i>Critical Studies in Education</i>	3.9	56	N
[12]	“The mismeasure of higher education? The corrosive effect of university rankings”	<i>Ethics in Science and Environmental Politics</i>	0.0	27	N
[62]	“The times higher education world university rankings, 2004–2012”	<i>Ethics in Science and Environmental Politics</i>	0.0	39	N
[9]	“Global university rankings and their impact on the internationalisation of higher education”	<i>European Journal of Education</i>	2.4	57	N

Table 14. Cont.

Author	Title	Journal	Impact Factor (JCR)	No. of Citations	Future Research
[15]	"Global university rankings, transnational policy discourse and higher education in Europe"	<i>European Journal of Education</i>	2.4	111	N
[20]	"In the shadow of celebrity? World-class university policies and public value in higher education"	<i>Higher Education Policy</i>	1.6	70	N
[1]	Transforming higher education in whose image?" "Exploring the concept of the 'world-class' university in Europe and Asia"	<i>Higher Education Policy</i>	1.6	792	N
[24]	"World-class universities and the Soviet legacies of administration: Integrity dilemmas in Russian higher education"	<i>Higher Education Quarterly</i>	2.2	20	S
[31]	"Multicolinearity and indicator redundancy problem in world university rankings: An example using times higher education world university ranking 2013–2014 data"	<i>Higher Education Quarterly</i>	2.2	22	N
[35]	"Academic stars and university rankings in higher education: impacts on policy and practice"	<i>Policy Reviews in Higher Education</i>	0.0	25	N
[19]	"Active instruments: on the use of university rankings in developing national systems of higher education"	<i>Policy Reviews in Higher Education</i>	0.0	35	N
[48]	"A Study of the Relation between Byline Positions of Affiliated/Non-Affiliated Authors and the Scientific Impact of European Universities in Times Higher Education World University Rankings"	<i>Sustainability (Switzerland)</i>	3.9	0	S
[14]	"A Social Networking Analysis of Education Policies of Creating World-Class Universities for Higher Education Sustainability in China"	<i>Sustainability (Switzerland)</i>	3.9	5	S
[10]	"Size, internationalization, and university rankings: Evaluating and predicting Times Higher Education (THE) data for Japan"	<i>Sustainability (Switzerland)</i>	3.9	25	S

Source: author (2023).

The objective of this compilation was to investigate the existence of an editorial standard in journals, particularly regarding the requirement or omission of suggestions for future research in published articles. However, the analysis revealed a heterogeneity in editorial practices: it was found that, even within the same journal, some articles presented suggestions for future research while others did not.

With the aim of investigating the issue of not having an explicit suggestion for future research in the article, some hypotheses that allow comparison were mapped. For this reason, the focus was to analyse the journals that presented more than one article in this literature review. The analysis is as follows:

Was it related to the magazine's rules? The journal requires that it has a proposal for future research suggestions, and, if so, all articles would present future research.

If the greater impact factor requires future research, all high-impact journals would feature future research.

Regarding the highest number of citations, if it demonstrates that it presents suggestions for future research, all the most cited articles would present future research.

In a more detailed analysis of the practices of including suggestions for future research in academic publications, such inclusion is optional, even among articles published in the same journal. A notable exception is the analysis of articles from the journal *Sustainability*, where all three articles mapped in this study propose future investigations.

Additionally, the data presented in Table 14 permit inferring that there is no direct correlation between the number of citations or the impact factor of an article and the probability of it presenting suggestions for future research. This observation suggests that the decision to include proposals for future research may be more linked to the individual factors of the authors.

The contributions of this article are the definition of an agenda for future research through a systematic review of the literature on university rankings. This work facilitates a comprehensive understanding of the field of study through categorisation (objectives, countries, types of rankings, associated variables, methodologies, and suggestions for future research) and the organisation of objectives into clear themes. The detailed analysis of the main variables and the critical reflection including future research in the articles, culminating in elaborating a summary table, provides an essential macro-structural vision of university ranking studies.

