Exploring the Potential of Yemeni Universities for Rankings: An Analytical Study of Prominent International University Ranking Systems

Fuaad Hasan Abdulrazzak[3], Salah AL-Hagree[1,2,4], Maher Al-Sanabani[3], Ahmed Al-Shalabi[1], Ayedh Abdulaziz Mohsen[2], Nashwan Ahmed Al-Majmar[2,4], Ghaleb Al-Gaphari[1], Mossa Ghurab[1], Mohammed Gamal[2]

[1] Computer Science Department, Faculty of Computer and Information Technology, Sana'a University, Yemen.

[2] Computer Science Department, Faculty of Sciences, Ibb University, Yemen.

[3] Computer Science Department, Faculty of Computer and Information Technology, Thamar University, Yemen.

[4] Computer Science, Aljazeera University, Yemen.

fuaad.abdulrazzak@tu.edu.ye, s.alhagree@gmail.com, s.alhagree@su.edu.ye, M.sanabani@gmail.com, a.alshalabi@su.edu.ye, ayedh992001@hotmail.com, almojammer2015@gmail.com, drghalebh@su.edu.ye, musa@su.edu.ye, m.alhoomaidi@gmail.com

Abstract:

Specifically targeting Yemeni universities, this research focuses on their potential to enter and enhance their positions in the international rankings such as Academic Ranking of World Universities (ARWU), Times Higher Education World University Ranking (THE), Quacquarelli Symonds World University Ranking (QS), and Webometrics Ranking and SCImago Institutions Rankings (SIR). Its objective is to encourage Yemeni universities to prioritize the criteria outlined in these rankings and view them as a means to access other international rankings. The research tackles the challenge of comprehending the criteria and application process required for Yemeni universities to participate in these rankings, as well as the rankings they have achieved. The study highlights the importance of this research by providing Yemeni university administrators with valuable insights regarding the criteria used for international rankings and the rankings obtained by Yemeni universities. This understanding can facilitate efforts to enhance the quality of higher education within these institutions. The findings of the study reveal that two Yemeni universities are listed in the QS. The University of Science and Technology, Yemen, ranks 151-170, while Thamar University in Thamar, Yemen, ranks 171-200. The findings of the study reveal that Ibb University secures the highest position among Yemeni universities in the SIR for 2023, with an overall score of 15.4 and a world rank of 3130. Sana'a University follows closely behind, ranking second among Yemeni universities according to these criteria, with a total score of 14.9 and a world rank of 3190.

Keywords: *QS, Higher Education, University Rankings, Yemeni Universities.*

Introduction

In recent years, global university rankings have become increasingly influential in assessing the quality and reputation of higher education institutions worldwide. These rankings serve as essential benchmarks for universities, students, researchers, and policymakers in evaluating academic performance, research productivity, and international standing (Ahmed, 2025)[14]. Recognizing the significance of these rankings, this study aims to investigate the rankings of Yemeni universities and shed light on their current positions and potential for improvement. Yemen, a country located in the Arabian Peninsula, has a diverse higher education sector comprising several universities that play a vital role in shaping the nation's intellectual and socio-economic development. However, Yemeni universities have faced numerous challenges, including limited resources, political instability, and regional conflicts, which have hindered their progress and international recognition. Understanding the rankings of Yemeni universities is crucial for several reasons. Firstly, it provides valuable insights into the current state of higher education in Yemen and allows for a comparative analysis with universities in other countries. This comparison helps identify areas of strength and weakness, enabling universities to focus on enhancing their academic programs, research output, and overall institutional performance[16]. Moreover, investigating the rankings of Yemeni universities can contribute to the ongoing efforts of university administrators, policymakers, and stakeholders to improve the quality of higher education in the country. By comprehending the criteria and methodologies used in these rankings, universities can align their strategies and priorities accordingly, aiming to meet the international standards set by renowned ranking systems. The purpose of this study is not only to examine the rankings of Yemeni universities but also to evaluate their potential for enhancing their positions in these rankings. By analyzing five prominent international rankings, namely Academic Ranking of World Universities (ARWU), Times Higher Education World University Ranking (THE), Quacquarelli Symonds World University Ranking(QS), Webometrics Ranking, and SCImago Institutions Rankings (SIR), this research aims to identify the strengths and weaknesses of Yemeni universities within the global higher education landscape. Furthermore, this study aims to encourage Yemeni universities to prioritize the criteria outlined in these rankings and view them as valuable tools for accessing other international rankings. By adopting a proactive approach and aligning their practices with the requirements of these rankings, Yemeni universities can enhance their visibility, attract international collaborations, and improve their overall academic reputation. To accomplish these objectives, this research will delve into the specific criteria and application processes required for Yemeni universities to

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[16] https://www.elsevier.com/academic-and-government/university-rankings-guide

participate in these rankings. It will also examine the rankings already achieved by Yemeni universities, providing a comprehensive assessment of their current standing. By gaining a deeper understanding of the rankings of Yemeni universities, this study seeks to contribute to the larger discourse on improving the quality of higher education in Yemen. The findings of this research can guide university administrators, policymakers, and other stakeholders in formulating strategies to enhance the academic performance and international competitiveness of Yemeni universities.

The research problem is that the development of higher education has led to the emergence of international university rankings, which serve as indicators of the quality of education. Yemeni universities strive to enter these rankings and improve their positions. The research aims to answer the following questions:

- What are the criteria for entering international rankings, such as QS, ARWU, WEBOMETRICS, THE, and SCIMAGOI (SIR), and how are they applied by universities in Yemen?

- What are the ranks achieved by Yemeni universities in international rankings such as QS, ARWU, WEBOMETRICS, THE, and SCIMAGOI (SIR)? The goal is to understand the importance and impact of these rankings on improving the quality of higher education in Yemen.

