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Accreditation and Ranking of Indian Higher Education Institutions: A Comparative Analysis of IITs and NITs

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ABSTRACT

This research examines the methodologies used by Indian higher education institutions to ascertain their rankings and certification. The text especially examines the roles and responsibilities of the University Grants Commission (UGC), All India Council for Technical Education (AICTE) and the National Assessment and Accreditation Council (NAAC). This research analyses the protocols and regulations followed by the Indian Institutes of Technology (IITs) and the National Institute of Technology (NITs) by comparing them to global norms and benchmarks, such as the Academic Ranking of World Universities (ARWU) and the QS World University Rankings. This article further focused on performance comparison between IITs and NITs those are considered as leaders in higher education in India. While IITs have global recognitions but at the same time NITs are recognised as institutions of national importance but unable to recognize amongst top 100 universities. This study investigates reasons about NITs lacking that could help policymakers and administration to consider for future actions. This study concluded with performance comparison between IITs and NITs according to data available for the year 2025 in QS World Universities and Academic Ranking of World Universities rankings.

The research evaluates the positive and negative aspects of India's Technical Higher Education system by comparing it with international standards. The study indicates that technical institutions in India are way behind international outlook, research productivity, and transparency, despite their significant national achievements to match quality standards. Furthermore, this report suggests legal reforms in Indian education systems and recommended to adopt worldwide best practices such as bringing receptiveness of new ideas, transparency, and stricter assessment norms and at the same time emphasis should be international collaboration and research. Maintaining international standard will bring global competitiveness amongst Indian institutions.

Keywords: *Accreditation; Higher Education; Ranking; National Assessment and Accreditation Council (NAAC); Higher Education Institutions (HEIs); University Grants Commission (UGC); National Institutional Ranking Framework (NIRF); Academic Rankings of World Universities (ARWU); QS World University Rankings.*

1. INTRODUCTION

Accreditation and ranking of Indian higher education institutions are important measures of their quality and reputation. Accreditation is the process of evaluating and certifying the quality of educational institutions and programs. National Assessment and Accreditation Council

(NAAC) conducts accreditation in India, it is an autonomous body established by the University Grants Commission (UGC). The North American Accreditation Commission (NAAC) assesses and grants accreditation to educational institutions based on many criteria including teaching and research quality, physical infrastructure, and student support services.

Higher education institutions may be compared and assessed based on characteristics such as student performance, faculty credentials, and research output. These factors serve as significant indicators for assessing the quality of a school.

These assessments are carried out in India by several organizations and agencies, namely Outlook-ICARE University Rankings, QS World University Rankings, The Times Higher Education (THE), the Academic Rankings of World Universities, and National Institutional Ranking Framework (NIRF). With the help of these rankings, prospective learners along with their families are going to be encouraged to make well-informed judgments about their goals for higher education.

Accreditation and rankings are vital indicators of quality, but they are not the only ones, and this must be understood. For every student, a highly ranked or accredited institution may not be the best alternative. As a result, prior to choosing an option, prospective students must do their due diligence, visit a number of colleges, and weigh criteria like location, size, and program offers.

2.   Literature review

(Press Information Bureau 2024) India's 7 premier institutions have achieved a significant milestone in the world university rankings and for the first time they have been listed under top 100 universities. IIT Delhi (44th) and IIT Bombay (48th) have been featured amongst top 50 universities, whereas as IIT Madras (56), IIT Kharagpur (60), Indian Institute of Science (62), IIT Kanpur (67), and University of Delhi (81) amongst top 100 in the QS World University Rankings Asia 2025.

(Gowda 2020) argues that the accreditation of a program or institution requires a comprehensive assessment to verify that it meets or exceeds the specified criteria established by AICTE/UGC. This certification ensures that the program or institution fulfils the necessary criteria and that its graduates are adequately equipped to satisfy the expectations of the workforce and the community. Evaluating a program's quality is determined by a thorough review of data and its effectiveness in achieving its objectives. The NAAC assesses the overall quality of schools by conducting a comprehensive review of data and accomplishments over five years.

(Fernandes & Singh, 2022) have investigated that Indian accreditation and ranking body are moderately assessing parameters and they are rating comparatively high according to global ranking accreditation and ranking practice. Moreover, this study revealed that Indian universities are lagging in research, publication and citations important factors for securing prestigious position in international ranking.

