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Title : TIMES ENGINEERING INSTITUTE RANKING SURVEY 2016 - RESEARCH METHODOLOGY TIMES ENGINEERING INSTITUTE RANKING SURVEY 2016

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RESEARCH METHODOLOGY

The objective of this research was to identify and rank Top Engineering Institutes in India. The study had three major modules: Desk Research, Factual Survey & Perceptual Rating Survey.

A few highlights of our approach to ranking top Engineering Institutes in India

- We follow an approach which ensures much wider participation & coverage
- We exclude any institute from the survey only if they explicitly request for their exclusion (Usually it is done at the stage of analysis)
- We arrive at the final weightages for various parameters using a statistical method rather than using an expert opinion route which is subjective and could be biased
- Our perceptual survey covers all Engineering Colleges as every respondent has an option of mentioning names of any engineering college that they consider to be good enough to be included amongst the top colleges in their region or nationally - thus no college is technically excluded from the survey
- We conduct the survey amongst all relevant target groups i.e. those who have experience of Engineering Colleges or are interested in Engineering Colleges. In other words all whose opinion matters is covered in our survey. On the other hand, general public who do not have anything to do with Engineering Colleges are excluded from the survey as their perceptions can only create unnecessary noise in data.

those colleges that he/she was aware, considered them as one of the top colleges at the national level and at their zonal level. A respondent was asked to rate a maximum of 20 colleges to avoid investigation fatigue to ensure quality data.

A sample survey of 1500 was conducted in select cities - Class A (Delhi/NCR, Mumbai, Chennai, Kolkata, Bangalore, Hyderabad and Ahmedabad) and Class B (Chandigarh, Pune, Indore, Jaipur, Lucknow, Bhubaneswar and Ranchi). In each city a geographical spread of the sample was ensured by selecting multiple starting points spread across the city.

There were two main respondent categories who were interviewed to evaluate an engineering college viz. those who had the experience of such Colleges (Experiential) and those who were searching, aspiring for engineering and evaluating these colleges/ universities (Perceptual). The respondent categories included:

- **Experiential**
  - Faculties of Engineering College
  - Alumni of Engineering Colleges
  - HR Consultants who hire from Engineering Colleges

- **Perceptual**
  - Students aspiring to take admission in an Engineering College
  - Parents of students aspiring for admission in an Engineering College

Respondents were provided a list of parameters to evaluate the engineering college & rate on a scale of 1-10 where 1 was poor & 10 was excellent. The list of parameters to be covered in the survey was arrived at based on past surveys as well as discussions with experts from the engineering fraternity - faculty, HR, etc.

The following key parameters were covered in Perceptual Rating

- Infrastructure
  - Faculty
  - Course Curriculum
  - Industry Interaction
  - Pedagogy
- Research Orientations & focus
  - Global Exposure
  - Placement
  - Brand Value

As mentioned above 8 different stakeholders were taken into consideration for the national perceptual rating survey viz. Faculties, HR Executives, Alumni, Current students, Parents of aspiring students, Students aspiring in an Engineering course. The questionnaire was so designed that both experiential & perceptual target respondents were exposed to the same parameters - this meant that the scores of different stakeholders could be correlated and collated to arrive at a single final score.

ANALYSIS: FINAL RANKING OF ENGINEERING INSTITUTE

A robust approach was followed to arrive at the final rankings. The step by step process is given below:

- **Perceptual Score**
  - Ratings on various parameters for each college
  - Calculating importance of various parameters to arrive at weights for each parameter - we used a regression model to arrive at the importance of various parameters
  - Calculation of raw scores and weighted scores for each parameter
  - Calculation of overall score for each college using importance weightages
- **Factual Score**
  - The information collected corresponded to similar parameters as in the perceptual survey
  - A detailed scoring system was developed for each parameter
  - After assigning scores to each parameter, raw scores were calculated
  - The raw scores were weighted by their importance to arrive at weighted scores
  - The final college score was calculated as in the perceptual survey
  - The final score for an engineering college was an average of Perception Score and Factual Score - equal weightage (50:50) was given to both

**Final Rankings**

**Analysis of data**

**Final Rankings**

**Final Rankings**

**Final Rankings**

In the recent past, many organizations have started publishing rankings of engineering colleges in India. The readers get confused as not all rankings match each other. We have attempted to clarify a few points here regarding methodology so that readers can look at these rankings in a more informed way. One of the main reason for difference in rankings comes from the methodology used by each organization. The second reason which can lead to a lot of variation is the participation or refusal of some organizations to participate in the survey.

