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## Ranking of Indian Institution of Technology (IITs) in Global and Indian Ranking system: A Comparative Study

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# **Ranking of Indian Institution of Technology (IITs) in Global and Indian Ranking system: A Comparative Study**

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## ***Abstract***

*Rankings at both the international and national scales are becoming more significant in higher education in every corner of the world. Higher education institutions are ranked in a variety of national as well as global lists. The current study evaluates the academic achievements of Indian Institutes of Technology in national as well as global rankings, including those produced by Quacquarelli Symonds (QS), Times Higher Education (THE), Academic Ranking of World Universities (ARWU), The Centre for World University Rankings (CWUR), UI GreenMetric World University Rankings, National Institutional Ranking Framework (NIRF), and Atal Ranking of Institutions.*

**Keywords:** *Institutional Ranking System, National & Global Ranking, IITs, Comparative Analysis.*

## **Introduction**

Ranking, in general, denotes or defines a position in a hierarchy or scale. In the advanced technology era of the twenty-first century, ranking is at the heart of every industry. Rankings have gained in relevance and spread in previously imagined ways in this society, whether in a national or international education system. Without a doubt, the quality of tertiary education institutions is now heavily influenced by rankings, which influence the attitudes of present and prospective students, parents, employers, and the government, that is why, in the modern era, every higher education seeker, researcher, staff, and faculty wants to admission, join, or associate with high-ranking intuitions.

In addition to determining an institution's position in national or international rankings and the calibre of education it offers, rankings have evolved into a useful tool. Numerous changes are brought about in the realm of higher education (HEI) by rankings. Massive technological, institutional, and cultural shifts are accountable for all of this. Leading universities across the globe that actively compete in these competitions are benefited by these developments since these rankings provide branding, improve organisation and management, and influence partnerships and collaborations. As per the estimation of UNESCO “International university

rankings affect public policy and the choices of students and their families. Rightly or wrongly, they are perceived as a measure of quality and so create intense competition between universities all over the world” In terms of enrolment ratio and student community, Indian HEI is among the largest education systems in the global. With an increasing population and a proliferation of higher education seekers worldwide, Indian HEI needs to expand qualitatively and set a benchmark for others. The rating is an essential instrument for analyzing higher education institutions' performance. Nowadays, most organizations assign both national as well worldwide rankings.

**Table 1: Indian Institute of Technology List**

Sl.No.	Name of the Institutions	Abbreviation	Establish Year	State
1	Indian Institute of Technology Kharagpur	IITKGP	1951	West Bengal
2	Indian Institute of Technology Bombay	IITB	1958	Maharashtra
3	Indian Institute of Technology Madras	IITM	1959	Tamil Nadu
4	Indian Institute of Technology Kanpur	IITK	1959	Uttar Pradesh
5	Indian Institute of Technology Delhi	IITD	1961	Delhi
6	Indian Institute of Technology Guwahati	IITG	1994	Assam
7	Indian Institute of Technology Roorkee	IITR	2001[9]	Uttarakhand
8	Indian Institute of Technology Ropar	IITRPR	2008	Punjab
9	Indian Institute of Technology Bhubaneswar	IITBBS	2008	Odisha
10	Indian Institute of Technology Gandhinagar	IITGN	2008	Gujarat
11	Indian Institute of Technology Hyderabad	IITH	2008	Telangana
12	Indian Institute of Technology Jodhpur	IITJ	2008	Rajasthan
13	Indian Institute of Technology Patna	IITP	2008	Bihar
14	Indian Institute of Technology Indore	IITI	2009	Madhya Pradesh
15	Indian Institute of Technology Mandi	IITMD	2009	Himachal Pradesh
16	Indian Institute of Technology (BHU) Varanasi	IIT (BHU)	2012[10]	Uttar Pradesh
17	Indian Institute of Technology Palakkad	IITPKD	2015	Kerala
18	Indian Institute of Technology	IITTP	2015	Andhra Pradesh

	Tirupati			
19	Indian Institute of Technology (ISM) Dhanbad	IIT (ISM)	2016[12]	Jharkhand
20	Indian Institute of Technology Bhilai	IITBH	2016	Chhattisgarh
21	Indian Institute of Technology Dharwad	IITDH	2016	Karnataka
22	Indian Institute of Technology Jammu	IITJMU	2016	Jammu and Kashmir
23	Indian Institute of Technology Goa	IITGOA	2016	Goa

**Source:** [https://en.wikipedia.org/wiki/Indian\\_Institutes\\_of\\_Technology](https://en.wikipedia.org/wiki/Indian_Institutes_of_Technology)

A total of seven global and national rankings were used in the current study to analyse how the Indian Institute of Technology performed.

