

# H.E.I. Rankings: Research Excellence Vital to Win the Race

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**Abstract -This article suggests the strategic participation in rankings by higher educational institutes with strategic focus on research and innovations parameters to win this race. It's a general perception that rankings favour only research oriented institutions. But the fact is that when any higher educational institution opts to participate in a ranking process, it is implied that it has accepted the responsibility to enable faculty to undertake research useful to the society. The perception seems to be factual when we look upon the QS rankings or NIRF rankings of last five years indicating predomination of IITs, NITs and IISs. For example, Indian Institute of Science, Bangalore has yet again bagged the title of best research institute in India, as per NIRF Rankings 2022. IISc Bangalore had clinched the top spot among all research institutes of India in the year 2021 as well with 86.48 score out of 100.**

This year's QS World University Rankings include almost 1,500 institutions from around the world. It's not just iconic institutions that take the top spots: this year's highest rankings include universities from diverse locations across Europe, Asia and North America. The QS World University Rankings offers an annually updated list of the top 1,400+ universities worldwide. In the 2023 edition of the QS World University Rankings, just under half of the top 100 universities in the world are located in the US (which has 27 representatives) or the UK (17). The University of Oxford has topped an international university league table for the seventh year in a row, while two other British universities also made the top 10.

Similar scenario is seen in the Times Higher Education World Rankings 2023 which include 1799 universities across 104 countries and regions, making them the largest and most diverse university rankings to date. The University of Oxford tops the ranking for the seventh consecutive year. Harvard University remains in second place with the University of Cambridge jumping from joint fifth last year to third. The highest

new entry is Italy based Humanitas University, ranked in the 201-250 brackets. The US is the most-represented country overall, with 177 institutions, and also the most represented in the top 200 (58). Mainland China now has the fourth – highest number of institutions in the top 200 (11 compared with 10 last year), having overtaken Australia, which has dropped to fifth (joint with the Netherlands). Five countries enter the ranking for the first time (all of them from Zambia, Namibia, Mozambique, Zimbabwe and Mauritius).

The QS World University Ranking for 2021 included 1002 research universities. The region with the highest number was Europe, with 39.8%, followed by Asia Pacific with 26.7%, the US and Canada with 15.6%, Latin America with 10.8% and the Middle East and Africa with 7%. All regions except the Middle East and Africa were represented in the top 100. The largest number of new entrants to the rankings was from East Asia and Eastern Europe, followed by Southern Europe.

Rankings show a typical trend. Even in annual global universities rankings released by American media company, U.S. News UK and USA dominate top 5. Maintaining their positions from 2021, Harvard University, Massachusetts Institute of Technology (MIT), Stanford University, University of California (Berkeley) and University of Oxford were ranked as top 5 universities worldwide, further signifying the dominance displayed by US and UK institutions as the best on the world stage. Though the US represented itself with 280 universities on the list, China outnumbered it with 338 institutions thus outnumbering the former for the first time. China debuted on the list at number 23 with Tsinghua University in Beijing. But hold it! It has ranked 99 institutions from India for the year 2022-23. 5 institutions from Mumbai - TIFR, IIT Bombay, Homi Bhabha National Institute, Institute of Chemical

Technology, and Seth GS Medical College, have made their mark on the list containing 2,165 institutions on the basis of 13 indicators. Yes Indians have understood the game.

Let's have a glimpse of the rules of the game. Global university rankings use metrics that primarily measure research to rank universities. Some also have criteria for inclusion based on the concept of a research university such as teaching at both undergraduate and postgraduate level and conducting work in multiple faculties (QS World University Rankings), or teaching undergraduates, having a research output of more than 1000 research papers over 5 years, and no more than 80% of activity in a single subject area (Times Higher Education World University Rankings).

As a university becomes known for its research in certain fields, it becomes magnet for students, faculty, grants, media coverage, and even philanthropy. Ultimately, it adds greatly to the intellectual resources of the country too. Thus, good research policy is essential to be placed as a vital element in overall educational structure. The main idea/goal behind major weight-age on this aspect is to inculcate the concept of innovation as new ideas and knowledge (radical and those that improve the result), mechanisms for their practical implementation, and, most importantly, mechanisms for the dissemination of innovations. This is the reason why toppers in the list on the one hand, in many countries have tendencies to create largely, often international clusters of research work, on the other - in the staff of universities positions of research management specialists in existing projects and centres are introduced vigorously.

The question which naturally arises in mind is why Indian educational institutions are lagging behind in research and development? The Economic Survey has pointed out that the low spending on research and development (R&D) as one of the reasons why India lags behind countries like China and the US in patents. The survey added that the number of patents granted in India is a fraction of what is granted in China, US, Japan. If we look at how much does India spend on R and D? India's gross expenditure on research and development (R&D) is one of the lowest in the world, with just \$43 per capita, according to NITI Aayog's India Innovation Index 2021. Per capita expenditure on R & D has ubiquitous effect on research in every economy.

#### The rising Indian stars:

It is all about facilities provided and efforts made by the institution to promote a 'research culture'. The institution, through its executive board of management, has the responsibility to enable faculty to undertake research projects useful to the society.

The role of research culture in university, especially in private sector has been proven already when we look upon the QS rankings or NIRF rankings of last five years wherein many private universities have captured the rank in the list predominated by IITs, NITs and IISs. For example, Indian Institute of Science, Bengaluru has yet again bagged the title of best research institute in India, as per NIRF Rankings 2022. Shoolini University, Himachal Pradesh has been ranked as the number one private university in India according to the Times Higher Education (THE) World University Rankings for 2023. The university also ranked 351-400 overall and 39 in the world in citations.