We at IIRC have studied the ranking methodology being used by many organizations worldwide and also had discussions with experts in India to finally arrive at a robust ranking system. Our preliminary research showed that ideally a weightage of 50:50 should be given to perceptual and factual ratings. Further we learnt that less than 50 parameters made too much generalization and hence compromised the final results. On the other hand more than 10 parameters made it too difficult for people to rate and rank. Hence 8 to 10 easily understood parameters for evaluation was the best solution.

We also learnt that the importance of parameters is a dynamic process and the focus keeps shifting as the environment is changing, needs of the society and nation are changing, technology is changing, the deliverables are changing. Thus, subjective system of assigning weightages to various parameters by a few experts was not the best solution. For this we finally developed a more robust statistical approach using a regression model. We do not claim to be the most robust methodology but we do take utmost care to be statistically sound and unbiased in our approach as well as ensure wide coverage. We are also continuously learning and modifying our approach incorporating new suggestions and improvements every year.

An extensive 5 week field work was conducted beginning the 2nd week of March 2016

MODULE 1 | DESK RESEARCH

The module 1 was a secondary research module. A comprehensive list of engineering colleges was generated with the help of internet, magazines and other publications. The various sources used for generation of engineering college list included:

- AICTE, AIU/UGC approved list of colleges/universities
- List of colleges/universities from previous surveys
- A discussion with industry experts to add/delete any college to ensure we have a comprehensive list

MODULE 2 | FACTUAL DATA COLLECTION

In module 2, more than 800 engineering colleges were sent the factual data questionnaire and then rigorously followed up through different modes such as responses, email and even face-to-face.

- The factual data sheet was focused on the following information areas:
- General information of the college: Establishment, College type, Affiliation etc.
  - Courses offered & number of seats
  - Selection criteria
  - Infrastructure
  - Faculty
  - Intellectual capital
  - Industry interface
  - Placement
  - Potential to network
  - Exchange programs & Global exposure
  - Research Orientation & focus
  - Alumni chapter - National & International

MODULE 3 | PERCEPTUAL SURVEY

In this module, a structured questionnaire was administered to selected respondents to get ratings of various engineering colleges in India at overall level as well as on specific parameters. The initial list had over 400 Engineering colleges, through each respondent was asked to give ratings for only

**Some caveats:**

- Only those colleges for which we received more than 30 responses, were included in the ranking.
- Best efforts were made to reach every college; however, any college that did not send complete "Fact Sheet" within the allotted time was assigned an average Factual score for calculating their overall ranking.
- There were some newly established Engineering Colleges that showed very good performance even though they have been established only recently and hence were not eligible for main rankings. However, it would have been an omission if they were not mentioned both from the point of view of readers as well as from other colleges' perspective. To make a mention of such colleges, we created a category of "Emerging Engineering Colleges" which fulfilled the following criteria:
  - Came into existence in last post 2010
  - Achieved high mentions amongst top engineering colleges in the Perception Survey - comparable to some of the top engineering colleges
  - Achieved overall good score
  - Any college which expressly stated that it did not wish to participate in ranking process and expressed their desire to exclude their name from the ranking list, are not featured in the survey

It must be noted that not every engineering college that got established since 2010 gets included in the Emerging Engineering Colleges but only those who achieved a comparable mention and perception score.

Some of the well known institutes including IIT Madras, IIT Kanpur, IIT Hyderabad, IIT Bangalore, VJTI Mumbai wished to be excluded from the ranking process during the factual survey thus not featuring in the ranking.

Note: Present survey has been conducted by an independent Research Agency named I3 Research Consultants using stated methodology for arriving at given rankings.