The recommendations outlined for future investigations, aiming to expand understanding of the topic and complement Table 13, future research proposals, presented in Section 3.6, include the following:

- Dedication to research that relates university rankings to South America and Africa, which, according to this research, needs study.
- It is proposed that the guidelines of high-impact journals be evaluated to identify how the requirement to include suggestions for future research is addressed.
- Studies that focus on these three specific university rankings, ARWU, THE, and QS, focus on these following countries: Japan (2019), Austria, Denmark, Finland and Sweden (2020), India (2022), China (2021), Russia (2014), Taiwan (2013), and the United States (2019). Therefore, future research is suggested with the inclusion of countries that have not yet been the object of study, considering, but not limited to, the following themes: the internationalisation of higher education, government funding programs, relationship with obtaining the Nobel Prize, the role of branding, universities' efforts to become world-class, the use of rankings as a competitive and strategic tool and students' experience with the universities included in the rankings.
- The methodology used by Hou and Jacob (2017) [45], who used regression analyses to evaluate the impact of several indicators on university rankings in the 2013 and 2014 rankings, represents a reference model for future studies. This approach can be carried out for similar research in more recent periods.
- Research conducted by Efimova (2014) [52], which explored the influence of regional scientific and innovative clusters in improving the competitive positions of universities in Russia, suggests a potential field of study in other national contexts.
- In Denmark and India, research focused on analysing the political processes of higher education and exploring the search for strategic positioning in the global knowledge economy. Future research could examine whether all countries that occupy prominent positions in international rankings have established and consistently implemented higher education policies to become world-renowned institutions.
- It would be pertinent to identify the common and divergent policies between these countries to provide guidelines for institutions that aspire to integrate such rankings and are currently not positioned.
- Table 13 can be used as a starting point for further research, relating the categories presented, exploring scenarios yet to be researched and including factors yet to be related.

5. Conclusions

University rankings are emerging not only as comparative tools, but also as significant influencers in shaping strategies and decisions within higher education institutions. They play a central role in the construction of educational realities, mediating the relationship between universities and a wide range of stakeholders—from students and faculty to managers and policy makers.

This study reveals that rankings go beyond simple listings, acting as forces that shape governance, policies, practices, and perceptions at the global level of higher education. This complexity underlines the need to approach rankings as intrinsic elements of the global educational ecosystem, demanding transparency in the evaluation criteria and adaptations that reflect the diversity of higher education.

The need for a broader dialogue on the construction and use of rankings is highlighted, pointing to a path for future research, particularly in less-represented contexts, to understand their long-term consequences. It highlights the urgency of questioning the values promoted by these rankings and the impacts they trigger, promoting a debate on how they can be better employed in favour of excellence and equity in higher education.

We identified a significant gap in the current literature: the absence of explicit suggestions for future research. This reveals fertile ground for further study, encouraging the exploration of as-yet-unaddressed aspects of rankings, especially in under-represented contexts. Thus, we set a robust agenda for future research, emphasizing the importance of further analyses that enrich our understanding and critique of university rankings.

Ultimately, this study not only maps out the field of university rankings in detail, but also directs future research, serving as a solid foundation not only for educational managers and policymakers, but also as a guide for researchers committed to unravelling the nuances of this relevant topic. The influence of rankings on global higher education is acknowledged in this study, and recognizing this drives us to continuous analysis to ensure that they are instruments for the authentic improvement of higher education.

Supplementary Materials: The following supporting information can be downloaded at: <https://www.mdpi.com/article/10.3390/su16073043/s1>, PRISMA 2020 Checklist.

Author Contributions: Definition of the literature review proposal, T.T. and C.T.P.; methodology, T.T. and C.T.P.; writing—preparation of the original draft, T.T.; review, T.T. and C.T.P.; and editing, T.T. All authors have read and agreed to the published version of the manuscript.