### **Literature Review**

According to Allam, Mohammad (2019). Shows the rankings in a methodological context, which is also one of the major reasons for Indian higher education institutions' poor performance in worldwide rankings. The findings of this study demonstrate what the Indian higher education system's values are. This study assists in assessing the metrics used to determine rankings as well as the strengths and weaknesses of Indian HEI. The study of Chettiar, Tamizhchelvan Mottaiya, and Anbalagan, Muthuraj (2021). Comparative analysis of the top 25 Indian institutions as listed on the websites for NIRF, which assesses educational and scientific standards, primarily research performance, and ResearchGate. The study of Khan, Mohammad Shafi (2018). Explain the reviews of India's higher education institutions, their foreign rankings, and the reforms that need to be implemented to improve their international rankings. Despite the fact that India possesses one of the world's largest higher education systems, with premier institutes such as IIT, IIM, NIT, AIIMS, and others, none of the Indian institutions make the top 100 of the world's top-ranking institutions. The study of Cakir, Murat Perit, et al. (2015). This research examines the national and international university rating systems. National rankings include a higher number of indicators that are largely focused on educational and institutional aspects, whereas global ranking systems have fewer indicators that are mostly focused on research performance, according to this study.

### **Objectives of Study**

The primary objectives of the current investigation are:

1. To know the national and international ranking systems
2. To examine the performance of the Indian Institute of Technology in various global rankings
3. Indian Institute of Technology ranking comparative analysis study
4. To research the top ten institutions in the entire ranking system

## Research Data and Methodology

The Descriptive Analytical Method was used in this study. The study's data was derived from the respected involved ranking site. The methodology was chosen to meet the needs of the study's objectives. In the current study, seven national and international rankings were taken into account. The reason for including these rankings is that seven of them are well-known: Times Higher Education (THE) World University Rankings, Quacquarelli Symonds (QS) World University Rankings, Academic Ranking of World Universities (ARWU) (Shanghai Ranking), The Center for World University Rankings (CWUR), UI GreenMetric World University Rankings, National Institutional Ranking Framework (NIRF), and Atal Ranking of Institutions on Innovation Achievements (ARIIA). This study examined all of the ranking data.

### A brief overview of the national as well as global rankings used in the current study

The seven ranks used in this particular research were selected. The total performance of Indian technological organisations is better illustrated by these seven nationwide and globally rankings. Table-2 provides information on seven national and international rankings for the current study.

**Table 2: National and International Rankings list taken into consideration in present study**

SN	Name of the Ranking	Abbreviation	Country	SY	IY	Sources
1	Times Higher Education World University Rankings	THE	United Kingdom (U K)	2010	2022	<a href="https://www.timeshighereducation.com/">https://www.timeshighereducation.com/</a>
2	Quacquarelli Symonds QS World University Rankings	QS	United Kingdom (U K)	2004	2022	<a href="https://www.topuniversities.com/">https://www.topuniversities.com/</a>
3	Academic Ranking of World Universities	ARWU	China	2003 And continue since 2009	2021	<a href="https://www.shanghairanking.com/">https://www.shanghairanking.com/</a>
4	The Center for World University Rankings	CWUR	Saudi Arabia	2012	2021-22	<a href="https://cwur.org/">https://cwur.org/</a>
5	UI GreenMetric World University Rankings	UI	Indonesia	2010	2021	<a href="https://greenmetric.ui.ac.id/">https://greenmetric.ui.ac.id/</a>
6	National Institutional Ranking Framework Indian	NIRF	India	2016	2021	<a href="https://www.nirfindia.org/Home">https://www.nirfindia.org/Home</a>
7	Atal Ranking of Institutions on	ARIIA	India	--	2021	<a href="https://www.ariia.gov.in/">https://www.ariia.gov.in/</a>

Innovation Achievements					
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**\*SY= Stated Year, IY= Implementation Year**

A summary of the nationwide and worldwide rankings included in this study are compared in Table 2. Here, seven rankings are briefly discussed and mentioned: the name of the ranking, the ranking agency based on the country, the year of the ranking's inception, the year of implementation, and the sources of the ranking. This table clearly and comprehensively displays a ranking overview of the consideration ranking.