The importance of this paper lies in its ability to provide university administrators in Yemen with an understanding of the criteria for international rankings such as QS, ARWU, WEBOMETRICS, THE, and SCIMAGOI (SIR), as well as the ranks achieved by Yemeni universities. This will allow them to recognize the importance and impact of these rankings on improving the quality of higher education at their universities. The paper aims to encourage Yemeni universities to pay attention to these international ranking criteria and consider them a gateway to entering other international rankings.

The paper aims to achieve the following objectives:

• To identify the criteria for entering international rankings, such as QS, ARWU, WEBOMETRICS, THE, and SCIMAGOI (SIR), and understand how they are applied by universities.

• To examine the ranks achieved by universities in Yemen in international rankings such as QS, ARWU, WEBOMETRICS, THE, and SCIMAGOI (SIR)

• To compare these rankings based on their indicators and weights.

• To provide recommendations for universities in Yemen based on the findings of the study.

The remainder of this paper is organized as follows: Section II provides an overview of previous literature on the topic; Section III explains the methodology; Section IV presents the investigation of the rankings of Yemeni universities and the study findings; and the final section concludes the paper.

I. **LITERATURE REVIEW**

In this section, let's have a look at the analytical study of **QS, ARWU, WEBOMETRICS, THE,** and **SIR**. In [1], the data used in the study is **SciVal data** from the **Scopus database**. This data was used to analyze the publication performance and the role of mentors at four Hungarian universities that are ranked in the QS rankings by subject. The methods used in the study include analyzing the publication performance and the role of mentors at four Hungarian universities that are ranked in the QS rankings by subject. The study also proposes a formula to calculate the vulnerability of the universities in the event of losing their mentors. The study aims to investigate the impact of mentors on the scientific competitiveness and ranking position of four Hungarian universities. The study identifies the topic clusters and topics that contribute to the publication output and citation impact of each university and assesses the risk level of losing mentors based on their age and contribution. The study also suggests some strategic implications for the universities to maintain and improve their ranking performance. In [2], the study uses a statistical analysis of a survey applied to 189 officials of various positions from higher education institutions, of which 41.2% correspond to Venezuela and 58.8% to Chile, who make up a total of 33 institutions between both countries. The survey measures the perception of nine dimensions and four context variables that use university rankings and how they influence institutional performance. The data used in the study is obtained from the survey responses of the officials, who rated the importance of each dimension and context variable on a Likert scale from 1 to 5. The data was analyzed using SPSS software and non-parametric tests such as U Mann-Whitney and Kruskal-Wallis. The study aims to comparatively analyze the perceptions that experts from universities in Chile and Venezuela have regarding university rankings and their impact on institutional performance. The study identifies the dimensions and context variables that are most relevant for the evaluation and positioning of the universities and examines the differences by country, type of institution, position, seniority, age, and gender of the respondents. The study also suggests some strategic implications for the universities to improve their ranking performance. In [3], the data used in the study are the 2014 QS World University Rankings by Mathematics subject, obtained from the QS official website. The data consist of the overall score and the four variables for each university. The study uses a hierarchical cluster analysis with Euclidean distance and average linkage to group the top 200 universities in mathematics based on four variables: academic reputation, employer reputation, citation per paper, and H-index citations. The study also uses the cophenetic correlation

coefficient to compare different clustering methods and evaluate the agreement between cluster analysis and QS rankings. The study aims to rank the universities using cluster analysis and to provide a different perspective from the existing QS ranking technique. The study identifies the natural clusters of the universities based on their similarities in mathematics and suggests that the distance between universities can be used as an alternative measure to rank them. The study also verifies the strong correlation between the overall score and the distance from the top-ranked university. In [4], the study used data from various sources, such as the official websites of universities, national agencies, metric databases, search engines, and surveys. The study covered 154 universities in Nigeria, including federal, state, and private universities. The study used a web crawling algorithm to extract data from university websites and other sources, and then aggregated nine existing ranking systems to form a unified system. The study also assigned percentage weights to 17 criteria based on their relevance and importance for ranking universities in developing nations.   The study aimed to develop a purpose-built web ranking system for tertiary institutions in developing nations, using Nigeria as a case study. The study compared the results of the proposed ranking system with other existing ranking systems and found that the proposed system gave a better and more reliable ranking result for universities in developing nations. The study also suggested some recommendations for improving the quality and visibility of universities in developing nations. In [5], Bibliometric data from Thomson ISI, ARC, ERIH, Melbourne Institute and other sources; survey data from academic peers, funding agencies, subject associations and research centers; outlet ranking lists from various disciplines. Review of existing ranking systems and their limitations for HASS disciplines; analysis of indicators such as citation analysis and tiered outlets; discussion of the Australian Research Quality Framework (RQF) and its implications for HASS. Study description: The study focuses on the exclusion of HASS from university and discipline cluster ranking systems and examines some ways to address it. It argues that HASS disciplines need to develop and agree on suitable metrics that reflect their diversity and quality of research outputs. It draws on the Australian experience of introducing a new RQF that incorporates tiered outlets for all disciplines. In [6], Critical policy analysis and affect theories applied to publicly available texts from two commercial rankers (THE and QS). The study explored how THE and QS utilized emoscapes (affective landscapes) in global higher education policy. It demonstrated how rankers capitalized on stakeholders' emotions, desires, moods, and attitudes through affective infrastructures. The study emphasized the role of emoscapes in framing policy issues and promoting policy solutions. In [7], the study used an ordinary least squares model with ResearchGate Score as the dependent variable. It considered four explanatory variables: postgraduate programs, teacher's profiles in Google Scholar, institutional YouTube channel subscribers, and GDP per capita of the university's origin country. The sample consisted of the first

