

# **IIT Bombay Strategic Plan (2017-2022)**

## **A report on stakeholders' feedback on draft strategy document**

**June 15, 2017**

**Indian Institute of Technology Bombay**



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IIT Bombay conducted surveys and interactive sessions for the stakeholders of the institute to seek feedback on the draft strategy document. It is hoped that the process of obtaining feedback will result in the involvement of relevant stakeholders in building the strategy document and plan for the institute. The survey was conducted in two phases. The first phase of feedback survey was before the release of the draft strategy document and the second phase was after the release of the draft document by the Director on 30th November 2016. The whole process of getting feedback started in July 2016 and ended in the month of February 2017. Key accomplishments of this process include the following:

- Online survey open to all stakeholders (students, faculty, staff and alumni) to get feedback on the draft strategy document
- Special department faculty meetings were hosted in most departments, schools and centres to discuss the draft document
- Director's open house with students
- Focus group discussion with the following group of the IITB community:
  - female students, staff and faculty
  - young faculty who had joined the institute before January 2012
  - interactive session with international students
  - discussion with Fellow of Academies
  - interactive session with staff members

Online survey was a web-based survey conducted using <http://surveymonkey.com> and <https://docs.google.com/forms> for the external stakeholders, and [surveys@iitb.ac.in](mailto:surveys@iitb.ac.in) for the internal stakeholders. A total of 430 responses were collected through online survey. From a total of 430 respondents, 252 were students, 84 were faculty, 34 were staff and 60 were alumni. The questionnaire had both quantitative and open-ended questions. The survey included questions related to their association with IIT Bombay and questions pertaining to the draft strategy document. Each of the stakeholder had a different survey tool asking specific questions. In student survey, the questionnaire asked currently enrolled undergraduate, masters and PhD students about their academic and social engagement, and life in the campus. The faculty members were asked about their work and what they feel about additional responsibilities they carry out as a faculty and shared their views on the draft strategy document. The staff of the institute were asked about their work experience on different aspects of their job and their perceptions on the draft strategy document. The alumni survey instrument was designed to ask the former students about their life at IIT Bombay as a student and their feedback on the draft strategy document. During the first phase of the survey the samples were randomly selected stakeholders of IIT Bombay, the second phase was open to all and their identity was kept anonymous to get honest response.

Table 1 Stakeholders' Response Rate

Stakeholder	No. Stakeholder	No. Responded	Response Rate
Student	10,285	252	2.5%
Faculty	619	84	14%
Staff	1054	34	3%
Alumni (1968-2015)	-	60	-

The feedback received from the above process was used in improvising the strategy document and plan for the institute. A summary of both the web-based quantitative and qualitative (comments) feedback and highlights of the focus group discussion collected from students, faculty, staff and alumni of IIT Bombay and the key findings is reported below. The qualitative data has been compiled together and is available in this link: <https://drive.google.com/open?id=0B9EEOxhj6hTwd1pjYnhGaDF5Z3c>

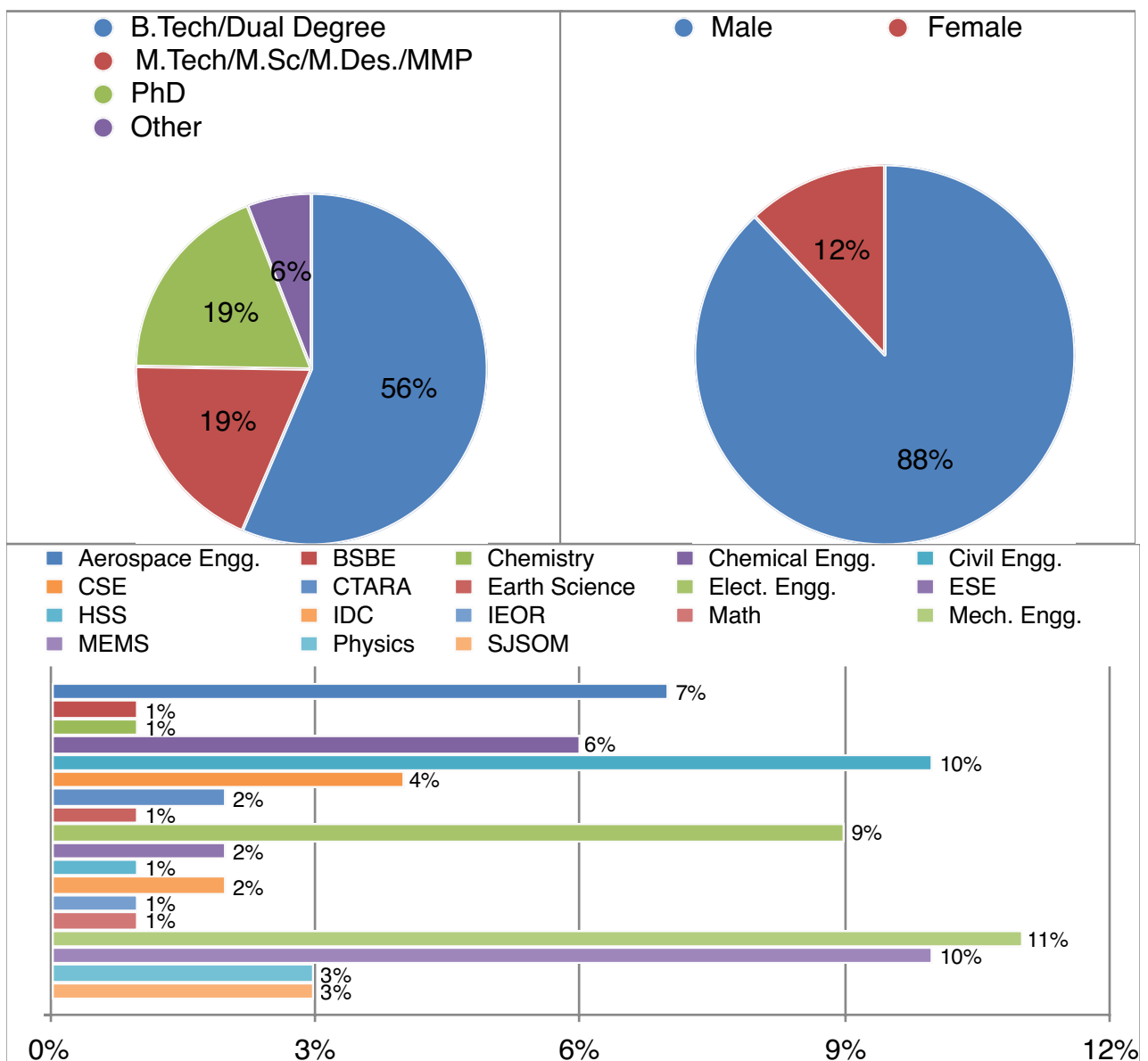
## 1. Summary of Students' Feedback

A web-based survey (see Annexure 1) was administered to gauge overall student satisfaction with their quality of education, quality of campus facilities, availability of resources, student-faculty interaction and their perceptions on sustainability and infrastructure, personality development and ethical standard amongst students. It also assesses students' overall level of satisfaction with their experiences at IIT Bombay.

### 1.1 Online survey-Student Response Rate

A total of 252 students responded, yielding a 2.5% response rate. Figure 1.1 illustrate the total number of students who responded to the survey by the degree they are pursuing, gender and by the department they belong to. Out of a total of 252 respondents, 56% were from the bachelor degree, 19% each from master degree and PhD degree respectively, and 6% respondents were from different other programs.

Figure 1.1 Student response rate, by degree they are pursuing, gender and academic unit



The highest number of respondents were undergraduates (56%). As is typical for surveys in general and most likely in IIT Bombay, male (88%) respondents were substantially more than female (12%) respondents. The response rate by department showed that Depart-

ment of Mechanical Engineering had the highest number of respondent with 19%, followed by 17% each from the department of Civil and MEMS respectively.