## Result and Discussion

### International Ranking

#### 1. Times Higher Education World University Rankings

An annual publication of university rankings by Times Higher Education (THE) magazine is the Times Higher Education World University Rankings. The first issue came out in 2009. Currently, the magazine offers worldwide in general, topic and credibility rankings, as well as three local league tables based on different weightings: Asia, Latin America, and BRICS & Emerging Economies. To analyse university performance on a worldwide scale, generate university rankings for Times Higher Education. and to serve as a resource for readers to learn about the various aims and successes of higher education institutions. There are five overall variables, such as Industry Income, International diversity, Teaching is concerned with the learning environment, while research is concerned with volume, income, and reputation, and citations are concerned with research significance. Furthermore, rankings address the three primary purposes of university activity: research, teaching, and impact.

**Table 3: Performance of Indian Institute of Technology on Times Higher Education World University Rankings 2022**

2022 Overall			Ranking				Scores					
SN	Institute Name	Rank	No. FT Student	No. of student per staff	International Students	F: M Ratio	Overall	Teaching	Research	Citations	Industry Income	International Outlook
1	IIT Ropar	351-400	1,876	10.5	0%	18:82	44.1-46.0	26.8	13.9	99.7	37.7	18.9
2	IIT Indore	401-500	1,832	11.4	0%	19:81	40.9-44.0	37.9	24.1	66.7	38.1	22.4
3	IIT Gandhina	601-800	1,590	15.5	0%	24:76	32.0-37.9	29.1	28.4	54	55.1	25

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4	IIT Patna	801-1000	1,810	14.4	0%	18:82	27.2-31.9	23.6	18.1	47.5	35.1	16.9
5	IIT Dhanbad	1001-1200	7,287	21.9	0%	15:85	22.4-27.1	22.1	20.8	36.7	55.9	15
6	IIT Bhubaneswar	1001-1200	1,778	12.7	0%	14:86	22.4-27.1	24.9	13.1	40	36.1	18.8
7	IIT Mandi	1001-1200	1,367	10.4	1%	26:74	22.4-27.1	23.3	10.8	40.3	35.2	22.2

**Source:** <https://www.timeshighereducation.com/>

Table-3 reveals the Times Higher Education World University Rankings data for the year 2022, which only includes the Indian Institute of Technology. In general, the name University of Oxford came in first place in this ranking. Only seven IITs are ranked under this system, and they are listed above in Table 3 and other IITs are not mentioned. This ranking system is divided into two parts: ranking and ad score. Ranking includes rank, number of FTE students, number of students per staff, international students, and female and male ratios, as well as scores for overall, teaching, research, citations, industry income, and international outlook. In terms of overall and IITs (in-between) rank, IIT Ropar received 351-400 (1st in IITs), while IIT Indore received 401-500. (2nd in IITs), IIT Gandhinagar received 601-800 (3<sup>rd</sup> in IITs), IIT Patna received 801-1000 (4<sup>th</sup> in IITs), and IIT Dhanbad, IIT Bhubaneswar, and IIT Mandi are received 1001-1200 (5<sup>th</sup>, 6<sup>th</sup>, 7<sup>th</sup> in IITs).

## 2. QS World University Ranking

An annual release of university rankings (QS) is the QS World University Rankings by Quacquarelli Symonds. This list's inaugural edition, released every year, was released in 2010. The Times Higher Education-QS World University Rankings was the previous name for the QS ranking. The publisher worked with Times Higher Education (THE) magazine to create its international league tables from 2004 to 2009 before both started proclaiming their versions. Teaching, research, employability development, and internationalization are the four main facets of a university's mission that QS deems necessary for performance evaluation. The six metrics are:

- Academic peer review.
- Faculty/student ratio.
- Citations per faculty.
- Employer reputation.
- The proportion of international students and staff.
- The faculty/student ratio.

**Table 4: Performance of Indian Institute of Technology on QS World University Ranking 2022**

S N	Institutions Name	Rank	Overall Score	International Student Ratio	International Faculty Ratio	Faculty Student Ratio	Citation Per Faculty	Academic Reputation	Employer Reputation
1	IIT Bombay	=177	46.4	1.6	1.5	32.5	55.5	51.3	79.6
2	IIT Delhi	185	45.9	1.7	1.2	30.9	70	45.8	70.8
3	IIT Madras	=255	38.1	1.6	1.2	32.3	60.2	36.1	48.3
4	IIT Kanpur	=277	36.4	1.2	1.3	18.3	81.6	30.1	41.1
5	IIT Kharagpur	280	36.3	1.1	1.5	16.7	88	28	38.8
6	IIT Guwahati	=395	28.3	1.3	1.4	12	94.8	13.2	14.5
7	IIT Roorkee	=400	28	2.6	1	10.3	88.8	14.8	19.3
8	IIT Hyderabad	591-600	-	1.5	1.1	24.9	65.8	3.7	2.2
9	IIT Bhubaneswar	701-750	-	1	1.2	20.6	54.4	3	3.3