100 Latin American universities of the Webometrics Ranking. The study aimed to identify the variables influencing ResearchGate Score, which measures the scientific reputation and activity of researchers and institutions. The significant variables were found to be the number of postgraduate programs, teacher's profiles in Google Scholar, and the GDP per capita of the university's origin country. However, the number of subscribers to the institutional YouTube channel had a negative impact on the ResearchGate Score. In [8], the study employed a Gaussian Mixture Model (GMM) to cluster universities using the 2022 QS World University Ranking dataset. It utilized four ranking indicators: academic reputation score, faculty-student score, citation per faculty score, and international student score. om the official website of the 2022 QS World University Ranking. The sample included 1300 universities from various regions and countries. The study aimed to provide a fresh perspective on university rankings beyond the overall score. It identified four distinct clusters of universities with varied characteristics and performance in the ranking indicators. The study also discussed the implications of these clustering results for university managers and policymakers. In [9], the study critically analyzed three global university rankings (ARWU, QS, and THE) and their parameters, methods, data sources, and inconsistencies. It employed correlation analysis, case studies, and examples to illustrate the weaknesses and potential abuses of these rankings Data used from the official websites of the three ranking organizations and other sources such as SciVal, Wikipedia and Wikiwand. The sample consisted of the universities that appeared in all three rankings for the year 2017. The study examined the problems and challenges of university ranking systems and their impact on university policies and practices. It revealed that rankings prioritize quantity over quality, tolerate academic misconduct, exhibit bias, and lack transparency. The study suggested measures to improve the rankings and emphasized the importance of cautious usage. In [10], the study compared eight global university rankings (WR, THE, QS, ARWU, HEEACT, Leiden, URAP, and SIR) for the Mediterranean and Black Sea regions using three analytical procedures. These procedures included constructing matrices of university and country entries in the rankings, calculating proximity indicators, and performing correlation analysis using data from the official websites of the eight ranking organizations for the year 2011. The sample consisted of 29 countries and their universities in the region. The study aimed to develop a quantitative methodology for comparing global university rankings using spatial analysis. The findings indicated that Italy, Spain, and France had the highest number of university entries in the rankings, followed by Israel, Greece, Turkey, and Russia. Additionally, the study revealed a high correlation among the rankings. In [11], the study used data related to higher education systems from various sources to perform the ranking and analysis. The study utilizes a ranking methodology to evaluate and rank 94 higher education systems. It also employs Pearson coefficients of skewness and kurtosis calculation to

analyze global inequalities in higher education. The study analyzed global higher education systems' competitive positioning, identifying leaders, followers, and underperformers through cluster analysis. It discussed inequalities in enrollment rates, research quality, and university-industry collaboration. Enhancing quality assurance systems in developing countries was emphasized for improved competitiveness. The authors anticipated increased university specialization and their role in national innovation systems. In [12], the study utilized the numerical values of criteria from the QS World University Rankings and Times Higher Education rankings. The analysis focused on the Top 50 universities according to the QS ranking. The study utilized clustering (k-means) and classification processing (decision trees) as methods of analysis. The study identified factors determining the leadership of top universities in international rankings. It analyzed QS and Times Higher Education criteria, categorized universities into clusters, and determined influential criteria combinations. The findings serve as guidelines for improving rankings.

II. Methodology

Universities and educational institutions play a crucial role in higher education, and assessing the quality and ranking of these institutions is of paramount importance to students, parents, and the academic community. Various methodologies and indicators are available for evaluating and ranking universities, and among these well-known methodologies are **QS, ARWU, WEBOMETRICS, THE,** and **SIR**. This research aims to conduct an analytical study of these different methodologies with the goal of understanding, analyzing, and comparing them. The research focuses on analyzing the foundations and criteria used in these methodologies, in addition to evaluating the impact of each methodology on university rankings and positioning. In this section, we list the best university rankings in the world as follows:

1- Quacquarelli Symonds (QS)

Quacquarelli Symonds (QS)[17] is a global higher education ranking system that evaluates universities based on a range of criteria. These criteria include academic reputation, employer reputation, faculty/student ratio, citations per faculty, international faculty ratio, and international student ratio. The QS ranking system is widely recognized and respected by universities and employers around the world. It provides valuable information about the quality of education and research at universities and can help students make informed decisions about where to study. The table 1 shows the approved indicators in QS.

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[17] https://www.topuniversities.com/qs-world-university-rankings

Table 1. Rating indicators adopted in QS.

No	Criteria	Indicators	Weight [15]
1	Academic Reputation	This measures a university's reputation among academics worldwide.	40%
2	Faculty/Student Ratio	This measures the number of academic staff relative to the number of students, and is used as an indicator of teaching quality.	20%
3	Citations per Faculty	This measures the number of citations received by a university's research papers, normalized by the number of academic staff at the university.	20%
4	Employer Reputation	This measures a university's reputation among employers worldwide.	10%
5	International Faculty Ratio	This measures the proportion of international academic staff at a university.	5%
6	International Student Ratio	This measures the proportion of international students at a university.	5%

2- Times Higher Education (THE)

THE[18] is another global university ranking system that evaluates universities based on a range of criteria. These criteria include teaching, research, citations, international outlook, and industry income. THE ranking system is widely recognized and respected by universities and employers around the world. It provides valuable information about the quality of education and research at universities and can help students make informed decisions about where to study. It evaluates universities based on five criteria. Table 2 shows the approved indicators in THE.

Table 2. Rating indicators adopted in THE.

No	Criteria	Indicators	Weight [15]
1	Teaching	This measures the learning environment and the quality of teaching at a university.	30%
2	Research	This measures the volume, income, and reputation of a university's research.	30%
3	Citations	This measures the influence of a university's research by counting the number of times its research papers are cited by other researchers.	30%
4	International Outlook	This measures the proportion of international students and staff at a university, as well as the university's international collaborations.	7.5%
5	Industry Income	This measures a university's ability to transfer knowledge to industry and attract research funding from businesses. Is there anything else you would like to	2.5%

3- SCImago Institutions Rankings (SIR)

SIR[19] is a classification of academic and research-related institutions ranked by a composite indicator that combines three different sets of indicators based on research performance, innovation outputs and societal impact measured by their web visibility. The SIR focuses on research institutions, universities, hospitals, government agencies, and private non-profit organizations. The ranking is based on a number of indicators, including the number of publications, citations, international collaboration, normalized impact and others. Table 3 shows the approved indicators in SIR.