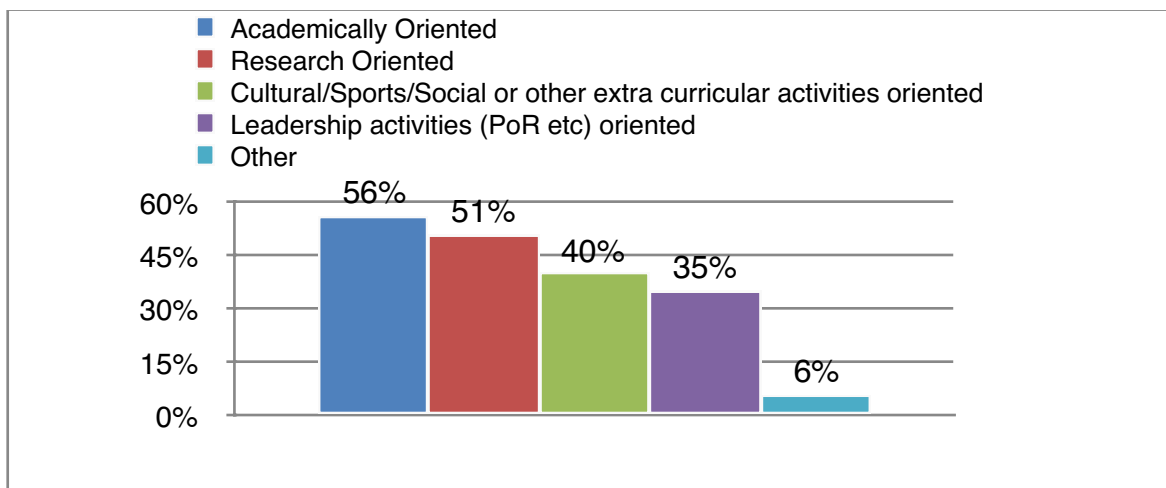
### 1.2 Student Orientation

The first question on the survey instrument touched directly on the “students’ perception about themselves”. It had a multiple option and a respondent could agree to more than one option. The options were “Academically oriented, Research oriented, Cultural/sports/social or extracurricular activities oriented, Leadership activities oriented and Other”.

Students orientation toward these interest is illustrated in Figure 1.2. Out of 252 students, a total of 56% of the total respondents perceive themselves to be “Academically oriented”, 51% of the total respondents to be “Research oriented”, 40% to be “Cultural/sports/social or extracurricular activities oriented”, and 35% to be “Leadership activities oriented”.

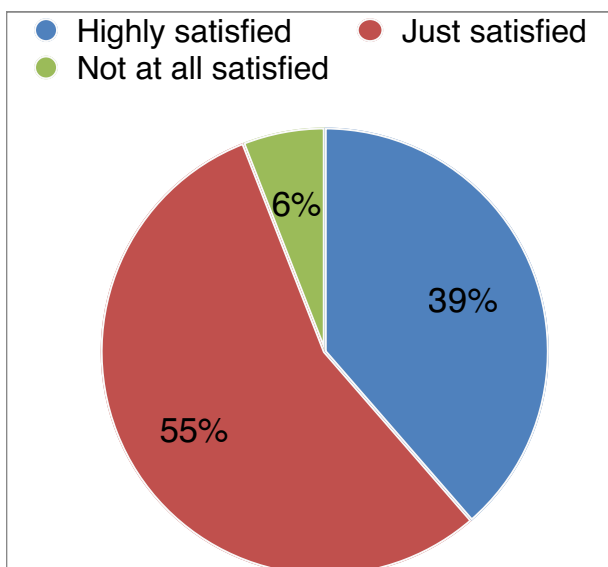
Overall, it is seen that most of the students are academically oriented.

Figure 1.2 Student response rate, by perception about themselves



### 1.3 Students’ Satisfaction

Figure 1.3a Student response rate, on overall satisfaction

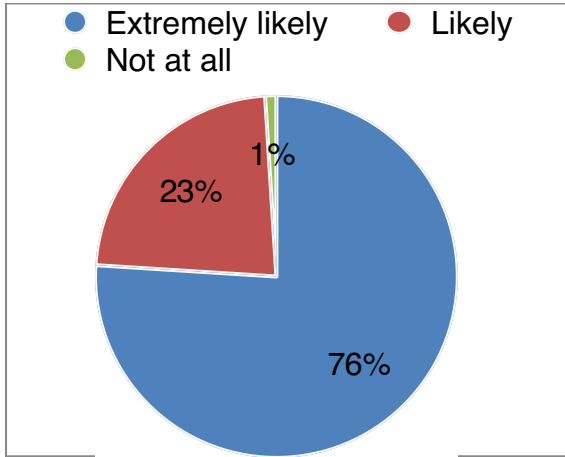


The survey questionnaire asked two questions to the students to measure their overall satisfaction as a student in IIT Bombay. The first question asked was “Overall, how satisfied are you with your experience as a student at IIT Bombay?”. It was measured on a three point scale of “highly satisfied, just satisfied and not all satisfied”.

Figure 1.3a illustrated responses which showed that 55% were just satisfied, 39% were highly satisfied and only 6% were not at all satisfied with their experience at IIT Bombay as a student.

This shows that maximum students are satisfied with their experience as student in IITB.

Figure 1.3b Likelihood of the student to recommend others to study at IITB



The students were also asked the “Likelihood of recommending others to study at IIT Bombay ” on a three point scale of “extremely likely, likely and not at all”.

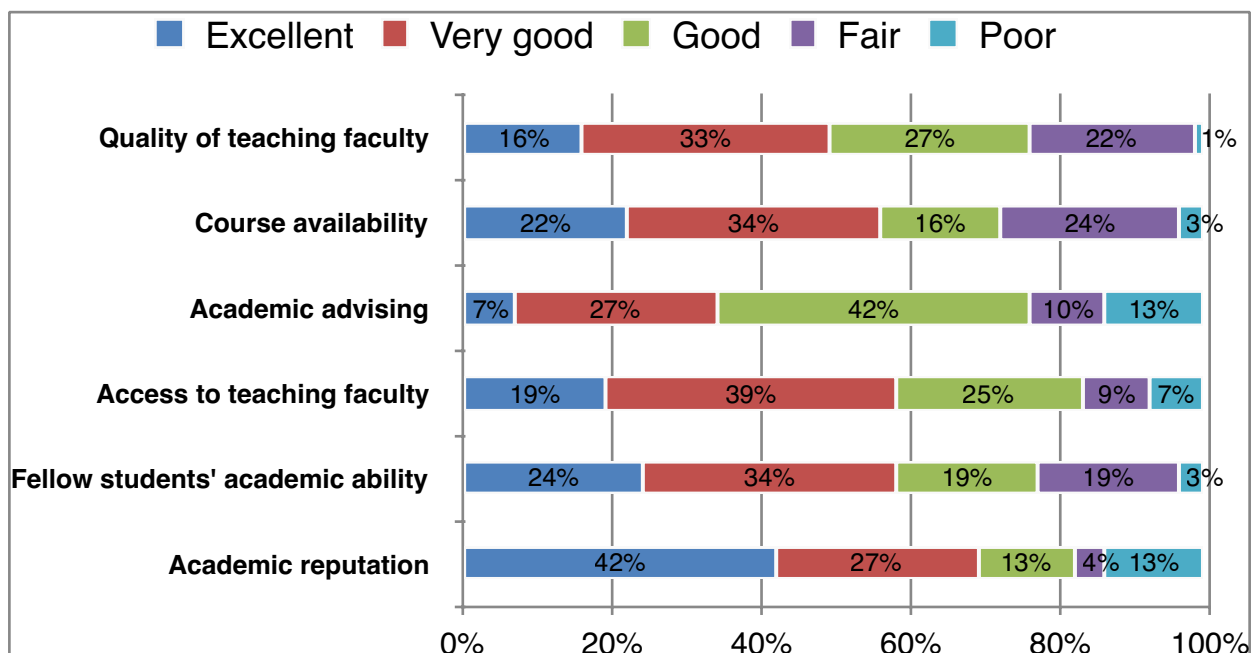
As presented in Figure 1.3b, 76% of the students replied that they are extremely likely to recommend others to study at IIT Bombay, 23% students are likely to recommend others and only 1% disagreed to do so.