(Pawar, 2023) has investigated that India New Education Policy 2020 is visioning about globalization of higher education, improving international rankings and attracting foreign

students moreover it has objective about improving residential infrastructure and required supporting services to have feel good experience by students.

According to (Jons & Mansukhani, 2023) Indian students are preferring international destinations for their higher studies but at the same time Indian higher education system is thriving for major reforms and initiatives under National Education Policy 2020 is bringing up positive changes while addressing issues related to capacity, equity, access, quality, and bureaucratic hurdles. India has established National Research Foundation (NRF) is committed to bring up major investment STEM area. Furthermore, Indian government is eying on establishing international universities campuses within in India with the objectives of providing high-quality higher education options students in their own country, promoting high-quality teaching and research ecosystem in the country and additionally enhancing competition within institutions to build their capacity and improve quality. Efforts made under NEP are long way to achieve affording to (Institute of International Education, 2023) United States of American is most favoured destination for Indian students. It has reported that 298,000 has enrolled for higher studies in U.S.A, which surpasses number of student's mobility from China in the last 40 years.

According to (Kumar, 2024) IITs are raising bars international rankings for Indian institutions and improving their positions global ranking. IIT Bombay and IIT Delhi have been placed in top 150 in QS World University ranking 2025. It has reported that 61 per cent of Indian universities have improved their standings as compared to previous year. IIT Bombay has jumped from 149 to 118 had marked improved of 31 rank, IIT Delhi has fallen behind IIT Bombay has secured 150 position. IITs has been continuously improving their rankings although it has been reported that Indian institutions are lagging behind in the International Faculty Ratio and International Student Ratio indicators, are concerns need to be address by greater international collaboration and exchange.

According to (KUMAR, 2014) Delhi University Teachers' Association (DUTA) has demanded setting up a corporate framework bring reform in the structure of Indian education system which about making changes in four-year undergraduate programme (FYUP) and it was introduced in 2013. It has been observed that India is missing with coherent national policy on higher education, and it has not detailed blueprint document. In 2013 FICCI has organized a Higher Education and shared its vision about 2030 and it envisioned that Indian Institute of Technology (IITs) and Indian Institute of Management (IIMs) would be securing rank 200 in global university ranking.

(Agarwal, 2017) suggested to use data mining technique to enhance institutional management and that could help in raising the performance of the institution. The study found that educational institutions are generating huge amount of data is consecutively increasing every year, such data may be used to take better decision making and also suggested to develop a model which will examine the performance indicators and its metric studies. This metric will be categorized into broader heads and subheads. Each broad head has an overall weight assigned to it. Within each head, the sub-heads will also have an appropriate weight distribution and this first identify the relevant data needed to suitably measure the performance score under-each sub-head, based on these data, and the overall score of the institute is calculated.

(Chaudhuri, 2016) advocated about better collaboration and coordination between academia and policy maker in India. Academic experts are side-lined in decision making by bureaucrats,

hence the current situation exposes disconnect between them. The study has suggested for interdisciplinary collaboration moreover this study envisaged about creating a dynamic ecosystem where academia and policy can thrive together for taking knowledge-driven decisions.

The National Institutional Ranking Framework (NIRF) conducts a yearly assessment of institutions, evaluating their overall performance and national reputation, and then rates them accordingly while All India Council for Technical Education (AICTE) formulates norms and standards and designated for accrediting and maintaining the quality of technical institutions in India (Ministry of Education 2023) but its role is meagre for both IITs and NITs since they avail the special status amongst technical universities.

To enable comparisons across schools located nearby, NIRF assigns a numerical score ranging from 0 to 100. Evaluations and rankings are used to gauge the quality of education and the level of excellence of institutions using several methodologies.

2.1 Why Accreditation and Ranking Needs in Academia?

For numerous factors, Indian higher education institutions' accreditation and rankings are significant.

Firstly, Accredited Institutions could verify the fact that they are fulfilling the requirements for research, infrastructure, student assistance services, teaching and learning by participating in the accreditation process. Accreditation process ensures parents, employers, and students that universities are able to impart standard quality education.