Source: <https://www.topuniversities.com/>

Table 4 demonstrates the QS World University Ranking data for 2022. Only nine IITs are ranked in this ranking system, and the remaining 14 IITs are not ranked at all. Overall Score, International Student Ratio, International Faculty Ratio, Faculty Student Ratio, Citation Per Faculty, Academic Reputation, and Employer Reputation are all represented in this ranking system. According to the ranking system, IIT Bombay secured =177 rank overall and between IITs system secured first positions, whereas IIT Bhubaneswar secured 701-750 rank overall and between IITs system secured ninth or last positions.

### 3. Academic Ranking of World Universities (ARWU)

The world's finest universities and colleges are ranked by the Shanghai Jiao Tong Academic Ranking of World Universities (ARWU). The oldest is the Academic Ranking of World Universities (ARWU), usually called the Shanghai Ranking. This ranking has been managed since it was implemented in 2003. This list, updated annually, identifies the top universities globally and helps students choose where to enroll if they wish to study at one of the best institutions in the world.

**Table 5: Performance of Indian Institute of Technology on Academic Ranking of World Universities (ARWU) 2021**

2021 Academic Ranking of World Universities				Total Score					
SN	Institution	World	National/Regional	Alum	Awar	HiC	N&	PUB	PCP



	Name	Rank	Rank	ni	d	i	S		
1	IIT Delhi	701-800	3-8	0.0	0.0	0.0	4.0	31.2	12.5
2	IIT Kharagpur	701-800	3-8	0.0	0.0	0.0	0.0	32.2	12.8
3	IIT Madras	701-800	3-8	0.0	0.0	0.0	3.2	30.8	12.3
4	IIT Roorkee	901-1000	11-14	0.0	0.0	0.0	0.0	27.3	10.9

Source: <https://www.shanghairanking.com/>

Table-5 describes the Academic Ranking of World Universities (ARWU) ranking 2021 and it's clearly defined their rank. This table describes only four IITs data because only above four IITs like IIT Delhi, IIT Kharagpur, IIT Madras, and IIT Roorkee are ranked under ARWU ranking system in the year 2021 and other IITs are not ranked. This ranking system represents World Rank, National/Regional Rank, Alumni, Award, HiCi, N&S, PUB, and PCP. As per the ARWU ranking system IIT Delhi, IIT Kharagpur, IIT Madras are secured 701-800 world rank and in between IITs system secured 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, positions where as IIT Roorkee secured 901-1000 world rank and in between IITs system secured 4<sup>th</sup> or last positions.

#### 4. The Center for World University Rankings (CWUR)

“The Center for World University Rankings (CWUR) is a leading consulting organization that provides governments and universities with policy advice, strategic insights, and consulting services to improve educational and research outcomes. Since 2012, CWUR has published the only academic ranking of global universities that evaluates education quality, alumni employment, faculty quality, and research performance without relying on surveys or university data submissions. The ranking began as a project in Jeddah, Saudi Arabia, with the goal of rating the top 100 universities in the world. It was quickly reported worldwide by universities and the media, and many requests to expand it were received. In 2019, the ranking expanded to include the top 2000 universities from nearly 20,000 worldwide, making it the largest academic ranking of global universities. To rank the world's universities, CWUR employs seven objective and robust indicators divided into four categories: education quality, alumni employment, and faculty quality and Research Performance Since 2016, the Center for World University Rankings is headquartered in the United Arab Emirates.” <https://cwur.org/about.php>

(19,788 institutions were ranked, and those that placed at the top made the global 2000 list)

**Table 6: Performance of Indian Institute of Technology on Center for World University Rankings (CWUR) 2021-2022**

SN	Institution	World Rank	National Rank	Quality of Education Rank	Alumni Employment Rank	Quality of Faculty Rank	Research Performance Rank	Score
1	IIT Madras	557	4	-	181	-	600	73.6
2	IIT Bombay	567	5	-	373	-	551	73.5