The response shows that the students are satisfied with IIT Bombay and are likely to recommend others to study at IIT Bombay also.

#### 1.4 Students’ Educational Experience

A scale containing six items was asked to measure students satisfaction on different aspects of their educational experience at IIT Bombay. Presented in Figure 1.4a is the percentage of satisfaction level on each of the six items. The six items were “Quality of teaching faculty, Course availability, Academic advising, Access to teaching faculty, Fellow students academic ability and Academic reputation”. It was measured on a five point Likert scale of “1=Excellent, 2=Very good, 3=Good, 4=Fair and 5=Poor”. The first item on this scale asked students satisfaction on “Quality of teaching faculty”. As is expected from a reputed institute, 33% of the respondents agree that its very good, 27% finds it good, 22% finds it fair , 16% finds it excellent and only 1% finds it poor. The second item asked students on the “Course availability”. Thirty-four percent of the students agreed that it is very good, 24% find it fair enough, 22% finds it excellent, 16% finds it good and only 3% finds it poor.

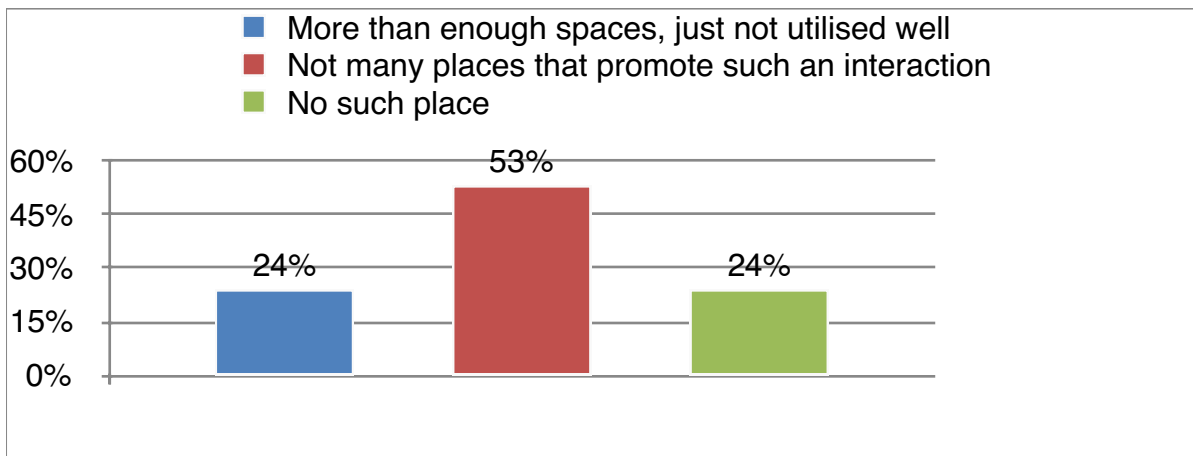
Figure 1.4a Students’ response rate, on their educational experience at IITB



The third item asked students about “Academic advising”. A highest of 42% students perceives it to be good, 27% as very good, 13% as poor, 10% to be fair and 7% to be excellent. However, when students were asked if they want the role of the faculty advisor to be redefined, 69% of the respondents agreed to it and 31% were neutral to it.

The fourth item was “Access to teaching faculty”. Thirty-nine percent of the students finds it very good, 25% finds it good, 19% finds it excellent, 9% finds it fair and only 7% finds it poor. In line with the fourth item “Access to teaching faculty” students were asked, “Do we have enough hubs in the institute where students and faculty can interact casually, outside of class?”. Figure 1.4b illustrated that 53% of the student believe that there are not many places in the campus that promote such an interaction, 24% were of the opinion that there are more than enough spaces but are not utilised well and another 24% students feel that there are no such place in the campus which promotes student faculty interaction.

Figure 1.4b Students’ response, on availability of places to promote student faculty interaction



The fifth item asked to the students was on “Fellow students academic ability”. Thirty-four percent of the student agree that the ability of the fellow students is very good, 24% finds it to be excellent, 19% finds it good and fair respectively and only 3% finds it poor. The sixth item asked student about how they perceive the “Academic reputation” of IIT Bombay. A highest of 42% students find it excellent, 27% replied that its very good, 13% agreed that its good and another 13% finds it poor.

Overall students were satisfied with all the aspects of their educational experience. However, a maximum of 13% find the “Academic advising” and “Academic reputation” to be poor.

### Comment Analysis

#### Enhance the role of faculty advisor:

- A faculty adviser should keep a check on his students. Students with low marks, strange ups and downs in grades/marks etc should be contacted by the faculty.
- Help guide interested students pursue core, either from a MS or a job point of view.
- Only professors who want to become a faculty advisor must be involved in this program.
- Provide student representative of FacAd, who could be approached before talking to FacAd in cases where they are doubtful about the situation.

- Have FacAd address the class once every semester to present topic like Industrial visit or academic oriented topics which will always remind the student that these FacAd are available for them.
- Help in deciding student's course load.

### **Improve the interaction between student and teacher:**

- Reduce class size by having multiple section for each batch.
- Introduce tutorial classes.
- Faculty need to share their research area early so that students with research orientation can focus and work without losing much time.
- Organise “Open Day” where faculty can present their area of research and expose students who are in the process of finalising their seminar, desertion and thesis topic.
- Introduce more faculty-student interaction in the first year, before students get interested in things other than engineering.
- A mandatory meet organised every semester by academic council can increase interaction.
- Students to be encouraged by faculty to attend their talk and seminar in the institute.
- Introduce a creative or practical assignment in each course which has to be done under the assistantship of the professor or his research students.
- Since students are not very clear about many aspects of academics, the faculty could take initiative and share information that would help them. Many students believed this will give a positive impact.
- Informal discussion, personal one on one doubt clearing sessions, open ended discussions, department picnic trips, sport matches, cultural evening need to be encouraged.
- Outside interaction such as having a coffee at hub should encouraged.

### **Make IIT Bombay students much more in sync with industrial requirement:**

- Curriculum needs to be up to date with industrial standards.
- Design courses in consultation with the industries
- Compulsory industrial internship with academic grades, similar to BTP or MTP
- More assignments and small projects should be given weightage in curriculum rather than giving nearly 50% weightage to end-sems
- Students can be given case studies of problems faced in industry and to solve such problems as a part of project
- Attend Industrial expo/conference visits along with report submission on what they learnt. IIT Bombay must try to get more funded projects in IT, manufacturing industry and other core industries so that the institute can work with passion. The professors could give opportunities to students to solve real life industrial problems.
- Department level industry-academia idea exchange program
- Have talks addressed by industry professionals
- Experiments could also be done in the industry if IIT Bombay lack instruments
- PhDs should be able to contact the industry, and industry personnel. Every PhD students can get an industry mentor. An industry person could also be considered in the RPC.
- Structured office for outreach programs to manage industrial linkages and field visits etc.
- This linkage will help in further industrial internships, core jobs placement, industry related course projects.

### **Promote Entrepreneurship:**

- The institute should encourage startups and create an environment for the same.
- Faculty should transmit the innovating capabilities into the students by training them and not just by giving infinite assignments in 1st semester.