Second, while selecting where to go for higher learning, learners and their families could obtain useful details from rankings of higher education institutions. Rankings can help students make more educated judgments about where to apply and enrol by indicating the relative quality of various programs and institutions. Employers might discover rankings helpful when deciding whether they should recruit graduates from a specific university.

Thirdly, accreditation establishes the fact that institutions are fulfilling standards with utmost integrity and also ensuring recognition of their degree and curriculum while rankings are evaluated in subject based criteria and it does not ensure quality of education (Hasan 2025).

Fourth, accreditation further ensure transfer of credits, when a student is transferred from institution to the other one, it also helps in getting financial aid and government scholarships and moreover organization prefer to hire future employee from accredited institutions (NIET n.d.).

Moreover, according to (Kayyali 2023) rankings are considered as bench mark for assessing institutional excellence. Higher rankings help to get students and faculty attraction, raise funding and fostering collaborations. Moreover, rankings assist institutions to showcase their universities' research productivity, teaching excellence, global engagement, employability outcomes, and student satisfaction, it also helps students to choose right fit institutions for their academic pursuit.

3. Ranking and Accreditation: Indian Higher Education Institution Vs Global prospective

Indian intuitions often ranked lower in the global rankings such as QS Would University Rankings, Academic Ranking of World Universities (ARWU) in comparison to universities are in U.S., U.K. and China.

The Indian Institute of Technology Bombay (IITB), a prominent educational institution in India, has the 118th position in the QS World University Rankings for 2025. (Quacquarelli Symonds Ltd, n.d.).

IIT Delhi (150), Indian Institute of Science Bengaluru (211), IIT Madras (227), IIT Kharagpur (222), and IIT Kanpur (263) represent the other Indian universities that managed to make it to the top 1503. In overall, Indian higher education institutions have ratings lower worldwide than those in other nations. On the other hand, a small number of Indian universities achieve excellent positions in international university rankings. Amongst those are the Indian Institutes of Technology (IITs) and the Indian Institute of Science (IISc), which are frequently recognized as the best engineering and technological institutes in the world. In addition, some additional Indian research organizations and universities have been moving up the ranks in recent years as a result of their efforts to increase their profile internationally and their output of research.

(Yeravdekar and Tiwari 2014) stated that India's university system ranks as the third biggest globally, trailing after China and the United States. India's university system is afflicted by several issues. There have been several complaints about the absence of industry-specific course offerings, teachers who lack sufficient qualifications, subpar course materials, and antiquated facilities.

Indian institutions are unable to meet the necessary criteria for being included in global rankings owing to many problems, such as inadequate facilities and an unfavourable research environment.

3.1 Factors behind the lower global rankings of Indian higher education institutions:

3.1.1 Universities and research organisations in India get much lower financing per student in comparison to their counterparts in other countries, mostly owing to financial limitations. The scarcity of resources allocated to research and infrastructure development directly impacts the quality of education and research outputs.

3.1.2 India's New Education Policy 2020 embarrasses equity, inclusion, and innovation but still its higher education systems lacks in innovation and government expenditure on research is just 0.64% of GDP while 3.47% in the USA, 5.71% in Israel, and 2.41% in China (2023-24) (Press Information Bureau 2025). It seems that spending in research and development project is lesser priority of the government.

3.1.3 Indian Higher Education curriculum is outdated out dated are not able to fulfil current industrial demands and students studying are lacking with practical skills (Shukla 2025).

3.1.4 Indian institutions are still facing serious issues due to their inadequate infrastructure. According to (Raman 2023) 96 engineering colleges affiliated to Anna University were found missing with basic amenities such as labs, libraries, and classrooms.

Between 2014-2018 AICTE has to shut down 400 engineering institutions citing the reasons they missed with basic amenities and had poor student outcomes (Economic Times 2018).

3.1.5   In the recent years India institutions witness declined in faculty-student ratio and it was only O. P. Jindal Global University (JGU), which a private university has set the standard for the Indian universities to be featured in the global top 350 for this parameter in addition to that 78% Indian universities have seen decline the international students indicator (Shankar 2025).

3.1.6   A study conducted by (Naik, 2025) reveals that Indian intuitions are not embarrassing AI and new technologies in their curriculum rather than they are still relying on old and outdated syllabus and they do not access to modern facility and infrastructure.