Table 3 Rating indicators adopted in SIR.

No	Criteria	Indicators
1	Research Performance	This criterion evaluates the research output of the institution and includes elements such as the number of published articles, citation counts, participation in peer-reviewed scientific journals, and research collaboration with other entities.
2	Innovation Outputs	These indicators consider non-academic activities that promote innovation and technological development. They may include factors such as patent rates, scientific investigations, collaboration with industry, and technology transfer.
3	Societal Impact Measured by Web Visibility	The social impact of an institution is assessed through factors such as the dissemination of scientific publications on the web, social interaction, and the digital impact achieved by the institution.

4- Webometrics

Webometrics is the largest academic ranking of higher education institutions. It is published by the Cybermetrics Lab, a research group of the Spanish National Research Council (CSIC), the largest public research body in Spain. The ranking aims to promote academic web presence and support open access initiatives. It provides web indicators for more than 20,000 universities worldwide, with the top 16,000 being published. The ranking is based on a composite indicator that takes into account both the volume of the web content (size, visibility, rich files) and the impact and quality of these contents (scholarship, excellence) measured by their visibility and impact [16]. The ranking is updated every January and July. Table 4 shows the approved indicators in webometrics.

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[19] https://www.shanghairanking.com/

Table 4. Rating indicators adopted in Webometrics.

No	Criteria	Indicators	Weight [15]
1	Size	These measures the number of pages automatically linked in a single site.	20%
2	Rich Files	This measures the number of rich files (documents and textual information) that are present in the search engine and belong to the university's site.	15%
3	Scholar	This measures the scientific material in Google Scholar, including peer-reviewed research, reports, dissertations, abstracts in various scientific topics, as well as images, films, maps and others published electronically under the domain of the university's site.	15%
4	Visibility	This measures the visibility of a university's site on the internet through search engines and its appearance in these engines	50%

5- Acdemic Ranking of World Universities (ARWU)

ARWU, also known as the **Shanghai** Ranking, is a ranking of universities published by the Shanghai Ranking Consultancy. The ranking uses six objective indicators to rank world universities. Table 5 shows the approved indicators in ARWU.

. Table 5. Rating indicators adopted in ARWU.

No	Criteria	Indicators	Weight [15]
1	Number of alumni and staff winning Nobel Prizes and Fields Medals	This measures the number of alumni and staff from a university who have won Nobel Prizes or Fields Medals.	10%
2	Number of highly cited researchers selected by Clarivate	This measures the number of researchers from a university who are among the most highly cited in their fields.	20%
3	Number of articles published in journals of Nature and Science	This measures the number of articles published by a university's researchers in the journals Nature and Science.	20%
4	Number of articles indexed in Science Citation Index Expanded™ and Social Sciences Citation Index™ in the Web of Science™	This measures the number of articles published by a university's researchers that are indexed in these two databases.	20%
5	Per capita performance of a university	This measures the overall performance of a university, normalized by its size.	10%

6- AD Scientific

They based ranking system on the number of meritorious scientists. Four criteria are used to rank the countries. The first one is the number of scientists in the top 3 % list. The second criterion is the number of scientists in the top 10%, Top 20%, Top 40%, top 60%, and top 80% list. The third one is the number of scientists listed in the AD Scientific Index. In the case of equalities after applying all these three criteria, the world rank of the meritorious scientist of that country is used. Table 6 shows the approved indicators in AD Scientific Index[20].

Table 6. Rating indicators adopted in AD Scientific Index.

No	Criteria	Indicators	Weight
1	Number of scientists in the top 3% list:	This criterion focuses on the number of scientists from each university who fall within the top 3% in terms of their scientific achievements. These achievements could include publications, citations, research impact, or other relevant factors. The higher the number of scientists in this elite category, the higher the ranking for the university.	3%
2	Number of scientists in various percentile lists:	AD Scientific considers the number of scientists from each university who are ranked within different percentile categories, including the top 10%, top 20%, top 40%, top 60%, and top 80%. This criterion provides a broader assessment of the distribution of meritorious scientists across different performance levels.	top 10%, top 20%, top 40%, top 60%, and top 80%
3	Number of scientists listed in the AD Scientific Index:	AD Scientific likely maintains its own index or database of scientists, which includes individuals who have demonstrated significant contributions in their respective fields. This criterion assesses the number of scientists from each university who are listed in the AD Scientific Index.	
4	World rank of meritorious scientists:	In the event of ties or equalities after applying the previous three criteria, AD Scientific uses the world rank of the meritorious scientists from each university to break the tie. This means that if two or more universities have an equal number of highly accomplished scientists, the overall world ranking of those scientists will be taken into account to determine the ranking of the respective universities.	20%

7- EduRank

EduRank is an independent metric-based ranking of 14,131 universities from 183 countries. They utilize the world's largest scholarly papers database with 83,166,817 scientific publications and 1,801,313,576 citations to rank universities across 246 research topics. In the overall rankings, they add non-academic prominence and alumni popularity indicators. Always check official university websites for the latest enrollment information. Table 7 shows the approved indicators in EduRank[21].

Table 7. Rating indicators adopted in EduRank.