3	IIT Delhi	623	7	-	133	-	694	72.9
4	IIT Kharagpur	708	8	-	528	-	684	72.2
5	IIT Kanpur	818	10	-	409	-	808	71.4
6	IIT Roorkee	860	15	-	269	-	886	71.1
7	IIT Guwahati	938	16	-	-	-	893	70.6
8	IIT Dhanbad	1520	34	-	623	-	1478	67.6
9	IIT Indore	1522	35	-	-	-	1452	67.6
10	IIT (BHU) Varanasi	1529	36	-	1145	-	1461	67.6
11	IIT Hyderabad	1582	41	-	-	-	1510	67.3
12	IIT Bhubaneswar	1677	46	-	-	-	1604	66.9
13	IIT Gandhinagar	1873	58	-	-	-	1796	66.2

Source: <https://cwur.org/>

Table-6 reveals about Performance of Indian Institute of Technology on Center for World University Rankings (CWUR) 2021-2022. This ranking gives World Rank, National Rank, Quality of Education Rank, Alumni Employment Rank, Quality of Faculty Rank, Research Performance Rank, and Score. Only thirteen IITs are ranked IIT Madras (world rank 557 and national rank 4), IIT Bombay (world rank 567 and national rank 5), IIT Delhi (world rank 623 and national rank 7), IIT Kharagpur (world rank 708 and national rank 8), IIT Kanpur (world rank 818 and national rank 10), IIT Roorkee (world rank 860 and national rank 15), IIT Guwahati (world rank 938 and national rank 16), IIT Dhanbad (world rank 1520 and national rank 34), IIT Indore (world rank 1522 and national rank 35), IIT (BHU) Varanasi (world rank 1529 and national rank 36), IIT Hyderabad (world rank 1582 and national rank 41), IIT Bhubaneswar (world rank 1677 and national rank 46), IIT Gandhinagar (world rank 1873 and national rank 58) and other IITs are not ranked as per CWUR ranking system.

## 5. UI GreenMetric World University Rankings

“The UI GreenMetric World University Ranking is an Universitas Indonesia initiative that was launched in 2010. On April 16, 2009, the University hosted an International Conference on World University Rankings as part of its internationalization strategy. The goal of this ranking is to provide the results of an online survey about the current state of Green Campus and Sustainability policies in universities around the world. It is expected that by attracting the attention of university leaders and stakeholders, more attention will be paid to combating global climate change, conserving energy and water, recycling waste, and promoting green transportation. There are 39 indicators and 6 criteria i.e. Setting and Infrastructure (SI), Energy and Climate Change (EC), Waste (WS), Water (WR), Transportation (TR), and Education (ED) in the current performance evaluation tool.” <https://greenmetric.ui.ac.id/about/welcome>

**Table 7: Performance of Indian Institute of Technology on UI GreenMetric World University Ranking 2021**

SN	University	Ran	Tota	Setting	Energy	Wast	Wate	Transportati	Educati
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		Rank	Total Score	Infrastructure	Energy & Climate Change	Waste	Water	Transportation	Education & Research
1	IIT Roorkee	391	6075	850	975	1050	700	1350	1150
2	IIT Bhubaneswar	541	5250	1200	850	975	700	850	675

Source: <https://greenmetric.ui.ac.id/>

Table 7 shows Indian Institute of Technology's performance on the UI GreenMetric World University Ranking 2021. This ranking provides the following information: Rank, Total Score, Infrastructure Setting, Energy & Climate Change, Waste, Water, Transportation, and Education & Research. Only two IITs are ranked in this list like IIT Roorkee and IIT Bhubaneswar. Its positions are 391 and 541.

### National Ranking

#### 6. National Institutional Ranking Framework (NIRF) Indian

The National Institutional Ranking Framework (NIRF) is a new effort for the educational assessment system designed at the national level in India. The MHRD authorized it and went live on September 29, 2015. The NIRF consists of five parameters: "Teaching, Learning, and Resources (TLR)," "Research and Professional practice (RP)," "Graduation Outcomes (GO)," "Outreach and Inclusivity (OI)," and "Peer Perception." The eleven subjects covered by the NIRF ranking are University, Engineering, Management, Pharmacy, College, Medical, Law, Architecture, Dental, and Research. The National Institutional Ranking Framework (NIRF) is open to the public and should now include a global angle. As former IIT Director, Prof V. Ramgopal Rao said that it's time for India to internationalize the Indian Ranking.