4.   Research Gap

Further research is required in specific areas to improve the quality of research and education throughout India's Accreditation and Ranking system for Higher Education. A significant drawback is the lack of stringent criteria for certification and grading. The current methodology depends on self-evaluation and peer assessment, which may lead to partiality and a deficiency in transparency. Additional inquiry is necessary to create more precise criteria for certification and grading, such as the inclusion of external evaluators or quantitative assessments of research output and student performance.

Another concern arises due to the existing system's emphasis on the qualifications of the teaching staff and the condition of the physical infrastructure, rather than prioritising the actual educational progress and professional growth of the students when assessing and accrediting schools. Conducting research is crucial for incorporating student outcomes into the accreditation and grading process, as well as for measuring them more accurately. Moreover, there is a lack of research on the effectiveness of India's current certification process and its potential growth opportunities.

Furthermore, the current certification and grading system fails to adequately recognise the increasing importance of innovation and entrepreneurship in the worldwide economy. Additional research is necessary to improve the certification and grading system to provide more efficient approaches for assessing and motivating innovation. The number of publications in internationally recognised journals is a key factor in determining university rankings. However, many Indian institutes have a shortage of publications in this field.

Therefore, further investigation is necessary to ascertain the most efficient strategies for Indian universities to improve the quality of their research. The certification and ranking system in India's higher education system may lack comprehensive research on several issues. There are several domains in which the existing research is deficient:

1. Insufficient unbiased and transparent criteria: The Indian certification process depends on self-assessment and evaluation by peers, thus leading to a lack of impartiality. Additional inquiry is necessary to create more precise criteria for certification and grading, such as the inclusion of external assessors or quantitative assessments of research output and student performance.

2. Diminished focus on student outcomes: The current grading and accrediting system in India assigns more significance to teacher qualifications and school infrastructure as contributory

elements, rather than emphasising student acquisition of knowledge and readiness for employment. Additional inquiry is necessary to improve the evaluation of student accomplishments, allowing for their integration into the processes of accreditation and grading.

3. There is a lack of research on the effectiveness of accreditation. The certification process in India has not been extensively studied to determine its influence on student outcomes and educational standards. The study is crucial for assessing the efficacy of the existing certification process and identifying potential areas for improvement.

4. India's present certification and rating system fails to sufficiently emphasise innovation, despite its growing importance in the global economy. To improve the certification and rating system, further research is required to identify more efficient methods for assessing and recognising innovation.

5. One crucial determinant of university rankings is the volume of research papers in renowned international journals. Typically, Indian higher education institutions generate a fewer quantity of publications in these journals, resulting in reduced acknowledgement. Additional inquiry is required to ascertain how Indian colleges might augment their research production.

To enhance the standard of education and research in India, it is crucial to tackle the current deficiencies in the ranking and accrediting processes of the country's higher education system, as previously stated.

5. Accreditation and Ranking: Comparative analysis of IITs and NITs

The certification and rankings bolster the credibility and eminence of IITs and NITs as premier institutions. IITs are famous institutions are highly esteemed by employers, academics, and researchers across the globe. This reputation of IITs not only helps in obtaining money and other resources, but also aids in attracting highly respected personnel, researchers, and students. It functions as a benchmark for assessing the level of excellence and efficiency. Accreditation and rating provide a set of standards that IITs and NITs must fulfil to guarantee the excellence of their education and research. Rankings may be used to evaluate institutions and identify areas for improvement, hence offering significant information for stakeholders.

Institutions may strategically spend their efforts and resources by using accrediting and grading systems to discover best practices and areas for development. This allows them to maximise their effect on performance and quality. Essentially, the development of the whole nation depends on rankings and certification. The Indian Institutes of Technology (IITs) and National Institute of Technology (NITs), renowned as the leading educational institutions in India, have a substantial influence on the country's educational framework. Improving the reputation of these institutions will raise the country's prominence and promote international exchanges and cooperation.

The IITs have earned global recognition and credibility, which also set a standard for excellence and performance, raise the bar for academic accomplishments, and significantly contribute to the progress of the nation but NITs are yet to embark their global presence but both are two prestigious educational institutions in India. The IITs have constantly been placed at the top in several national and international rankings.