No	Criteria	Indicators	Weight
1	Research performance.	We use the OpenAlex database as a proxy to retrieve scientific publications and links between them (citations). Rather than just summarizing them, we build a graph with publications as nodes and citations as edges to calculate the weight of each publication. Then we adjust that weight for the publication date and share of university representatives in the list of authors.	45%
2	Non-academic prominence.	They use the same approach that Google and other modern search engines use to calculate the reputation of individual web pages - backlinks to a university from other sites. We use the data from Ahrefs as a source with the largest available index of pages and links.	45%
3	Alumni score.	The indicator reflects the combined number of page views that a university's graduates and other affiliated individuals have on all 43 language versions of Wikipedia.	10%

8- uniRank

uniRank's university ranking utilizes a simple and transparent methodology to evaluate universities worldwide. However, it's important to note that uniRank's ranking is not a comprehensive alternative to more complex and comprehensive rankings such as QS or Times Higher Education. uniRank's ranking is based on the following indicators: The current uniRank University Ranking™ is based upon an algorithm including four unbiased and independent web metrics extracted from three different web intelligence sources:.[25][24][23][22] Table 8 shows the approved indicators in uniRank.

[21] https://edurank.org/geo/ye/

[22] https://majestic.com/help/glossary#RefDomain

[23] https://support.similarweb.com/hc/en-us/articles/213452305-Rank

[24] https://moz.com/learn/seo/domain-authority

[25] https://www.4icu.org/ye/universities/

Table 8. Rating indicators adopted in uniRank.

No	Criteria	Indicators
1	Global Ranking:	Universities are ranked based on their overall global position. This is determined using a wide range of available online sources, including academic databases and official university websites.
2	Institutional Presence:	The online presence of the university and its institutional connections with other academic and research entities are taken into consideration.
3	Accreditation:	The official accreditation of the university by recognized accrediting bodies is considered. This includes accreditation from government bodies, professional bodies, and reputable academic organizations.

uniRank aims to provide a non-academic League Table of the top Yemeni Universities and Colleges based on valid, unbiased and non-influenceable web metrics provided by independent web intelligence sources, rather than data submitted by the Universities themselves.

9- CWUR

The Center for World University Rankings (**CWUR**) is responsible for publishing a unique global university ranking that evaluates the quality of education, alumni employment, faculty excellence, and research performance. What sets CWUR apart is that it doesn't rely on surveys or data submissions from universities. CWUR utilizes seven objective and reliable indicators categorized into four areas to determine the rankings of universities worldwide. The Center for World University Rankings grades universities on four factors without relying on surveys and university data submissions: education (25%), employability (25%), faculty (10%), and research (40%). This year, 62 million outcome-based data points were analyzed for the rankings. Table 9 shows the approved indicators in CWUR.

Table 9. Rating indicators adopted in CWUR.

No	Criteria	Indicators	Weight
1	Education:	This criterion evaluates the academic achievements of a university's alumni. It considers the number of alumni who have earned prestigious academic distinctions in relation to the size of the university, accounting for 25% of the ranking.	25%
2	Employability	The employability category assesses the professional success of a university's alumni. It examines the number of alumni who have attained top positions in major companies relative to the university's size, contributing to 25% of the ranking.	25%
3	Faculty:	This indicator focuses on the quality of the university's faculty members. It takes into	

No	Criteria	Indicators	Weight
		account the number of faculties who have received prestigious academic distinctions, contributing to 10% of the ranking.	10%
4	Research	**Research Output:** This aspect measures the total number of research papers produced by the university, accounting for 10% of the ranking. • **High-Quality Publications:** It considers the number of research papers published in top-tier journals, indicating the impact and quality of the university's research. This category contributes to 10% of the ranking. • **Influence**: The influence category evaluates the number of research papers published in highly influential journals, signifying the reach and significance of the university's research. It accounts for 10% of the ranking. • **Citations**: This criterion measures the number of highly-cited research papers affiliated with the university, reflecting the impact and recognition of its research. It contributes to 10% of the ranking.	40%

By considering these indicators, CWUR provides a comprehensive assessment of universities worldwide, allowing individuals to gauge the quality of education, alumni success, faculty excellence, and research performance across different institutions[26].

10- Leiden Ranking

The **Leiden**[27] Ranking is a ranking that focuses on the research performance of universities. It is developed by the Leiden Centre for Science and Technology Studies at Leiden University in the Netherlands. Here is an overview of the methodologies used in the Leiden Ranking:

The CWTS Leiden Ranking 2023 offers a sophisticated set of bibliometric indicators that provide statistics at the level of universities on scientific impact, collaboration, open access publishing, and gender diversity. The indicators available in the Leiden Ranking are discussed in detail below.

The Leiden Ranking aims to provide a comprehensive and objective view of the research performance of universities worldwide. While it primarily focuses on scientific research, it offers a greater understanding of international collaboration and the scientific impact of universities. It's important to note that there may be updates and changes to the ranking methodology over time. Interested individuals can refer to the official Leiden Ranking website for up-to-date information on the methodologies used[28]. Table 10 shows the approved indicators in Leiden.

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[26] https://cwur.org/2023.php

[27] https://www.leidenranking.com/

[28] https://www.leidenranking.com/ranking/2023/list

Table 10. Rating indicators adopted in Leiden.

No	Criteria	Indicators
1	Core Indicators:	The Leiden Ranking uses a set of core indicators to measure the research performance of universities, including: • Number of research publications in scientific journals. • Number of citations received by these publications from other researchers. • Number of collaborative research between the university and other researchers or institutions.
2	Global Performance Analysis:	University performance is analyzed based on global data available in scientific databases such as Scopus. This data is used to analyze the research and collaborative performance of universities at the global level.
3	Achieved Performance:	Universities are ranked based on their actual and achieved research performance, rather than relying on factors such as university reputation or financial resources.

11- NTU Ranking

NTU Ranking (Nanyang Technological University Ranking) is a global university ranking that relies on several criteria to evaluate the quality of scientific research and academic performance. The ranking focuses particularly on scientific, technological, and engineering fields. Table 11 shows the approved indicators in NTU. Here are some key criteria used in the NTU Ranking:

Table 11. Rating indicators adopted in NTU.