**Table 8: Performance of Indian Institute of Technology on National Institutional Ranking Framework (NIRF) 2021**

SN	NIRF Ranking 2021	Overall Ranking			Engineering Ranking		
	Inst. Name	Inst. ID	Rank	Score	Inst. ID	Rank	Score
1	IIT Madras	IR-O-U-0456	1	86.76	IR-E-U-0456	1	90.19
2	IIT Bombay	IR-O-U-0306	3	82.52	IR-E-I-1074	3	85.16
3	IIT Delhi	IR-O-I-1074	4	81.75	IR-E-U-0306	2	88.96
4	IIT Kanpur	IR-O-I-1075	5	76.5	IR-E-I-1075	4	83.22
5	IIT Kharagpur	IR-O-U-0573	6	75.62	IR-E-U-0573	5	82.03
6	IIT Roorkee	IR-O-U-0560	7	71.4	IR-E-U-0560	6	78.08
7	IIT Guwahati	IR-O-U-0053	8	69.26	IR-E-U-0053	7	73.84
8	IIT Hyderabad	IR-O-U-0013	16	58.53	IR-E-U-0013	8	68.69
9	IIT Dhanbad	IR-O-U-0205	26	53.88	IR-E-U-0205	11	64.07

10	IIT BHU	IR-O-U-0701	28	53.74	IR-E-U-0273	14	62.1
11	IIT Indore	IR-O-U-0273	30	53.22	IR-E-U-0701	13	62.56
12	IIT Ropar	IR-O-U-0378	31	52.89	IR-E-U-0378	19	58.09
13	IIT Gandhinagar	IR-O-U-0139	33	52.77	IR-E-U-0064	22	56.86
14	IIT Patna	IR-O-U-0064	51	47.67	IR-E-U-0139	21	57.38
15	IIT Bhubaneswar	IR-O-U-0355	58	46.78	IR-E-U-0355	28	55.71
16	IIT Mandi	IR-O-U-0184	82	43.93	IR-E-U-0184	41	52.58
17	IIT Jodhpur	NA	NA	NA	IR-E-U-0395	43	51.56

**Source:** <https://www.nirfindia.org/Home>

Table-8 shows Indian Institute of Technology's performance on the National Institutional Ranking Framework (NIRF) 2021. This ranking has eleven ranking sections, but we only elaborate on two of them: Overall Ranking and Engineering Ranking. According to the NIRF website, only seventeen IITs are ranked, and the rest are not. Table 8 describes the ID, Rank, and Score of each institution. IIT Madras (IR-E-U-0456) was ranked first in both the overall and engineering rankings, whereas IIT Jodhpur (IR-E-U-0395) was not ranked in the overall ranking but was ranked 43rd in the engineering ranking, placing it last among the seventeen IITs involved.

### 7. Atal Ranking of Institutions on Innovation Achievements (ARIIA)

An initiative of the Ministry of Education (MoE), Government of India, known as Atal Ranking of Institutions on Innovation Achievements (ARIIA), aims to methodically rank all of India's major higher educational institutions and universities on metrics related to "Innovation and Entrepreneurship Development" among students and faculty. The nine ranking criteria utilized by ARIIA include Mind-Set Development, Teaching and Learning, Infrastructure and Facilities, Innovations Developed, Start-ups Established, Collaboration and Investment, IP & Commercialization, Expenses & Revenue, and MoE Initiative. The ARIIA ranking is open to all recognized Higher Educational Institutions in India. ARIIA provides six border subject ranks like "Institute of National Importance & Central Universities/CFTIs (Technical)", "University & Deemed to be University (Govt. & Govt. Aided) (Technical)", "University & Deemed to be University (Private/Self Financed) (Technical)", "Colleges/Institutes (Govt. & Govt. Aided) (Technical)", "Colleges/Institutes (Private / Self Financed) (Technical)", and "CFTIs (Non-Technical) and General (Non-Technical)". <https://www.ariia.gov.in/>

**Table 9: Performance of Indian Institute of Technology on Atal Ranking of Institutions on Innovation Achievements (ARIIA) 2021**

SN	Inst. ID	Institute Name	Rank
1	ARI-U-0456	IIT Madras	1
2	ARI-U-0306	IIT Bombay	2
3	ARI-I-1074	IIT Delhi	3
4	ARI-I-1075	IIT Kanpur	4
5	ARI-U-0560	IIT Roorkee	5

6	ARI-U-0013	IIT Hyderabad	7
7	ARI-U-0573	IIT Kharagpur	8

**Source:** <https://www.ariia.gov.in/>

The seven IITs ranked under the Atal Ranking of Institutions on Innovation Achievements (ARIIA) 2021 are shown in Table-9. There are six categories in the ARIIA ranking system, but table 9 only includes Institutes of National Importance and Central Universities/CFTIs (Technical) rankings. Only seven IITs are ranked in the ARIIA, and the remaining IITs are not ranked. Indian Institute of Technology Madras was ranked first, and Indian Institute of Technology Kharagpur was ranked eighth.