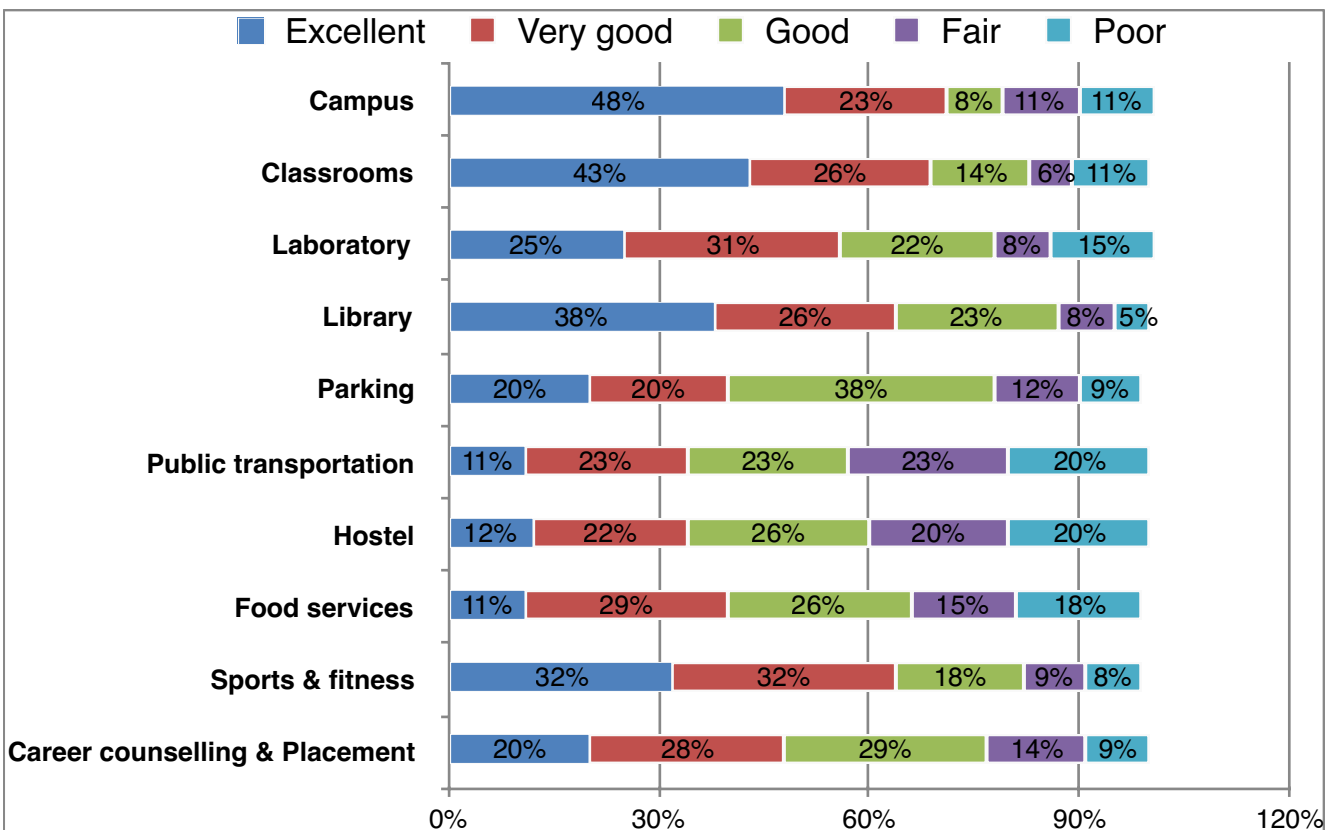


- Give courses on business strategy and entrepreneurship which are lacking in our institute and students are often unable to think in a big way about their companies.
- Arrange more number of on and off campus entrepreneurship courses/workshop.
- Provide incubators, where every idea is encouraged, then tested in the campus to build the business plan for implementation & incubation later for the whole market.
- More interaction with IIT Bombay alumni who have become entrepreneurs.
- Successful IIT Bombay entrepreneurs should be called to give speeches and made visiting fellows to motivate students
- Get technology evaluated by experts from all over the world.
- More informal halls or entrepreneurial incubation cells that specifically focus on commercialization of a PhD project
- Change perception of people towards people who have non-engineering start-ups or even people who go to jobs like consulting
- Institute should back some of the chosen startups by providing mentors, funds, networking and R&D facilities.
- Social entrepreneurial projects are being carried out on smaller scales in villages and small towns. The institute can have sessions/workshops about these and have an online portal of unsolved/partially-solved problems which might interest students with a socio-entrepreneurial bent of mind.

### 1.5 Services/Facilities Provided To Students

A scale containing ten items was asked to measure students satisfaction on different aspects of the services and facilities provided to them. The items were, “Campus, Classrooms, Laboratory, Library, Parking, Public transportation, Hostel, Food Services, Sports and fitness, and Career counselling and Placement. Presented in Figure 1.5 is the percentage of satisfaction level on each of the ten items.

Figure 1.5 Students response rate, on different services/facilities provided to them



From the list of ten items, the student perceived the facilities provided in the Campus (48%), Classrooms (43%), Library (38%) and Sports & fitness (32%) to be excellent. Additionally, 25% respondents find Laboratory facilities to be excellent, 31% find it very good and 22% good. Parking facilities was found excellent by 20% students, very good by 20% and good by 38% students. A highest of 20% students find the facilities provided for Public transportation, Hostel and Food services to be poor. In line with this, another question was asked about Campus cleanliness. Around 50% of the students agreed that the campus is clean, 37% did not agree and 13% were neutral in their opinion.

Overall, the students are found to be satisfied with different facilities/services provided to them. However, the institute needs to work on the following items: "Hostel", "Food services", and "Public transportation".

### **Comment Analysis**

- Online grievance redressal mechanism for accountability and engagement with the students
- Few rooms to be reserved for the use of external students

### **Improve hostel life:**

- Crumbling infrastructure of the hostels which requires urgent renovation
- Most of the rooms were shared and the room size is much smaller than required
- Smaller rooms lead to a compromise with furniture and other essential amenities
- The other things of concern are quality of mess food, theft issues, ban of smoking and alcohol, entry of animals like dogs and cats inside the hostel, and hygienic environment
- Serious penalty has been suggested on students who damages the hostel infrastructure
- Conduct audit of the mess and improve transparency
- Facilities such as laundry etc. need to be planned by keeping the interest of physically disabled people
- Requirement of married hostel
- Compatibility in the functioning of the hostel council and the warden could be more productive
- Students have also questioned if they are getting value for the money they are paying as fees after the fee hike

### **Changes in structure and functioning of library:**

- A canteen inside the library
- A room where students can study or collaborate on projects in groups (a place where silence is not expected)
- Access to more e-journals
- Library to remain open 24hour and 7 days a week
- Easy way to suggest new books, maybe some portal where a student can do it
- Initiate pan-IIT library linkup and link library to the city and other college libraries where books can be ordered if not available with IIT Bombay
- Add a section for non-academic books which could boast of the best books on topics like Economics, Pedagogy, Social Issues, Philosophy, Psychology, etc.
- Dropbox to be cleared the night before closing time to avoid fine
- Free printing facility using LDAP with limited number of pages per semester.
- E-books subscription are more effective than hard copies to issue a book from library. So funds from the coming session should be spent more on E-books
- Lockers for students if they need to keep their laptops or valuables for 1-3 hours.

- If the books in the book banks for category students are not issued, they should be allowed to be issued by general students
- Make the thesis section more accessible