No	Criteria	Indicators
1	Research Productivity:	Measures the number of research papers published in prestigious scientific journals and the level of citations received by that research.
2	Research Performance:	Measures various indicators related to published research and scientific impact, such as citation counts and the H-index.
3	Research Quality:	Relies on the ranking of journals where research papers are published and their inclusion in prestigious lists like the Journal Impact Factor.
4	International Collaboration:	Measures the extent of research collaboration between universities and researchers from different countries, such as the number of co-authors from different countries in research papers.
5	Innovation and Societal Impact:	Measures the level of innovation and the economic and social impact achieved by the research, such as the number of patents and the societal relevance of the research.

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Yemeni universities can consider: Research Productivity, Faculty Quality and Development, International Collaboration, Student Success and Employability, Infrastructure and Facilities, Quality Assurance and Accreditation, Visibility and Outreach, and Continuous Improvement. It is important to note that rankings should not be the sole focus of Yemeni universities. The ultimate goal should be to provide quality education, advance knowledge, and contribute to societal development. Aligning practices with ranking requirements should be seen as a means to enhance overall academic excellence and reputation, rather than an end in itself.

1- Quacquarelli Symonds (QS)

According to the specified text you provided, it appears that there are two Yemeni universities listed in the QS World University Rankings. The **University of Science and Technology**, Yemen, ranks 151–170, while **Thamar University** in Thamar, Yemen, ranks 171-200. This information is taken from the current web page, which has changed to a page dedicated to university rankings.

2- SCImago Institutions Rankings (SIR)

According to the current web page context, the ranking of Yemeni universities for the year 2023 according to the SCImago Institutions Rankings (SIR) criteria is as follows:

- **Ibb University** is the first ranked university in Yemen, with a total score of **15.4** and a world rank of **3130**. It has the third highest score in research performance among the Yemeni universities.

- **Sana'a University** is the second ranked university in Yemen, with a total score of **14.9** and a world rank of **3190**. It has the highest scores in research performance and societal impact among the Yemeni universities.

- **Taiz University** is the third ranked university in Yemen, with a total score of **14.2** and a world rank of **3251**. It has the second highest score in research performance among the Yemeni universities.

- **Hadhramout University** is the fourth ranked university in Yemen, with a total score of **13.8** and a world rank of **3296**. It has the second highest score in innovation outputs among the Yemeni universities.

- **University of Aden** is the fifth ranked university in Yemen, with a total score of **13.5** and a world rank of **3327**. It has the highest score in innovation outputs among the Yemeni universities.

- **Hodeidah University** is the sixth ranked university in Yemen, with a total score of **12.9** and a world rank of **3404**. It has the fourth highest score in research performance among the Yemeni universities.

- **Thamar University** is the seventh ranked university in Yemen, with a total score of **12.3** and a world rank of **3479**. It has the third highest score in innovation outputs among the Yemeni universities.

- **University of Science and Technology (Yemen)** is the eighth ranked university in Yemen, with a total score of **11.6** and a world rank of **3568**. It has the fifth highest score in research performance among the Yemeni universities.

Table 13. Sample rankings list of Yemeni universities using SIR

No	University name	University in Arabic	total score	Rankings 2023
1	**Ibb University**	جامعة إب	**15.4**	**1**
2	**Sana'a University**	جامعة صنعاء	**14.9**	**2**
3	Taiz University	جامعة تـعـز	**14.2**	3
4	**Hadhramout University**	جامعة حضرموت	**13.8**	4
5	**University of Aden**	جامعة عـدن	**13.5**	5
6	**Hodeidah University**	جامعة الحديدة	**12.9**	6
7	**Thamar University**	جامعة ذمـار	**12.3**	7
8	**University of Science and Technology**	جامعة العلوم والتكنولوجيا	**11.6**	8

3- Webometrics

According to the current web page context, the top Ten Yemeni Universities according to the webometrics criteria are:

- **Queen Arwa University** is ranked **9788** in the world and has the best scores in size, visibility, and rich files among the Yemeni universities.

- **University of Science and Technology Yemen Aden** is ranked **3701** in the world and has the best score in scholar among the Yemeni universities.

- **Future University Yemen** is ranked **13264** in the world and has the second best score in visibility among the Yemeni universities.

- **Al Razi University Yemen** is ranked **10944** in the world and has the third best score in visibility among the Yemeni universities.

- **Al Nasser University** is ranked **15275** in the world and has the fourth best score in visibility among the Yemeni universities.

- **University of Aden** is ranked **5084** in the world and has the second best score in scholar among the Yemeni universities.

- **Sana'a University** is ranked **3897** in the world and has the third best score in scholar among the Yemeni universities.

- **Al Ahgaff University** is ranked **17568** in the world and has a good score in visibility among the Yemeni universities.

- **Saba University** is ranked **9000** in the world and has a good score in visibility among the Yemeni universities.

- **University of Science and Technology Yemen Sana'a** is ranked **15914** in the world and has a good score in visibility among the Yemeni universities.

Table 13. Sample rankings list of Yemeni universities using webometrics.

No	University name	University in Arabic	total score	Rankings 2023
1	**Queen Arwa University**	جامعة الملكة أروى	**15.4**	**1**
2	**University of Science and Technology**	جامعة العلوم والتكنولوجيا	**14.9**	**2**
3	**Future University**	جامعة المستقبل	**14.2**	3
4	**Al Razi University**	جامعة الرازي	**13.8**	4
5	**Al Nasser University**	جامعة الناصر	**13.5**	5
6	**University of Aden**	جامعة عدن	**12.9**	6
7	Sana'a University	جامعة صنعاء	**12.3**	7
8	**Al Ahgaff University**	جامعة حضرموت	**13.8**	4
9	**University**	جامعة الحديدة	**12.9**	6
10	**University**	جامعة تعـز	**14.2**	3

4- Times Higher Education (THE)

Yemeni universities are not available in this Ranking.

5- Academic Ranking of World Universities (ARWU)

Yemeni universities are not available in this Ranking.

6- AD Scientific

They based ranking system on the number of meritorious scientists. Four criteria are used to rank the countries.