### **Suggestion may be taken**

- Large-scale promotion of qualitative research is required in academic institutions.
- Collaboration between national institutions and other country institutions must be encouraged.
- Restructure our educational framework, infrastructure, and ranking system, among other things.

### **Conclusion**

There is a need to promote qualitative research in universities on a large scale; institutional standing is a crucial consideration for academic institutions in the twenty-first century. Their research output, instructional strategies, the effectiveness of research funding, research conducted through global collaborations, faculty and student durability, institutional honors, worldwide view, and several other variables are all considered in the ranking. Ranking aids in identifying an institution's quality or standard so that students, researchers, staff, or faculty can choose their institutions. There are only 23 Indian Institutes of Technology in India, and these institutions are referred to as top-level institutions in India, despite the fact that not all institutions are ranked. However under studies seven ranking systems, IIT Roorkee comes under 6 ranking systems; IIT Bhubaneswar, IIT Delhi, IIT Madras, and IIT Kharagpur come under 5 ranking systems; IIT Bombay, IIT Kanpur, and IIT Hyderabad come under 4 ranking system; IIT Indore, IIT Gandhinagar, IIT Dhanbad, and IIT Guwahati come under 3 ranking system; IIT Ropar, IIT Patna, IIT Mandi, IIT BHU comes under 2 ranking system; IIT Jodhpur comes under only 1 ranking system.

### **Declarations:**

**Conflict of Interest:** The author has no conflicts of interest to declare that are relevant to the content of this article.

### **Reference**

1. Abdul-Majeed, G., Saleem, E. A., Smait, D. A., Abdulhussain, S. H., Sait, S. M., Majdi, H. S., Marhoon, H. A., & Al-Azzawi, W. K. (2023). Implementation of a new research indicator to QS ranking system. *Scientometrics*, *128*(2), 1351–1365. <https://doi.org/10.1007/s11192-022-04611-3>
2. *About*. (n.d.). Retrieved April 18, 2023, from <https://www.nirfindia.org/About>
3. *About | CWUR | Center for World University Rankings*. (n.d.). Retrieved March 18, 2023, from <https://cwur.org/about.php>
4. *Academic Ranking of World Universities 2023—Mastersportal.com*. (n.d.). Retrieved March 18, 2023, from <https://www.mastersportal.com/rankings/2/academic-ranking-of-world-universities-shanghai-jiao-tong-university.html>
5. Aguillo, I. F., Bar-Ilan, J., Levene, M., & Ortega, J. L. (2010). Comparing university rankings. *Scientometrics*, *85*(1), 243–256. <https://doi.org/10.1007/s11192-010-0190-z>
6. Anbalagan, M., & Tamizhchelvan, D. M. (2021). Ranking of Indian Institutions in Global and Indian Ranking system: A Comparative Study. *Library Philosophy and Practice (e-Journal)*. <https://digitalcommons.unl.edu/libphilprac/5100>
7. *ARIIA | Atal Ranking of Institutions on Innovation Achievements*. (n.d.). Retrieved March 19, 2023, from <https://www.ariaa.gov.in/About/ARIIA>
8. Benito, M., Gil, P., & Romera, R. (2019). Funding, is it key for standing out in the university rankings? *Scientometrics*, *121*(2), 771–792. <https://doi.org/10.1007/s11192-019-03202-z>
9. *Best Colleges in India 2021: List of India's Top Colleges in 2021 by India Today Group*. (n.d.). India Today. Retrieved March 19, 2023, from <https://www.indiatoday.in/bestcolleges/2021>
10. Bornmann, L. (2014). Ranking institutions by the handicap principle. *Scientometrics*, *100*(2), 603–604. <https://doi.org/10.1007/s11192-014-1260-4>
11. Buéla-Casal, G., Gutiérrez-Martínez, O., Bermúdez-Sánchez, M. P., & Vadillo-Muñoz, O. (2007). Comparative study of international academic rankings of universities. *Scientometrics*, *71*(3), 349–365. <https://doi.org/10.1007/s11192-007-1653-8>
12. Çakır, M. P., Acartürk, C., Alaşehir, O., & Çilingir, C. (2015). A comparative analysis of global and national university ranking systems. *Scientometrics*, *103*(3), 813–848. <https://doi.org/10.1007/s11192-015-1586-6>
13. De Witte, K., & Hudrlikova, L. (2013). What about excellence in teaching? A benevolent ranking of universities. *Scientometrics*, *96*(1), 337–364. <https://doi.org/10.1007/s11192-013-0971-2>
14. Importance of University Rankings for Institutions, Countries, International Students. (n.d.). *MSM HigherEd*. Retrieved March 19, 2023, from <https://msmhighered.com/insights-post/importance-of-university-rankings-for-institutions/>
15. Indian Institutes of Technology. (2023). In *Wikipedia*. [https://en.wikipedia.org/w/index.php?title=Indian\\_Institutes\\_of\\_Technology&oldid=1149658722](https://en.wikipedia.org/w/index.php?title=Indian_Institutes_of_Technology&oldid=1149658722)