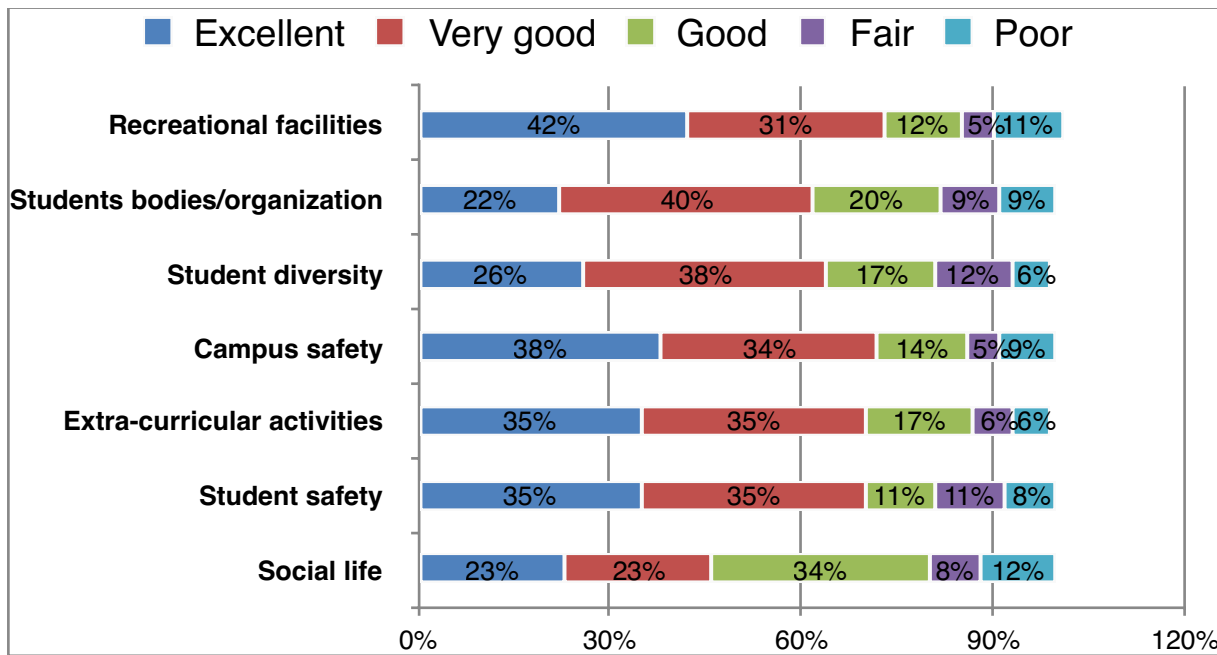
**Public transportation:**

- More buses for hostel 15 and 16 as students have to walk a long distance to reach the bus
- Effective and efficient operation of TumTum bus service in the campus

**1.6 Students’ Life on Campus**

A scale containing seven items was asked to measure students satisfaction on different aspects of their life as a student inside the campus. Presented in Figure 1.6 is the percentage of satisfaction level on each of the seven items. The seven items were “Recreational facilities, Students bodies/organization, Student diversity, Campus safety, Extra-curricular activities, Student safety and Social life”. These items were measured on a five point likert scale of “1=excellent, 2=very good, 3=good, 4=fair and 5=poor”.

Figure 1.6 Students’ response rate, on different aspects of their life inside the campus



Students are most satisfied with the Recreational facilities available in the campus. forty-two percent of the students find the Recreational facilities in the campus to be excellent, 31% find it very good and 12% find it good. This is followed by the items Campus safety, Extra-curricular activities and Student safety with 38% students and 35% each agreeing that the facilities are excellent.

Twenty-six percent of the students find the item Student diversity to be excellent, 38% finds it very good. Social life of the students was found excellent by 23%, very good by 23% and good by 34%. However a maximum number of respondent with 12% students find the Social life to be poor. Twenty-two percent of the students were found satisfied with the item Students bodies/ organizations, 40% find it very good, 20% find it good and 9% each find it fair and poor.

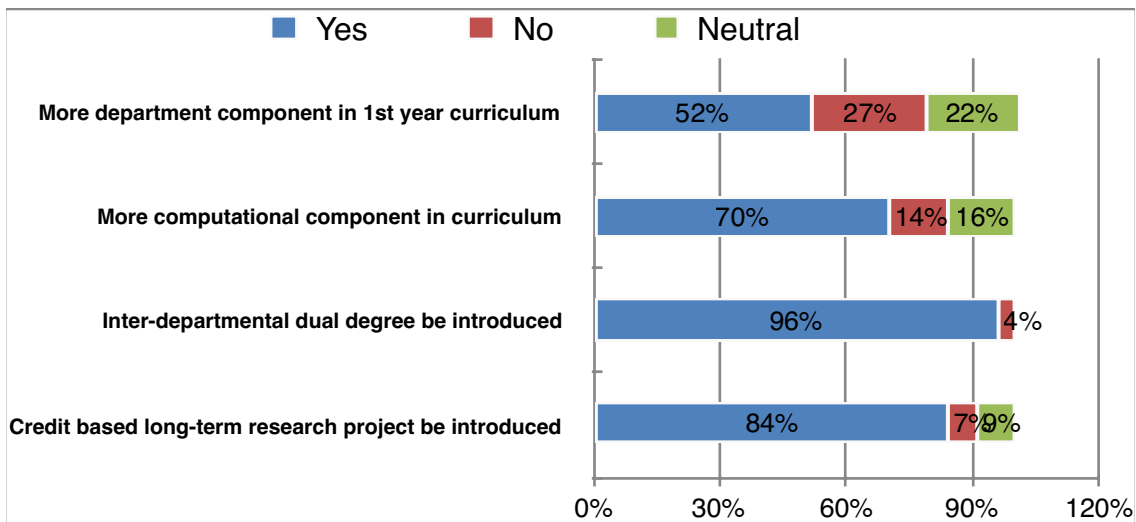
Overall, the students seem to be satisfied with the different aspects of their life inside the campus. A certain level of effort to improve the social life of the students may be given.

### 1.7 UG Students' Opinion on Academics

A scale containing four items was asked to measure students opinion on different aspects of academics such as curriculum, programmes, projects, industrial requirement etc. The items were measured on a three point scale of “yes, no and neutral. Presented in Figure 1.7 is the percentage of their agreement on each items.

A maximum of 96% respondents have agreed that “More inter-departmental dual degree programmes should be introduced” to all department to provide a greater width to engineering education. Introduction of “Credit based long term research project” has been supported by 84% students. Seventy percent of the students want “More computational/ programming component in their curriculum” which can be done by having more tutorials that involve computations. Fifty-two percent of the respondent agreed that they suggest more department component in first year UG curriculum to provide a better introduction to department engineering at the very early stage.

Figure 1.7 Students' response rate, on different aspects of academic curriculum



Overall, students support introduction of inter-departmental dual degree, credit based long term project and more computational component in their curriculum.

### Comment Analysis

#### Generating interest among UGs in academics:

- Reduce class size and encourage more class-room interaction
- Scaling down activities going on across the institute which hampers academic interest
- Leave should be approved by the course instructor to develop a seriousness in attendance and studies
- Regular projects and assignment based work rather than classroom teaching
- Make teaching more interactive through field visit, learn by doing, building simulation games, fabricating devices etc. to grip the attention of students
- Replace some course with audit courses for different departments to reduce the pressure and increase the interest
- Assign research mentors (PhD/PostDoc.) to the students
- Open access to attend research seminars and departmental talks and lectures

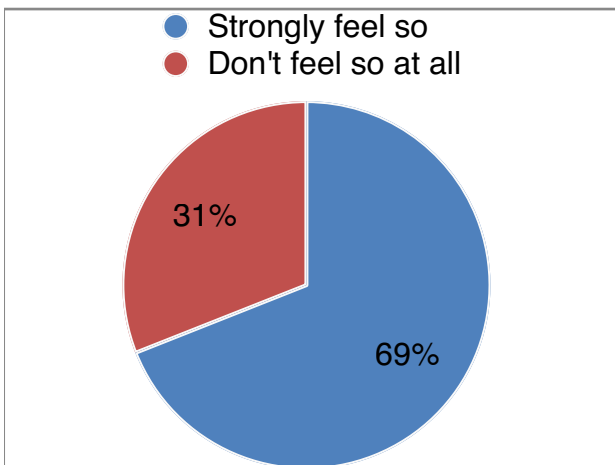
- Open lectures by professors to get students interested for their research projects, dissertation and thesis
- Decrease rote learning based exams and quizzes and introduce more practical approach of learning through tutorials
- Expose students from 1st year onwards to actual engineering aspects through industrial visit
- Sessions where interested students can tinker with devices they learn in class
- Department component in the first year to guide them which branch to study
- Make evaluation more qualitative and rewarding for students who attend regularly and take interest in the class
- Faculty advisor program should be more active with 10-15 students allotted under a professor who meet atleast once a month
- Professors very enthusiastic to teach should be retained to teach in the first year
- Inclusion of vocational and modern employable skill based courses like Web development, CAD ( in civil, mechanical), software in the curriculum as electives
- Include professional courses as department or institute electives taken by working professionals

**Ways to evaluate long-term research projects:**

- Regular evaluation by interdisciplinary panel of experts to ensure course correction and grade evaluation and could be similar to the way BTP is evaluated
- Time dedicated to project - based on attendance punching system like DDP students
- Research paper in journal/conference and different outcomes of research
- Interaction with faculty
- Final presentation in the department and to the panel

**1.8 Masters and PhD Students’ Opinion on Academics**

Figure 1.8 PG and PhD Students response rate, on redefining the role of Guide



The PG and PhD students were asked the question “How strongly do you feel the role of the guide needs to be redefined?”. It was measured on a binary scale of “strongly feel so” and “ don’t feel so at all”.