Funding: This work was supported by National Council for Scientific and Technological Development (CNPq), Process 308269/2021-7, CNPQ n° 4/2021—Research Productivity Scholarship—PQ; and the Araucária Foundation, CP 19/2022—Institutional Program to Support the Establishment of Young Doctors—2nd Phase. N° 19/2022. Protocol N° JDT2022271000034.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Data are contained within the article.

Conflicts of Interest: The authors declare no conflicts of interest.

References

1. Deem, R.; Mok, K.H.; Lucas, L. Transforming higher education in whose image? Exploring the concept of the ‘world-class’ university in Europe and Asia. *High. Educ. Policy* **2008**, *21*, 83–97. [[CrossRef](#)]
2. Choi, S. Globalization, China’s drive for world-class universities (211 Project) and the challenges of ethnic minority higher education: The case of Yanbian university. *Asia Pac. Educ. Rev.* **2010**, *11*, 169–178. [[CrossRef](#)]
3. Harutyunyan, T. Times higher education world university rankings for 2012–2013 and prospects for science development in Armenia. *Sci. Inno.* **2014**, *10*, 80–83. [[CrossRef](#)]
4. Allen, R.M. Commensuration of the globalised higher education sector: How university rankings act as a credential for world-class status in China. *Compare* **2021**, *51*, 920–938. [[CrossRef](#)]