16. López-Illescas, C., de Moya-Anegón, F., & Moed, H. F. (2011). A ranking of universities should account for differences in their disciplinary specialization. *Scientometrics*, 88(2), 563–574. <https://doi.org/10.1007/s11192-011-0398-6>
17. marketing, B. (2018, July 20). 4 Reasons why Rankings Matter in Higher Education. *QS*. <https://www.qs.com/4-reasons-why-rankings-matter-in-higher-education/>
18. MoE, National Institute Ranking Framework (NIRF). (n.d.). Retrieved March 19, 2023, from <https://www.nirfindia.org/2021/Ranking.html>
19. Molinari, J.-F., & Molinari, A. (2008). A new methodology for ranking scientific institutions. *Scientometrics*, 75(1), 163–174. <https://doi.org/10.1007/s11192-007-1853-2>
20. Ramaswamy, N., & Ltd, P. M. M. P. (2015, March 11). *The importance of ranking institutions*. People Matters. <https://www.peoplesmatters.in/article/skilling/importance-ranking-institutions-10781>
21. Science, I. J. of M. R. and S. (2018). India's Higher Education Institutions and their Rankings. *International Journal of Management Research and Social Science (IJMRSS) - Dr. Mohammad Shafi Khan*. [https://www.academia.edu/43344970/Indias\\_Higher\\_Education\\_Institutions\\_and\\_their\\_Rankings](https://www.academia.edu/43344970/Indias_Higher_Education_Institutions_and_their_Rankings)
22. ShanghaiRanking. (n.d.). Retrieved March 19, 2023, from <https://www.shanghairanking.com/methodology/arwu/2021>
23. ShanghaiRanking's Academic Ranking of World Universities. (n.d.). Retrieved March 19, 2023, from <https://www.shanghairanking.com/rankings/arwu/2021>
24. Singh, V. K., Nandy, A., Singh, P., Karmakar, M., Singh, A., Lathabai, H. H., Srichandan, S. S., & Kanaujia, A. (2022). Indian Science Reports: A web-based scientometric portal for mapping Indian research competencies at overall and institutional levels. *Scientometrics*, 127(7), 4227–4236. <https://doi.org/10.1007/s11192-022-04395-6>
25. Times Higher Education World University Rankings. (2022). In Wikipedia. [https://en.wikipedia.org/w/index.php?title=Times\\_Higher\\_Education\\_World\\_University\\_Rankings&oldid=1065809766](https://en.wikipedia.org/w/index.php?title=Times_Higher_Education_World_University_Rankings&oldid=1065809766)
26. Welcome to UI GreenMetric—UI GreenMetric. (n.d.). Retrieved March 19, 2023, from <https://greenmetric.ui.ac.id/about/welcome>
27. Why are university rankings so important? (2015, December 23). World Economic Forum. <https://www.weforum.org/agenda/2015/12/why-are-university-rankings-so-important/>
28. World University Rankings. (2021, August 25). Times Higher Education (THE). <https://www.timeshighereducation.com/world-university-rankings/2022/world-ranking>
29. Wu, D., Li, M., Zhu, X., Song, H., & Li, J. (2015). Ranking the research productivity of business and management institutions in Asia–Pacific region: Empirical research in leading ABS journals. *Scientometrics*, 105(2), 1253–1272. <https://doi.org/10.1007/s11192-015-1752-x>