Figure 1.8 showed that most students (69%) strongly feel the need of redefining the role of guide. Only 31% PG and PhD students responded that they don't feel so at all.

Thus the result shows that most of the PG and PhD students want the role of the guide to be redefined.

**Comment Analysis**

**General opinion:**

- It has always been found that the social life of the Ph.D scholars to be very poor and negligible. Apart from the importance given to the thesis, points should also be given for individual physical fitness and social work work etc.

- There has to be a proper procedure or achievement of a set of parameters such as paper published, teaching experience, quality of work presented to the committee etc. to decide when the student can submit his thesis.
- International groups of the same research sphere can be formed and this will enhance the research atmosphere.
- Use of CDs and DVDs can be reduced, if a dedicated space is available in moodle, where students can store their results got from a machine and later download.
- A platform should be made where all can see, which machine from which department of the institution is not working, that saves time and creates atmosphere of accountability of maintenance and any student can register it.
- Married hostel availability be ensured with minimal time lapse.
- More collaborative research between IITB and other IITs, research institutes of India and foreign universities should be built.
- Efficient and effective review system for the faculties at a fixed interval of time after they join.
- Increase stipend and funding for conference
- Introduce faculty improvement programs.
- Avoid disparity in stipend policy. Its seen that some get stipend if faculty has project.

#### **Quality of coursework in comparison with any top foreign university:**

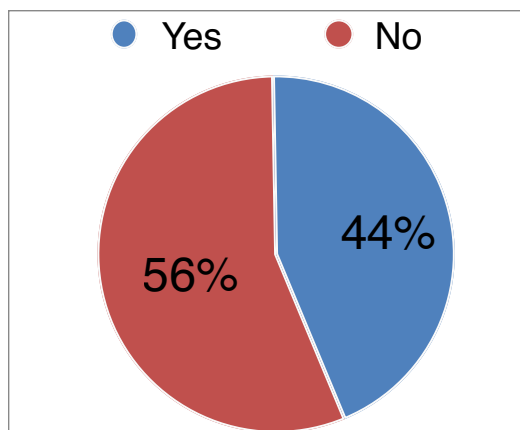
- Instead of introducing new courses by following the foreign universities, IIT Bombay can try to introduce new courses which are more relevant to our society, and technology and economical development in the respective areas.
- Even though the coursework is flexible to the students in the current system, the courses which are introduced newly should be evaluated many times and the impact of the coursework in the student's research should be analyzed.
- There should be specific courses and more advanced one should be run specifically for Ph.D students
- Interdisciplinary and collaborative research should be encouraged
- The coursework should be more application oriented involving real life situations, modeling and design, and problem solving through coding rather than just theoretical studies.
- The course structure or the pedagogy in few departments need revamp of the curriculum with more contemporary courses being introduced & teaching methods as well as attendance rules need to be improved.
- In few departments the quality of the electives are very low and the number of electives on offer in different domains is very less and should be increased in line with the industry.
- The amount of hands on practical component of courses like animation and film making is way less. Availability of flipped classrooms, MOOC like online components to catch up on missed components may be a good thing
- The student should not be asked to complete the course work in the first semester. Rather they must be given the time to identify and do the coursework related to their research interest.

#### **1.9 Ethical Standard and Personality Development**

The issues of cheating and plagiarism in educational settings have received a large amount of attention in recent years. Academic honesty among students was assessed to measure the academic integrity issues that exist in IIT Bombay.

Students were asked to answer the question “Do you think that Academic honesty is there among students?”. It was measured by a dichotomous scale of “yes and no”.

Figure 1.9 Students response rate, on academic honesty among students



The result presented in Figure 1.9 showed that 44% of the students believe that there is academic honesty among the students whereas, 56% believes in the lack of it.

Overall, most students believes that students lack academic honesty thus questioning the ethical standard among the students.

### Comment Analysis

#### Academic malpractices and ethical behaviour:

- Grades and subsequent placement are the main reasons cited for academic malpractices. This happens with students when they have no subject clarity, lack of interest in course, uninterested way of teaching, uninteresting assignment, laziness, liberal rules and pressure to clear courses.
- According to the students, the institute authority are ignorant of such practices.
- To restrict such activities CCTV should be installed in all classrooms, enforcement of stricter rules, more of teacher-student interaction, counselling students, open book exams, strict attendance, allow them to choose the courses, make them interested in the courses, mandatory course on engineering ethics and value based personality development courses and an environment where more importance should be given to learning and on improving the creativity of the student rather than on grades.

#### Improve all-round development in students:

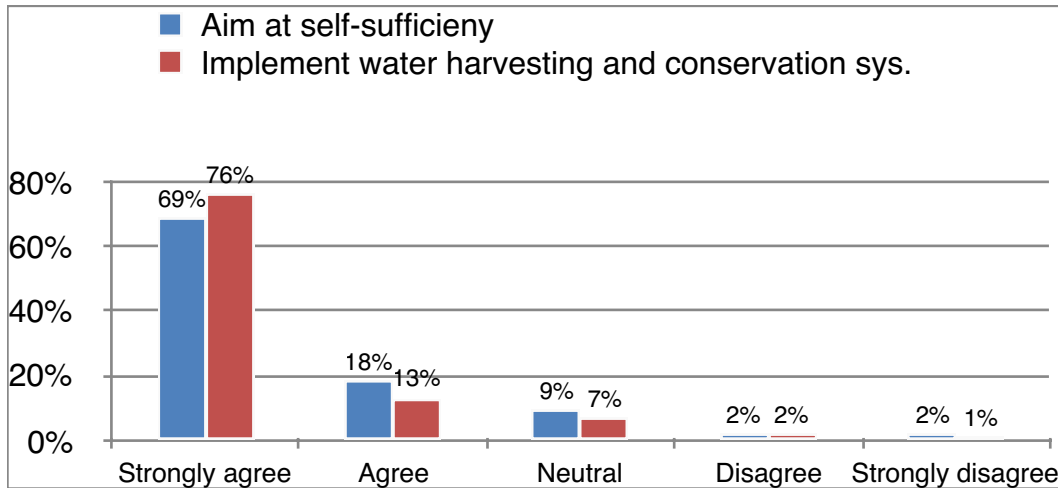
- Counselling facility need to be improved
- More engaging activities at departmental level
- Credit based compulsory extra curricular activities
- Career development counselling
- Personal and professional development programs
- Introduction of skill based programs
- Participation in NSS, GRA and other social activities/societal problems
- Most of the PG and PhD students face this problem due to their academic commitment and need help
- Better student-mentor interaction and having mentors from each area
- NSO is a great step in solving this problem.
- Diversification of courses.
- Assign senior buddies to first year undergrads based on their interests to give adequate guidance
- Encourage students to attend personal development course in the institute during vacation instead of asking them to leave the hostel

### 1.10 Campus Sustainability

Students have also indicated their desire for a highly sustainable campus. Two questions were asked under campus sustainability. The first question was “ Should we, as an insti-

tute aim at self sufficiency in terms of energy and recycling waste” and the second question was “Should the institute implement water harvesting and conservation system in the institute?”. Figure 1.10 showed that a highest of 69% respondents have strongly agreed to the first question and 76% have strongly agreed to the second question. A very small number of students have disagreed to both the question.