The University Grants Commission (UGC) and the National Assessment and Accreditation Council (NAAC) are primarily responsible for evaluating and certifying IITs in India. However, these universities may be found in several global rankings, including ARWU, Times Higher Education's World University Rankings, and QS's World University Rankings. The IITs are widely recognised as prestigious educational institutes in India, especially in the domains of engineering and technology.

The main duty of grading and accrediting technical institutions is entrusted to India's National Board of Accreditation (NBA) and All India Council for Technical Education (AICTE).

The National Assessment and Accreditation Council (NAAC) and the University Grants Commission (UGC) are the main governing bodies tasked with assessing and certifying the quality of IITs. Conversely, the National Board of Accreditation (NBA) and the All-India Council for Technical Education (AICTE) are the primary organisations tasked with evaluating and granting accreditation to NITs and IITs.

Table 1: Participation of IITs and NITs QS Global University Rankings from 2023 to 2026

Name of the ranking	Year	Total number of IITs participation	Total number of NITs participation
	2023	11	1
	2024	11	1
	2025	11	1
QS Global University Rankings	2026	11	1

Source: https://www.topuniversities.com/world-university-rankings/2025?region=Asia&countries=in

From 2023 to 2026, Both IITs and NITs presence have shown stagnant presence QS Global University Rankings from 2023 to 2026. Although there are 23 IITs and 31 NITs are in India but only 11 IITs and 1 NITs are able to mark their presence in the international rankings.

Table 2: IITs (North India) in QS and ARWU rankings 2025

Name of the Institution	QS World University Rankings	Academic Ranking of World Universities (ARWU)
Indian Institutes of Technology, Delhi	150	601-700
Indian Institutes of Technology, Mandi	NA	NA
Indian Institutes of Technology, Jammu	NA	NA
Indian Institutes of Technology, Ropar	NA	NA
Indian Institutes of Technology, Jodhpur	NA	NA
Indian Institutes of Technology, Roorkee	335	801-900
Indian Institutes of Technology, Kanpur	263	601-700
Indian Institutes of Technology, (BHU)	531	NA

Above Table 2 represents IITs presentence in QS World University Rankings and Academic Ranking of World Universities for the year 2025, the data revealed that IIT Delhi is leading all the IITs and has been continuously improving its rankings whereas IIT Kanpur, Roorkee and IIT BHU are far behind and they have successfully placed in both the rankings while other like IIT Mandi, Jammu, Ropar, Jodhpur could mark their presence are considered as new generation

IITs in India. At the same time it is evident that IIT, BHU could not place in the ARWU rankings for 2025.

Table 3: NITs (North India) in QS and ARWU rankings 2025

Name of the Institution	QS World University Rankings	Academic Ranking of World Universities (ARWU)
Malaviya National Institute of Technology,	NA	NA
Motilal Nehru National Institute of Technology, Allahabad	NA	NA
National Institute of Technology, Delhi	NA	NA
National Institute of Technology, Hamirpur	NA	NA
Dr B R Ambedkar National Institute of Technology, Jalandhar	NA	NA
National Institute of Technology, Kurukshetra	NA	NA
National Institute of Technology, Srinagar	NA	NA
National Institute of Technology, Uttarakhand	NA	NA

Above Table 3 shows that none of NITs in north India was able to secure place in both QS and ARWU rankings for the year 2025.

Table 4: IITs (North India) score in QS World University Rankings 2025

Institution Name	Academic Reputation	Employer Reputation	Faculty Student	Citations per Faculty	International Faculty	International Students	International Research Network	Employment Outcomes	Overall
Indian Institute of Technology Delhi (IITD)	54.1	80.9	17.3	77.4	3.1	1.5	63.3	35.1	52.1
Indian Institute of Technology Kanpur (IITK)	36.9	56.9	14	73.3	2.6	1.1	38.8	19.6	39.3
Indian Institute of Technology Roorkee (IITR)	19.4	29	6.8	93.8	1.3	2	44.3	6.4	33.4
Indian Institute of Technology (BHU) Varanasi	5.5	5.9	3.9	95	1.4	1.1	24.5	6.5	23.1

Source: https://www.topuniversities.com/world-university-rankings/2025?region=Asia&countries=in

Above Table 4 indicates performance analysis of Indian Institutes of Technology (IITs) those are situated across north India having various indicators are those help in evaluating QS World University Rankings 2025. This analysis indicates the strengths and grey areas for improvement of each IITs, as indicated by their rankings and performance metrics in thought academic reputation, employer reputation, faculty student ration, citations per faculty, international students presence, international research network and employment outcomes.