5. Lindblad, S.; Lindblad, R.F. Transnational governance of higher education: On globalization and international university ranking lists. *Teach. Coll. Rec.* **2009**, *111*, 180–202. [[CrossRef](#)]
6. Lo, W.Y.W. University rankings as a zoning technology: A Taiwanese perspective on an imaginary Greater China higher education region. *Glob. Soc. Educ.* **2013**, *11*, 459–478. [[CrossRef](#)]
7. Avralev, N.; Efimova, I. Global university rankings as indicators of the implementation of the integration process and competitive tool in the context of globalization of higher education. *Life Sci. J.* **2014**, *11*, 648–652.
8. Adam, E. Reviving the sociology of organizations in higher education: The case of how global university rankings influence the strategic management of Canadian universities. *Int. Rev. Sociol.* **2023**. [[CrossRef](#)]
9. Hauptman Komotar, M. Global university rankings and their impact on the internationalisation of higher education. *Eur. J. Educ.* **2019**, *54*, 299–310. [[CrossRef](#)]
10. McAleer, M.; Nakamura, T.; Watkins, C. Size, internationalization, and university rankings: Evaluating and predicting Times Higher Education (THE) data for Japan. *Sustainability* **2019**, *11*, 1366. [[CrossRef](#)]
11. Hauptman Komotar, M. Discourses on quality and quality assurance in higher education from the perspective of global university rankings. *Qual. Assur. Educ.* **2020**, *28*, 78–88. [[CrossRef](#)]
12. Robinson, D. The mismeasure of higher education? The corrosive effect of university rankings. *Ethics Sci. Environ. Politics* **2013**, *13*, 11–17. [[CrossRef](#)]
13. Galleli, B.; Teles, N.E.B.; Santos, J.A.R.; Freitas-Martins, M.S.; Hourneaux Junior, F. Sustainability university rankings: A comparative analysis of UI green metric and the times higher education world university rankings. *Int. J. Sustain. High. Educ.* **2022**, *23*, 404–425. [[CrossRef](#)]
14. Li, J.; Xue, E. A Social Networking Analysis of Education Policies of Creating World-Class Universities for Higher Education Sustainability in China. *Sustainability* **2022**, *14*, 10243. [[CrossRef](#)]
15. Erkkilä, T. Global university rankings, transnational policy discourse and higher education in Europe. *Eur. J. Educ.* **2014**, *49*, 91–101. [[CrossRef](#)]
16. Ananthakrishnan, R.; Bernholdt, D.E.; Bharathi, S.; Brown, D.; Chen, M.; Chervenak, A.L.; Cinquini, L.; Drach, R.; Foster, I.T.; Fox, P.; et al. Building a global federation system for climate change research: The Earth System Grid Center for Enabling Technologies (ESG-CET). *J. Phys. Conf. Ser.* **2007**, *78*, 012050. [[CrossRef](#)]
17. Al-Haimi, B.; Ibrahim, D.N.; Hamid, A. Building world class universities in yemen: Exploring yemeni higher education expert's perceptions and thoughts. *Int. J. Recent Technol. Eng.* **2019**, *8*, 455–460. [[CrossRef](#)]
18. Shahjahan, R.A.; Sonneveldt, E.L.; Estera, A.L.; Bae, S. Emoscapes and commercial university rankers: The role of affect in global higher education policy. *Crit. Stud. Educ.* **2022**, *63*, 275–290. [[CrossRef](#)]
19. Lim, M.A.; Williams Øerberg, J. Active instruments: On the use of university rankings in developing national systems of higher education. *Policy. Rev. High. Educ.* **2017**, *1*, 91–108. [[CrossRef](#)]
20. Cremonini, L.; Westerheijden, D.F.; Benneworth, P.; Dauncey, H. In the shadow of celebrity? World-class university policies and public value in higher education. *High. Educ. Policy* **2014**, *27*, 341–361. [[CrossRef](#)]
21. Adam, E. 'Governments base performance-based funding on global rankings indicators': A global trend in higher education finance or a global rankings literature fiction? A comparative analysis of four performance-based funding programs. *Int. J. Educ. Dev.* **2020**, *76*, 102197. [[CrossRef](#)]
22. Kim, D.; Song, Q.; Liu, J.; Liu, Q.; Grimm, A. Building world class universities in China: Exploring faculty's perceptions, interpretations of and struggles with global forces in higher education. *Compare* **2018**, *48*, 92–109. [[CrossRef](#)]
23. Poelmans, H.; Sacchetti, L.; Vancauwenbergh, S.; Piazza, S. Fuzzy data definitions distort fair comparability of universities in university rankings: Results from Italy and Belgium on the Times Higher Education Ranking. *Qual. High. Educ.* **2023**. [[CrossRef](#)]
24. Oleksiyenko, A.V. World-class universities and the Soviet legacies of administration: Integrity dilemmas in Russian higher education. *High. Educ. Q.* **2022**, *76*, 385–398. [[CrossRef](#)]
25. Heffernan, T.A. Using university rankings as a potential indicator of student experiences in American higher education. *Perspect. Policy Pract. High. Educ.* **2019**, *23*, 12–17. [[CrossRef](#)]
26. Katsumoto, S.; Nakahara, L.; Bowman, N.A. The introduction of the Times Higher Education Japan university rankings and changes in institutional admissions outcomes. *Compare* **2022**, *54*, 277–293. [[CrossRef](#)]
27. Chaeddhananan, K.; Dhirathiti, N.S. The model for strategic drive of Thai higher education institutions toward world-class universities. *Kasetsart J. Soc. Sci.* **2022**, *43*, 271–278. [[CrossRef](#)]
28. Carmen, P.E.; Enrique, O.M. Do the technical universities exhibit distinct behaviour in global university rankings? A Times Higher Education (THE) case study. *J. Eng. Technol. Manag.* **2018**, *48*, 97–108. [[CrossRef](#)]
29. Ariestya, W.W.; Mutiara, A.B.; Wiryana, I.M.; Wirawan, S. Visualization of the Temporal Topic Model on Higher Education Preferences with Higher Education Ranking Indicators. *Int. J. Adv. Comput. Sci. Appl.* **2021**, *12*, 138–143. [[CrossRef](#)]
30. Jeremic, V.; Jovanovic-Milenkovic, M. Evaluation of Asian university rankings: Position and perspective of leading Indian higher education institutions. *Curr. Sci.* **2014**, *106*, 1647–1653.
31. Kaycheng, S. Multicollinearity and indicator redundancy problem in world university rankings: An example using times higher education world university ranking 2013–2014 data. *High. Educ. Q.* **2015**, *69*, 158–174. [[CrossRef](#)]