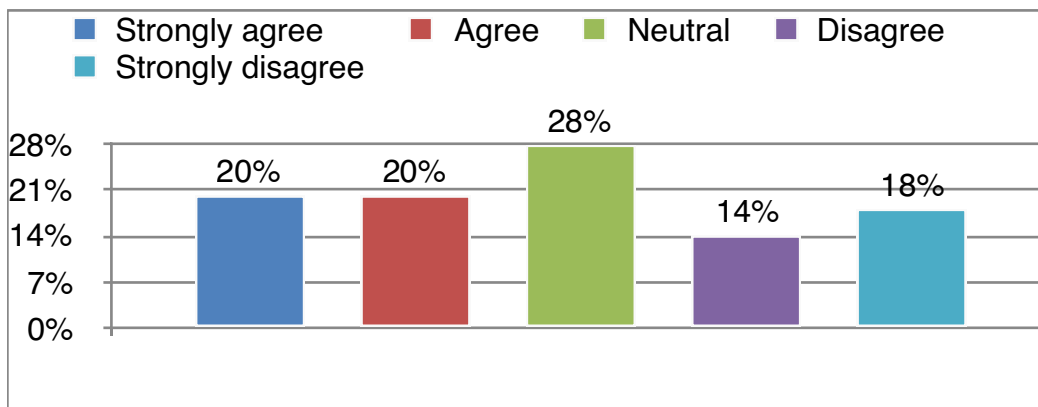
Figure 1.10 Students response rate, on self sufficiency of the institute in terms of energy and recycling waste



### 1.11 Broaden Educational Areas

Students were asked “How strongly do you feel that we should have more humanities and social science component in our engineering degree?”. Figure 1.11 showed the response on a five point likert scale of “strongly agree to strongly disagree”. It was reported that most of the respondents (28%) were neutral in their response, 20% strongly agreed , another 20% agreed, 18% strongly disagreed and 14% disagreed.

Figure 1.11 Students response rate, on broadening the educational areas at IITB



Overall, the result indicate students agreement on broadening the educational areas in IIT Bombay.

### Comment Analysis

#### Broaden educational areas:

- Many students feel that IIT Bombay should broaden its educational areas into subjects such as Medicine, Architecture, Finance, Fine Arts etc.
- Having a broader expertise would help in inter-department collaborations for research.

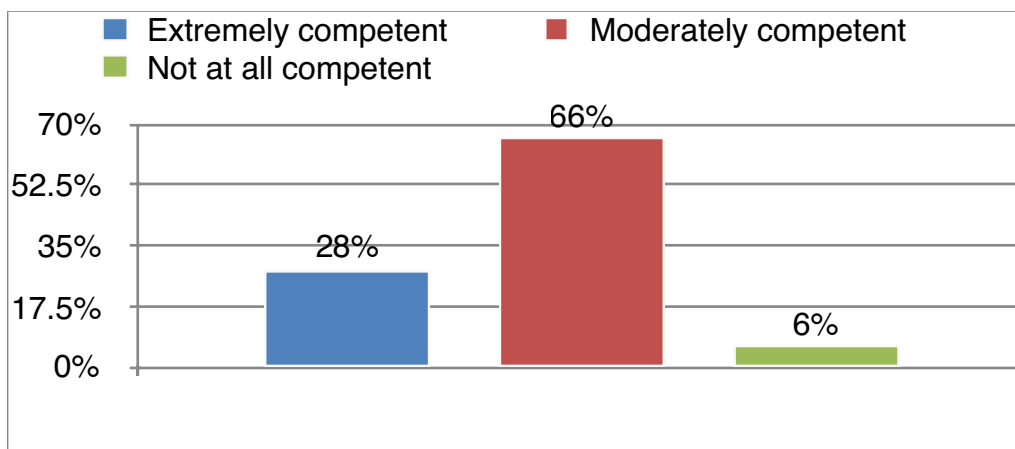


- Prime focus should be on engineering and technology, but other verticals (mentioned above) should also be opened
- Broadening will make engineering at IIT Bombay more inclusive but is advisable only after optimisation of engineering and technology areas
- Collaborative approach in different fields with technology as backbone

### 1.12 Students' Perception About Research at IIT Bombay

Students were asked "How they would rate the quality of research in IIT Bombay?". It was measured on a three point scale of "1=extremely competent, 2=moderately competent and 3=not at all competent". As reported in Figure 1.12, 66% of the respondents find research in IIT Bombay to be moderately competent, 28% finds it extremely competent and 6% find it not at all competent.

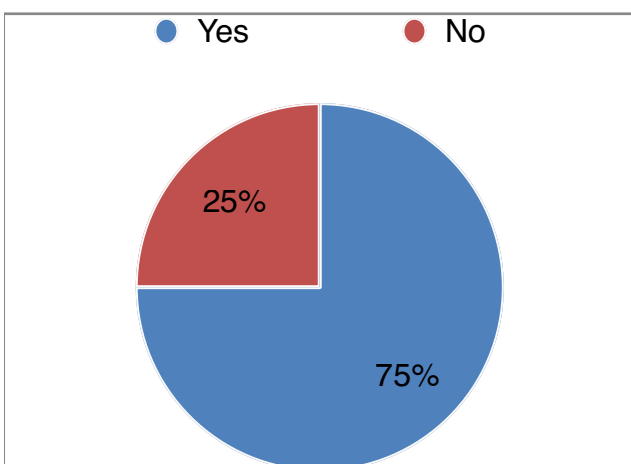
Figure 1.12 Students response rate, on the quality of research at IITB



Overall, the result shows that students perceive IITB to be competent enough in carrying out quality research.

### 1.13 Global Ranking

Figure 1.15 Students response rate, about perceptions on ranking of IITB



The subject rank of IITB in QS world ranking for Engineering and IT is 52 and the MHRD NIRF ranking is 2nd. On this context students were asked if "The institute document must explicitly mention that IIT Bombay should target to be one of the top Institutes in Engineering and IT". As presented in Figure 1.13, 75% respondents agreed that IITB must target to be one of the top most institutes in Engineering and IT, and only 25% refused the attempt to do so.

Overall, this shows that students want the institute to work towards ranking and be acknowledged in the global fora.