Table 14. Sample rankings list of Yemeni universities using AD Scientific

No	University name	University in Arabic	Rankings 2023
1	Sana'a University	جامعة صنعاء	1
2	Taiz University	جامعة تعز	2
3	Thamar University	جامعة ذمار	3
4	Hadhramout University	جامعة حضرموت	4
5	Ibb University	جامعة إب	5
6	University of Aden	جامعة عدن	6
7	Hodeidah University	جامعة الحديدة	7
8	Colleges Sana'a	كلية المجتمع صنعاء	8
9	Queen Arwa University	جامعة الملكة أروى	9
10	Azal University of Human Development	جامعة ازال	10

7- EduRank

Here are the top 10 universities in Yemen ranked by EduRank based on the adopted indicators. According to the analysis, Sana'a University takes the top spot in the ranking, followed by the University of Aden and the University of Science and Technology - Yemen. These universities have a long history of establishment and enjoy widespread recognition in Yemen and globally[31].

Table 15. Sample rankings list of Yemeni universities using EduRank

No	University name	University in Arabic	Rankings 2023
1	Sana'a University	جامعة صنعاء	1
2	University of Aden	جامعة عدن	2
3	University of Science and Technology Yemen	جامعة العلوم والتكنولوجيا	3
4	Taiz University	جامعة تعز	4
5	Thamar University	جامعة ذمار	5
6	Hodeidah University	جامعة الحديدة	6
7	Hadhramout University	جامعة حضرموت	7
8	Ibb University	جامعة إب	8
9	Queen Arwa University	جامعة الملكة أروى	9
10	Al Razi University	جامعة الرازي	10

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[31] https://edurank.org/geo/ye/

8- uniRank

uniRank University Ranking lists the top 10 Yemeni higher education institutions that meet the uniRank selection criteria. uniRank aims to provide a non-academic League Table of the top Yemeni universities and colleges based on valid, unbiased and non-influenceable web metrics provided by independent web intelligence sources, rather than data submitted by the universities themselves.

Table 16 Sample rankings list of Yemeni universities using uniRank

No	University name	University in Arabic	Rankings 2023
1	University of Science and Technology Yemen	جامعة العلوم والتكنولوجيا	1
2	Queen Arwa University	جامعة الملكة أروى	2
3	Sana'a University	جامعة صنعاء	3
4	Lebanese International University Yemen	الجامعة اللبنانية الدولية	4
5	Al Razi University	جامعة الرازي	5
6	Al-Ahgaff University	جامعة الاحقاف	6
7	Emirates International University	جامعة الإماراتية الدولية	7
8	Hadhramout University	جامعة حضرموت	8
9	Saba University	جامعة سباء	9
10	University of Aden	جامعة عدن	10

9- CWUR

Yemeni universities are not available in this Ranking.

10- Leiden Ranking

Yemeni universities are not available in this Ranking.

11- NTU Ranking

Yemeni universities are not available in this Ranking.

12- Yemen research

The researchers extracted study data from the Information Technology Center at the Ministry of Higher Education and Scientific Research in Yemen, as well as the "AD SCIENTIFIC INDEX" world ranking dataset, to identify the most important indicators for ranking Yemeni universities. The research identified seven indicators for 78 Yemeni universities, both governmental and private, and used cluster analysis to reveal the best performers. The results showed that Sana'a University ranked first, followed by the University of Aden. The study recommends that Yemeni universities align their goals with the most important indicators based on

international strategies and support scientific research through the support of scholars. Table 17 provides information about the clusters to which each university belongs, as well as their respective rankings for the year 2023. Universities like **Sana'a University** and **Aden University**, belonging to Cluster 0, occupy the top positions. Similarly, universities in Clusters 1, 2, and 3 also have notable rankings within the Yemeni context.

Table 17. Sample rankings list of Yemeni universities using Yemen research.

No	University name	University in Arabic	Cluster	Rankings 2023
1	Sana'a University	جامعة صنعاء	0	1
2	Aden University	جامعة عدن	0	2
3	Ibb University	جامعة إب	1	3
4	Hodeidah University	جامعة الحديدة	1	4
5	Hadhramout University	جامعة حضرموت	1	5
6	Sana'a Community College	كلية المجتمع صنعاء	1	6
7	University of Science and Technology	جامعة العلوم والتكنولوجيا	1	7
8	Taiz University	جامعة تعز	2	8
9	Thamar University	جامعة ذمار	2	9
10	Al-Razi University	جامعة الرازي	3	10

IV. **conclusion**

The study focuses on Yemeni universities and their potential to enter and improve their positions in international rankings. The research examines five prominent international rankings: **QS, ARWU, WEBOMETRICS, THE,** and **SIR**. The objective of the study is to encourage Yemeni universities to prioritize the criteria outlined in these rankings and consider them as a pathway to access other international rankings. The research addresses the challenge of understanding the criteria and application process required for Yemeni universities to participate in these rankings, as well as the rankings they have achieved. The study emphasizes the importance of providing Yemeni university administrators with valuable insights into the criteria used for international rankings and the rankings obtained by Yemeni universities. The findings of the study reveal that two Yemeni universities are listed in the **QS**. The **University of Science and Technology**, Yemen, ranks 151-170, while **Thamar University** in Thamar, Yemen, ranks 171-200.

Additionally, the findings of the study reveal the ranking positions of two Yemeni universities in the **SCImago** Institutions Rankings (**SIR**) for 2023:

- **Ibb University** secures the highest position among Yemeni universities with an overall score of 15.4 and a world rank of 3130.

- **Sana'a University** closely follows , ranking second among Yemeni universities with a total score of 14.9 and a world rank of 3190.

The study highlights the importance of international rankings for Yemeni universities and their potential to improve their positions. **Ibb University** and **Sana'a University** have achieved notable rankings in the SCImago Institutions Rankings for 2023 among Yemeni universities. Yemeni university administrators can use the insights provided by the study to understand the criteria used for rankings and work towards enhancing the quality of higher education in their institutions. The findings of the study offer Yemeni university leadership a valuable benchmark to evaluate their institutions' global performance. These rankings shed light on the current positions of the universities and indicate areas where improvements can be made.