IIT, Delhi is leading all the way having highest overall score of 52.1 and it has score maximum in Employer reputation while IIT, BHU at the bottom has highest score in citations per faculty. The Data could help policymakers to identify grey area and focus and long term strategies may further enhance the international rankings of the IITs.

Academic Reputation:

IIT, Delhi leads with a score of 54.1.3, followed by IIT, Kanpur at 36.9 and at the other hand IIT, Roorke and IIT, BHU have lower scores, indicating comparatively weaker Academic recognition but IIT BHU has highest score 95 in citations per faculty.

Employer Reputation:

IIT, Delhi excels with the highest score of 80.9, showcasing strong employer reputation.
IIT Kanpur followed with 56.9, while IIT Roorkee and IIT. BHU show lower scores, and IIT, BHU could not cross double digit figure.

Faculty Student:

IIT Delhi leads with 17.3, followed by IIT, Kanpur with 14 while others have not crossed dual digit mark showing these need to work on faculty recruitment.

Citations per Faculty:

IIT BHU stands out with the highest score of 95 followed by IIT Roorkee 93.8 and IIT Delhi and IIT Kanpur have similar score 77.4 and 73.3 respectively.

International Faculty:

IIT Delhi has highest number of international faculty score of 3.1 followed by IIT Kanpur and while IIT BHU and IIT Roorkee as almost similar score in this metric.

International Students:

IIT Roorkee holds the top rank at 2 followed by IIT Delhi at 1.5 and at the other hand IIT Kanpur and BHU has same figure.

This analysis indicates the strengths and grey areas for improvement of each IIM, as indicated by their rankings and performance metrics in thought leadership, return on investment (ROI), entrepreneurship and alumni outcomes, employability, and diversity.

International Research Network:

IIT Delhi leads in this parameter with the top score of 63.3 followed by IIT Roorkee while IIT Kanpur is 38.8 and IIT BHU is at 24.5

Employment Outcomes:

The various data shows evidence that IIT Delhi has been pioneer in the employment outcomes, it lead to the top score of 35.1 followed by IIT Kanpur at 19.6 while Roorkee and BHU have almost same figure 6.4 and 6.5 respectively.

World Rank	Name of the Institution	Alumni of an institution winning Nobel Prizes and Fields Medals (Alumni)	Staff of an institution winning Nobel Prizes and Fields Medals (Award)	Highly Cited Researchers (HiCi)	Papers published in Nature and Science (N&S)	Papers indexed in Science Citation Index-Expanded and Social Science Citation Index (Web of Science) (PUB)	Per capita academic performance of an institution (PCP)
601-700	Indian Institute of Technology Delhi	0	0	0	7.5	32.6	14.1
601-700	Indian Institute of Technology Kanpur	0	0	6.6	6.6	26.4	11.8
801-900	Indian Institute of Technology Roorkee	0	0	0	1.5	29.2	12.3

Table 5 shows the ARWU rankings and academic performance only three Indian Institutes of Technology: Delhi, Kanpur, and Roorkee those have successfully placed them in this global rankings. IIT Delhi and IIT Kanpur share a similar world ranking of 601-700, indicating similar overall performance on a global scale, while IIT Roorkee managed to ranked at 801-900, suggesting a minor difference in its overall global academic standing compared to the other two.

The study noted that none of IITs of from the north India region has earned Nobel Prize or Fields Medal winners among both their alumni and staff. This metric, often a significant factor in global university rankings, suggests an area where these institutions might aim for further development in terms of fostering ground-breaking research recognized by these prestigious awards. Additionally, none of the three IITs registered any Highly Cited Researchers, which indicates a scope for enhancing the global impact and visibility of their research output.