32. Fernandes, A.J.; Shukla, B.; Fardoun, H. Indian Higher Education in World University Rankings—The Importance of Reputation and Branding. *J. Stat. Appl. Probab.* **2022**, *11*, 673–681. [[CrossRef](#)]
33. Shahjahan, R.A.; Estera, A.L.; Bae, S.; Sonneveldt, E.L. Imagining ‘Asian’ higher education: Visual campus gaze and global university rankings (GURs) websites. *Compare* **2022**, *52*, 129–146. [[CrossRef](#)]
34. Ramírez-Gutiérrez, Z.; Barrachina-Palanca, M.; Ripoll-Feliu, V.M. University rankings disclosure and efficiency in higher education: A bibliometric and systematic analysis. *Rev. Educ.* **2019**, *2019*, 255–286. [[CrossRef](#)]
35. Stack, M. Academic stars and university rankings in higher education: Impacts on policy and practice. *Policy. Rev. High. Educ.* **2020**, *4*, 4–24. [[CrossRef](#)]
36. Sampieri, R.H.C.; Carlos, F.; Lucio, M.P.B. *Metodologia de Pesquisa*; McGraw-Hill: São Paulo, Brazil, 2013.
37. Walliman, N. *Métodos de Pesquisa*; Saraiva: São Paulo, Brazil, 2015.
38. Page, M.J.; McKenzie, J.E.; Bossuyt, P.M.; Boutron, I.; Hoffmann, T.C.; Mulrow, C.D.; Shamseer, L.; Tetzlaff, J.M.; Akl, E.A.; Brennan, S.E.; et al. The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ* **2021**, *372*, n71. [[CrossRef](#)] [[PubMed](#)]
39. Page, M.J.; Moher, D.; Bossuyt, P.M.; Boutron, I.; Hoffmann, T.C.; Mulrow, C.D.; Shamseer, L.; Tetzlaff, J.M.; Akl, E.A.; Brennan, S.E.; et al. PRISMA 2020 explanation and elaboration: Updated guidance and exemplars for reporting systematic reviews. *BMJ* **2021**, *372*, n160. [[CrossRef](#)] [[PubMed](#)]
40. Ortinau, D.J. Writing and publishing important scientific articles: A reviewer’s perspective. *J. Bus. Res.* **2011**, *64*, 150–156. [[CrossRef](#)]
41. Santesteban-Echarri, O.; Núñez-Morales, N.I. Cómo escribir un artículo científico por primera vez. *Psiquiatr. Biol.* **2017**, *24*, 3–9. [[CrossRef](#)]
42. Aparecida Silveira, E.; Maria de Sousa Romeiro, A.; Noll, M. Guide for scientific writing: How to avoid common mistakes in a scientific article. *J. Hum. Growth Dev.* **2022**, *32*, 341–352. [[CrossRef](#)]
43. Lippi, G. How do I write a scientific article?—A personal perspective. *Ann. Transl. Med.* **2017**, *5*, 416. [[CrossRef](#)] [[PubMed](#)]
44. Baty, P. The times higher education world university rankings, 2004–2012. *Ethics Sci. Environ. Politics* **2013**, *13*, 125–130. [[CrossRef](#)]
45. Hou, Y.W.; Jacob, W.J. What contributes more to the ranking of higher education institutions? A comparison of three world university rankings. *Int. Educ. J.* **2017**, *16*, 29–46.
46. Mikhaylov, A.S.; Mikhaylova, A.A. University rankings in the quality assessment of higher education institutions. *Qual. Access Success* **2018**, *19*, 111–117.
47. Polyakov, M.; Bilozubenko, V.; Korneyev, M.; Nebaba, N. Analysis of key university leadership factors based on their international rankings (QS world university rankings and times higher education). *Probl. Perspect. Manag.* **2020**, *18*, 142–152. [[CrossRef](#)]
48. Kohus, Z.; Demeter, M.; Kun, L.; Lukács, E.; Czakó, K.; Szigeti, G.P. A Study of the Relation between Byline Positions of Affiliated/Non-Affiliated Authors and the Scientific Impact of European Universities in Times Higher Education World University Rankings. *Sustainability* **2022**, *14*, 13074. [[CrossRef](#)]