University administrators can carefully examine the ranking criteria and identify specific areas that require enhancement to elevate the quality of higher education within their institutions. By gaining an understanding of the methodologies and indicators utilized in these rankings, leadership can align their strategic goals and initiatives to address the identified areas of improvement. This may involve measures such as boosting research output, enhancing faculty quality, improving student satisfaction, fostering international collaborations, or focusing on other factors that contribute to higher rankings. The study's findings provide valuable insights into the strengths and weaknesses of Yemeni universities compared to their global counterparts, empowering leadership to make informed decisions and implement strategies aimed at enhancing their institutions' overall standing.

Regarding potential future work, some suggestions are:

- Conducting a comparative analysis of the ranking criteria and methodologies to identify common areas for improvement across different rankings.

- Investigating the specific strengths and weaknesses of Ibb University and Sanaa University in relation to the criteria used in the SCImago Institutions Rankings and developing strategies to further enhance their performance.

- Exploring the impact of improved rankings on the reputation, funding opportunities, and international collaborations of Yemeni universities.

- Conducting surveys or interviews with Yemeni university stakeholders to gather their perspectives on the rankings and their potential implications for the higher education sector in Yemen.

These suggestions can help expand on the study's findings and contribute to the ongoing efforts to improve the rankings and overall quality of Yemeni universities. The original approach in ranking Yemeni institutions is crucial as it assists scholars and students in finding educational institutions that align with their specific academic needs.

References

1. Ahmed, M. R. A. (2025). Accreditation and Quality Assurance: Exploring Impact and Assessing Institutional Change in the US and Saudi Arabian Higher Education Institutions. *Arts for Linguistic & Literary Studies*, 7(1), 626–639. https://doi.org/10.53286/arts.v7i1.2419

2. Alshammari, A., Alshammari, M., & Alshammari, T. (2022). University Rankings and Goals: A Cluster Analysis. In J. Kacprzyk & L. C. Jain (Eds.), Intelligent Systems Reference Library (pp. 1-15). Springer Nature Switzerland AG.

3. Antoniuk, L., Kalenyuk, I., Tsyrkun, O., & Sandul, M. (2019). Rankings in the higher education competitiveness management system. Problems and Perspectives in Management, 17(4), 325-339. doi:10.21511/ppm.17(4).2019.27

4. Chowdhury, A. R., & Rahman, Z. (2021). Global ranking framework & indicators of higher educational institutions: A comparative study. Library Philosophy and Practice (e-journal), 5268.

5. Cunningham, S. D. (2008). University and discipline cluster ranking systems and the humanities, arts and social sciences21. Higher Education in Europe, 33(2), 245-258.

6. Das, S. S., Balasubramanian, P., & Chowdhury, A. R. (2019). Webometrics ranking (WR) of world universities and national institutional ranking framework (NIRF): A comparative study. Journal of Information and Knowledge, 154-158.

7. Gabriel, A., & Aribisala, B. (2020). Automatic ranking of tertiary institutions in developing nations (a case study of Nigeria universities).

8. Ganga-Contreras, F., Suarez-Amaya, W., Valderrama-Hidalgo, C., & Salazar-Botello, C. (2022). University rankings and influence on performance: Comparing perspectives in Chile and Venezuela. RETOS. Revista de Ciencias de la Aministración y Economía, 12(24), 200-210.

9. Gopal, K., & Shitan, M. (2015, May). Cluster analysis of top 200 universities in Mathematics. In 2015 International Symposium on Mathematical Sciences and Computing Research (iSMSC) (pp. 408-413). IEEE.

10. Henao-Rodríguez, C., Lis-Gutiérrez, J. P., Gaitán-Angulo, M., Vásquez, C., Torres, M., & Viloria, A. (2019). Determinants of ResearchGate (RG) Score for the Top100 of Latin American Universities at Webometrics1. In Y. Tan & Y. Shi (Eds.), Data Mining and Big Data (pp. 320-327). Springer Nature Singapore Pte Ltd.

11. Moskovkin, V.M., Pupynina, E.V., Zaitseva, N.P., & Lesovik, R.V. (2013). Methodology for comparative analysis of university rankings, with the Mediterranean and Black Sea region countries taken as an example. Middle-East Journal of Scientific Research, 18(11), 1656-1665.

12. Mussard, M., & James, A. P. (2018). Engineering the global university rankings: Gold standards, limitations and implications1. IEEE Access, 6, 6765-6775.

13. Polyakov, M., Bilozubenko, V., Korneyev, M., & Nebaba, N. (2020). Analysis of key university leadership factors based on their international rankings (QS World University Rankings and Times Higher Education). Problems and Perspectives in Management, 18(4), 142-152. doi:10.21511/ppm.18(4).2020.13.

14. Rafique, T., Awan, M. U., Shafiq, M., & Mahmood, K. (2023). Exploring the role of ranking systems towards university performance improvement: A focus group-based study. Heliyon, 9(10).

15. Salah Al-Hagree; Ayedh Abdulaziz Mohsen et al, Universities the Best Performers: A Cluster Analysis of Yemeni Universities Rankings, 2023 3rd International Conference on Emerging Smart Technologies and Applications (eSmarTA).

16. Sasvári, P., & Urbanovics, A. (2022). Subject Area Risk Assessment of Four Hungarian Universities with a View to the QS University Rankings by Subject. Journal of Data and Information Science, 7(4), 61-80.

17. Shahjahan, R. A., Sonneveldt, E. L., Estera, A. L., & Bae, S. (2020). Emoscapes and commercial university rankers: the role of affect in global higher education policy. Critical Studies in Education. https://doi.org/10.1080/17508487.2020.1748078