The above table reveals that in terms of publication output, IIT Delhi emerged as leader exhibits the strongest performance in high-impact journals, with 7.5 papers in Nature and Science, followed by IIT Kanpur with 6.6. IIT Roorkee lacks in this specific indicator with 1.5 papers, suggesting inconsistency in the volume of research published in these top-tier scientific journals. However, for papers indexed in Web of Science (PUB), IIT Delhi again leads with 32.6, closely followed by IIT Roorkee at 29.2, and then IIT Kanpur at 26.4. This indicates a solid foundation in general research output across all three, with IIT Roorkee showing a relatively strong presence in overall indexed publications despite its lower N&S score. Lastly, regarding per capita academic performance (PCP), IIT Delhi once more leads with 14.1, indicating a higher efficiency in academic output per individual, followed by IIT Roorkee (12.3) and IIT Kanpur (11.8), suggesting that Delhi and Roorkee might be more effectively leveraging their academic resources.

6.   Material and Methods

This research focuses on evaluating the ranking frameworks of north Indian Technical Higher Education institutions IITs and NITs at international rankings, with particular emphasis on the QS World University Rankings and Academic Ranking of World Universities (ARWU) rankings for the year 2025 and also compares ranking frameworks with international benchmarks to identify gaps and propose recommendations for enhancing the global competitiveness of the Indian Institute of Technology (IIT) and the National Institute of Technology (NITs). The research adopts a descriptive and comparative approach to analyse the effectiveness of accreditation and ranking systems in Indian higher education. This involves a combination of qualitative and quantitative methods, including document analysis, to provide a comprehensive understanding of the current landscape and its alignment with international standards.

Official websites and reports from the NAAC, UGC, and significant worldwide ranking organizations including ARWU, QS World University Rankings are the main sources of data. In addition, other documentation from certain Indian institutions, such as self-study reports and certification results, are examined.

The data obtained from the websites of the aforementioned national and international agencies for the year 2025 have been examined for the purposes of this study. The aim of this investigation was to ascertain grey areas for key stakeholder like policymakers and institutional heads to consider for intuitional performance enhancement in regards to international rankings and their frameworks.

7.   Discussion

The accreditation and grading systems provide an in-depth look at how IITs and NITs are performing across multiple dimensions. This study highlights the unique strengths of each institution while also identifying areas where they can grow further. Leading institutions such as IIT Delhi and Kanpur continue to demonstrate excellence in many fields. The analysis covers factors like graduation outcomes, research productivity, community engagement, and peer recognition. Yet, even for these top-tier institutions, there remains ample room for progress—particularly in expanding research collaborations and strengthening their academic reputation among peers.

For Indian universities to compete effectively on a global stage, a sharper focus on research, partnerships with industry, and global engagement is essential. Based on the findings, the study recommends strategic actions to enhance institutional performance and rankings, especially by promoting diversity, employability, and intellectual leadership. Improving the quality of research and education in India's higher education ecosystem will also require re-examining the current accreditation and ranking frameworks. Addressing these structural gaps—along with better recognition of innovation and student outcomes—is key to long-term progress.

Ultimately, the study underlines the need for collective effort, forward-looking strategies, and sustained improvement to elevate Indian higher education institutions in the global academic landscape.

8.   RESULTS/ OUTCOMES

The University Grants Commission (UGC) and the National Assessment and Accreditation Council (NAAC) serve as the principal agencies responsible for evaluating and certifying the quality and standards of higher education institutions in India. Despite their rigorous national frameworks, premier institutions such as the IITs and NITs often receive comparatively lower placements in global university rankings. Several factors contribute to this disparity, including limited financial support, modest research output, weak international collaborations, and an insufficient emphasis on innovation. Moreover, the Indian accreditation system's dependence on peer review and self-assessment can, at times, raise questions about its consistency and objectivity.

The findings of this study suggest that Indian universities—particularly the IITs and NITs—are deeply influenced by domestic evaluation mechanisms such as NAAC and the National Institutional Ranking Framework (NIRF). While the NAAC framework provides a comprehensive appraisal of institutional quality, covering dimensions like research, teaching methods, and infrastructure, the NIRF model places greater weight on outreach, graduate outcomes, and overall academic performance.

Although the IITs and NITs boast outstanding faculty, advanced infrastructure, and significant research contributions, they continue to face challenges in achieving parity with global rankings such as the Academic Ranking of World Universities (ARWU) and the QS World University Rankings. The underlying causes of this gap stem primarily from variations in evaluation criteria and the limited extent of international engagement.

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