49. Decuypere, M.; Landri, P. Governing by visual shapes: University rankings, digital education platforms and cosmologies of higher education. *Crit. Stud. Educ.* **2021**, *62*, 17–33. [[CrossRef](#)]
50. Lo, W.Y.W. Soft power, university rankings and knowledge production: Distinctions between hegemony and self-determination in higher education. *Comp. Educ.* **2011**, *47*, 209–222. [[CrossRef](#)]
51. Jöns, H.; Hoyler, M. Global geographies of higher education: The perspective of world university rankings. *Geoforum* **2013**, *46*, 45–59. [[CrossRef](#)]
52. Efimova, I.N. University Rankings as Instruments for the Reform of the System of Higher Education in the Global Context. *Russ. Educ. Soc.* **2014**, *56*, 15–39. [[CrossRef](#)]
53. Yang, L.; Yang, J.; Wang, C. The research-intensive university in a glonacal higher education system: The creation of the world-class university in China. *J. High. Educ. Policy Manag.* **2021**, *43*, 415–434. [[CrossRef](#)]
54. Oleksiyenko, A.V.; Liu, J. Internationalization of Higher Education in the Greater Bay Area: The Role of World-Class Universities and Regional Innovation. *J. High. Educ. Policy Leadersh. Stud.* **2022**, *3*, 50–64. [[CrossRef](#)]
55. Yudkevich, M.; Altbach, P.G.; Rumbley, L.E. Global university rankings: The “Olympic Games” of higher education? *Prospects* **2015**, *45*, 411–419. [[CrossRef](#)]
56. Safón, V. Inter-ranking reputational effects: An analysis of the Academic Ranking of World Universities (ARWU) and the Times Higher Education World University Rankings (THE) reputational relationship. *Scientometrics* **2019**, *121*, 897–915. [[CrossRef](#)]
57. Rajagukguk, S.A.; Prabowo, H.; Bandur, A.; Setiowati, R. Behind the Rank: The Synthesis of a Causal Model of Variables Influencing Times Higher Education University Rankings. *J. Syst. Manag. Sci.* **2023**, *13*, 364–380. [[CrossRef](#)]
58. Yaghtin, M.; Shirazi, M.S. ISC World University Ranking: Its correlation with Leiden, Nature Index, Times Higher Education (THE) and Quacquarelli Symonds (QS). *Int. J. Inf. Sci. Manag.* **2023**, *21*, 271–288. [[CrossRef](#)]
59. Dobrota, M.; Bulajic, M.; Bornmann, L.; Jeremic, V. A new approach to the QS University ranking using the composite I-distance indicator: Uncertainty and sensitivity analyses. *J. Assoc. Soc. Inf. Sci. Technol.* **2016**, *67*, 200–211. [[CrossRef](#)]
60. Lievore, C.; Rubbo, P.; Dos Santos, C.B.; Picinin, C.T.; Pilatti, L.A. Research ethics: A profile of retractions from world class universities. *Scientometrics* **2021**, *126*, 6871–6889. [[CrossRef](#)] [[PubMed](#)]

61. Teixeira, T.; Picinin, C.T.; Pilatti, L.A. Factors influencing professors' performance in graduate programs in the Engineering III area. *Inter Discip.* **2022**, *10*, 225–249. [[CrossRef](#)]
62. Dimzov, S.; Matošić, M.; Urem, I. University rankings and institutional affiliations: Role of academic librarians. *J. Acad. Librariansh.* **2021**, *47*, 102387. [[CrossRef](#)]

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.