A look at NIRF rankings indicates that the list is topped by IISs, IITs, IIMs, NITs, etc. Public Universities like Chandigarh university, Pune university, etc. also achieved rank among first 50, though not at top. But the point to be noted is that there are 10 private universities in India which have secured place in the list. These are: Amrita Vishwa Vidyapeetham, Coimbatore; Manipal University - Manipal Academy of Higher Education; VIT Vellore - Vellore Institute of Technology; BITS Pilani - Birla Institute of Technology and Science; Siksha 'O' Anusandhan, Bhubaneswar; KIIT University - Kalinga Institute of Industrial Technology; SASTRA University Thanjavur - Shanmugha Arts Science Technology Research and academy; Thapar University - Thapar Institute of Engineering and Technology; SIMATS Chennai - Saveetha Institute of Medical and Technical Sciences. Outlook's annual ICARE rankings of India's top 15 Emerging State Private Universities in August 2022 has named Vellore Institute of Technology as the best in the category, followed by Hyderabad's Woxsen University and Amravati's SRM University at second and third position respectively. Reports show that during these last few years these universities had focussed more on research and innovations policies, practices and outcomes.

Participation in ranking process: Survival strategy rather than a choice

Participation in ranking process is voluntary on part of any Higher Education system. However, tightening of government grants and competition in market has lead to participation in rankings more or less a mandatory process though it's not a hallmark of quality education. It's a part of survival strategy rather than a choice. Then, why not to enter well prepared – to win, to get better brand mark.

The NEP 2020 policy makers have wisely envisioned that research need to be focused to secure a better place in this world. Experienced academicians will agree that it will ultimately result in conquering a better place in the rankings by Indian Universities. To put it I simple words, educational - research ecosystem need to be developed. Let us quickly list out few basic actions needed in this direction:

(a) Core Issues: The issues of research and innovation need to be addressed at various levels, viz., (i) the way the research programmes at UG, PG and Ph. D are organized and carried out; (ii) time and energy devoted by the faculty in carrying out independent research projects (iii) support for Intellectual Property Rights to commercialize the outcome and quality of researches; (iv) integrating research with teaching; (v) enhancing the participation of university departments and colleges in advanced research, including interface with university and industry; and (vi) evolving clear norms, standards and regulations to ensure the quality of the research degrees offered by the university system in different disciplines.

(b) Concerns to promote research and innovation in Indian universities: Keeping in view the critical role of research and innovations in empowering our nation to acquire competitive edge in an interconnected world, following concerns are to be taken seriously: (i) A specified budget in each FY at individual university should be allocated for research and innovations; (ii) Motivating the new and younger faculty with a provision of "Start-up Fund' that should be initiated and institutionalized; (iii) Research and Development (R&D) Project guidelines should be made investigator friendly; (iv) Travel grant from university funds for students/Ph. D scholars for undertaking short term visits in the country or abroad may be provided for training, capacity building, collaborative research and for presenting papers in seminars and conferences; (v) More speciality-oriented Inter-University Centres

(IUCs) may be created 6. Provision of "Central Instrumentation Facility' catering to all the faculties should be made. To maintain the instruments and their running costs, a Corpus Fund with the support of UGC may be created in each university. A data bank of all the major equipment may be maintained at the university level and shown on university web page to enable collaborations and for optimal utilization by all the stake holders; (vi) There is a need to formalize the concept of Joint Appointment System between universities and national laboratories; (vii) There is also need to enhance the present strength of about 150,000 full time scientists by at least 3-fold, i.e., 450,000 over a reasonable time frame; (viii) Thrust areas at the national level in light of SDGs should be identified in both theoretical and experimental sciences in all disciplines. Priority should be accorded to research projects for funding in these thrust areas on mission mode; (ix) University Innovation Clusters through PPP should be set up in all geographical areas. The university acting as a nodal point of such a cluster, with a view to building an innovation network with industry, other universities and R & D Labs. This would ensure optimum use of human and infrastructural resource; (x) The existing "ENCORE" scheme of UGC should be further strengthened along with the newly introduced Professor-of-practice. In addition to the existing provisions, approximately 1,000 more National Professorships of Eminence and Professor of Practice may be created and implemented; (xi) A consortium of IPR firms need to be created to advise the faculty and the students on filing of patents in different disciplines and making them aware of copyright issues. Provision of generous support for filing patents by students, scholars and faculty be made either at the institution level or by funding agencies such as UGC/DST/CSIR/ICMR/DBT; (xii) In order to ensure quality of research/intellectual output, citation procedures be popularised even in non basic sciences. All written and oral information should be properly cited; (xiii) The laboratories, with minimum financial and mentor support, should have an open door policy for every layman who is interested in doing research. Innovation is a creativity which many times arises out of necessity to resolve an issue in daily life. Thus innovator could be even a hawker, a small shopkeeper, or a home maker. University need to create an environment to reach every common man that their

doors are open for them for further experimentation. Nothing risky in it! IITs are already practicing it. The initiation of 5G by this government has already paved the way for long-term and far-reaching intervention by transforming the quality and scale of connectivity including broad-band services that would reach the remotest geographical entity and educational institutions. As a university becomes known for its research in certain fields, they become magnets for students, faculty, grants, media coverage, and even philanthropy. It adds greatly to the intellectual resources of the country. Let us contribute to make mission NEP 2020 achieved in true sense. Let us believe in it! Let us work upon it! Let us have the target for placing our Indian institutions capture top of every ranking.

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