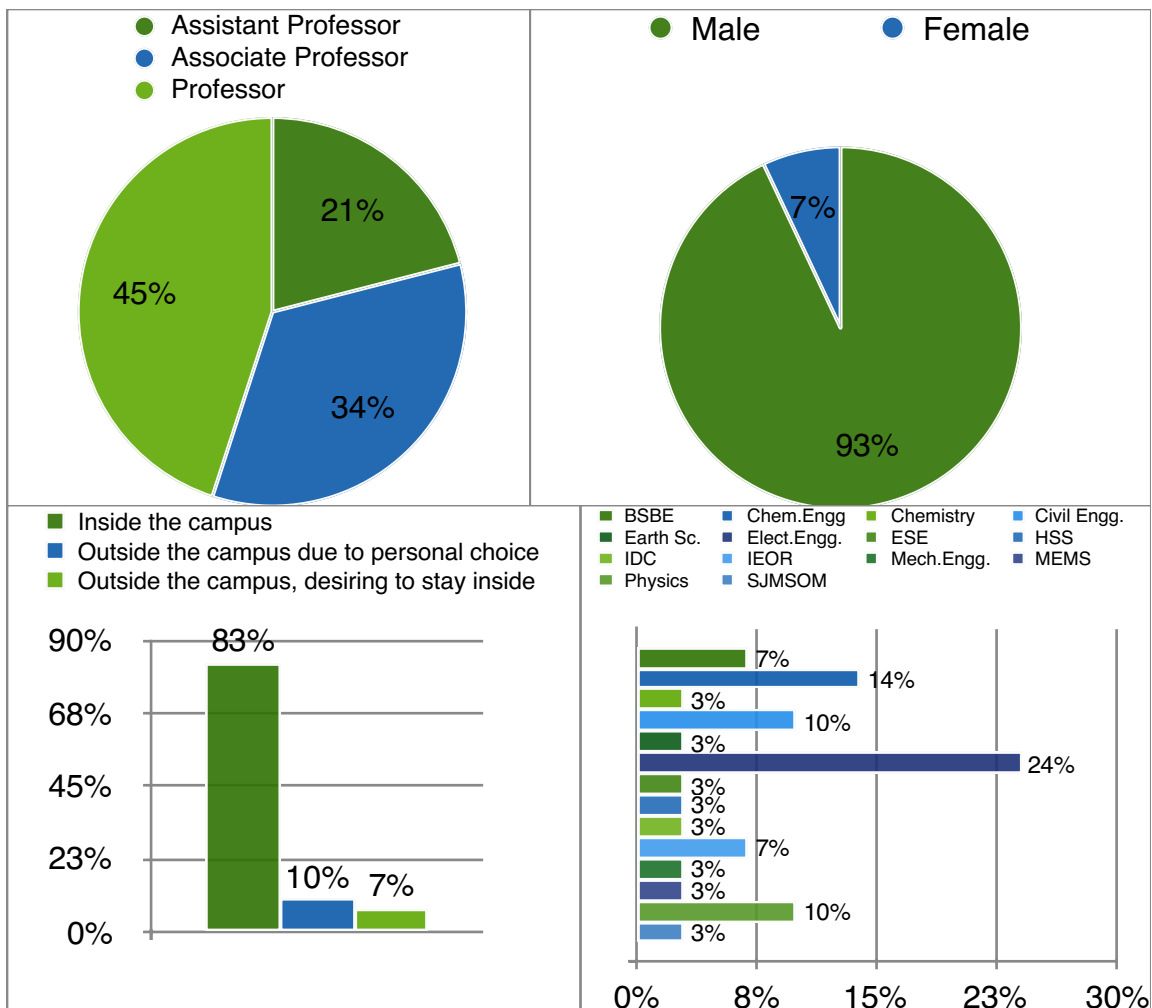
## 2. Summary of Faculty Feedback

The Faculty feedback (see Annexure 2) survey aimed to measure the level of faculty satisfaction with working conditions, professional development, type of responsibility undertaken at IITB and their opinion on the draft strategy document in order to support decisions for making the Institute a better place to work. The summary of the feedback from the faculty was received through online web-based survey is mentioned below and the feedback received from other methods such as “department faculty meeting, young faculty focus group meeting and discussion with Fellows of Academies is mentioned at the end of the report.

### 2.1 Online Survey-Faculty Response Rate

A total of 84 faculty members responded, yielding a 14% response rate. Figure 2.1 illustrated the total number of faculty members who responded to the survey by their affiliation, gender, place of residence and by the department they belong to. Out of a total of 84 respondents, 45% were full professor, 34% were associate professor and 21% were assistant professor. A significantly small percentage of respondents were female (7%) as compared to 93% male respondents. Maximum respondents (83%) stay inside the campus, 10% stay outside the campus due to their personal choice and only 7% respondents stay outside the campus but given a chance would like to stay inside the campus. The faculty desiring to stay inside may be young faculty who are staying outside due to the current accommodation shortage. Most of the faculty who responded to this survey were from Department of Electrical Engineering (24%), followed by Chemical Engineering(14%) and Civil Engineering (10%) respectively.

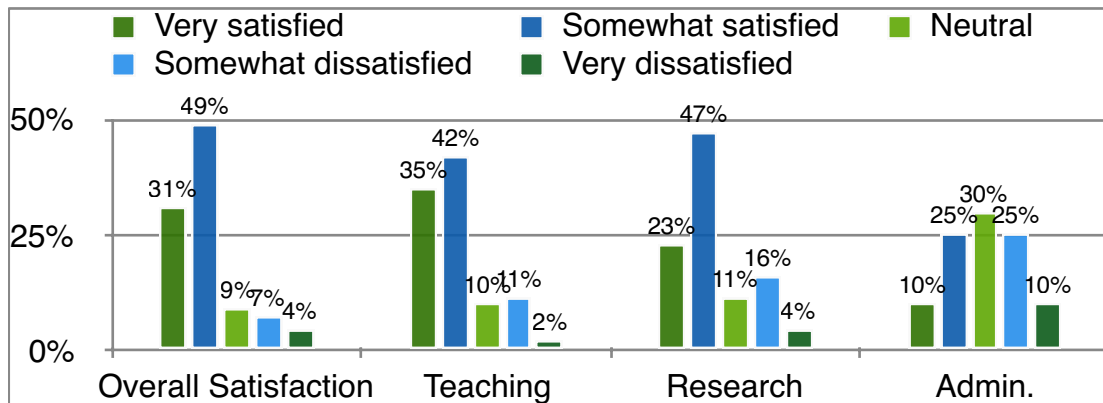
Figure 2.1 Faculty response rate, by affiliation, gender, place of residence and department



## 2.2 Level of Satisfaction

A scale containing four items was asked to measure faculty satisfaction on the different roles they carry out at IITB. Presented in Figure 2.2 is the percentage of satisfaction level on each of the four items on a five-point scale where 1=very satisfied and 5=very dissatisfied.

Figure 2.2 Faculty response rate, on overall job satisfaction, teaching, research and administrative responsibilities



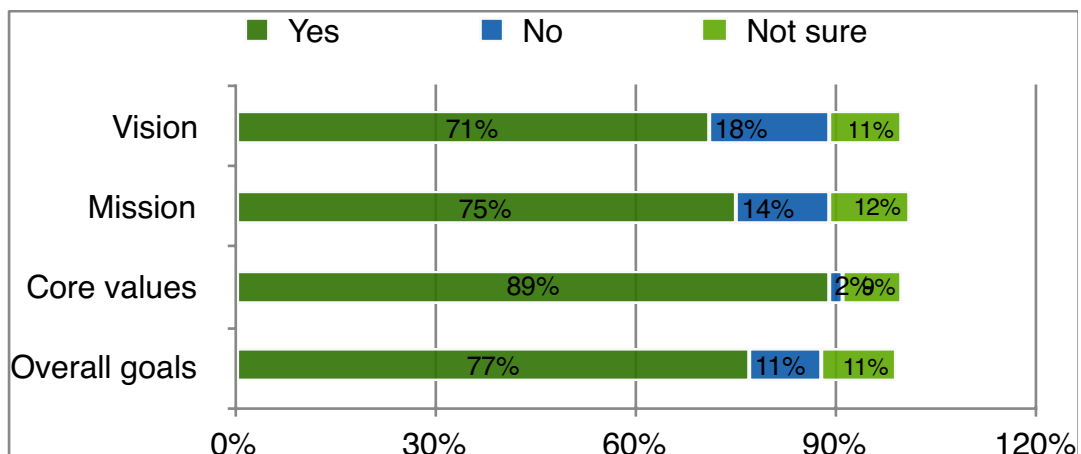
The first item of this scale asked faculty their “Overall satisfaction” as a faculty member at IITB. Forty-nine percent said that they are somewhat satisfied and 31 said that they are very satisfied. Satisfaction level was measured on the next three items which were “Teaching, Research and Administration responsibility. Most of the faculty were found to be satisfied with Teaching (77%) and Research (70%). However only 30% faculty were found to be satisfied with their Administrative responsibilities, 30% were neutral and another 30% were dissatisfied.

The result illustrates satisfaction on overall job, teaching and research. However, not many faculty member are happy with the administrative responsibility assigned to them.

## 2.3 Agreement on Vision, Mission, Core Values and Overall Goals

A scale containing four items was asked to measure faculty agreement on the “Vision statement”, “Mission statement”, “Core values” and the “Overall goals” stated on the draft strategy document. Presented in Figure 2.3 is the level of agreement on each of the four items where faculty had to show their agreement or disagreement with the items with a “yes”, “no” and “not sure” options.

Figure 2.3 Faculty response rate, on vision, mission, core values and overall goals



A highest of 89% respondents agreed with the “Core values”, 77% agreed with the “Overall goals”, 75% agreed with the “Mission statement” and 71% agreed with the “Vision statement”.

This shows a overall consensus with the above statements. However, minor modifications were also suggested by the faculty members which is mentioned in the comment analysis section below.

### **Comment Analysis**

It is perceived that as an Institution, we seem not to care much about the academic rigour at research level. It is viewed that publications and number of PhDs are more important than asking an intellectually challenging question which will have a long lasting impact. It is also sometime misunderstood that building the best infra-structure facilities would drive the quality of research. Although these are required for a conducive research and teaching environment, it is also important to build intellectual infrastructure.

Many faculty also think if it is sufficient for IITB to overflow with ideas and technology, the way it is now. The real challenge is considered to recognise the relevance of these ideas and technology which may lead to a significant change in the society, a change whose contribution could be measured. Hence its important to recognise the problems which we can define and seek solutions. Sometime these solutions mayn't lead to research but have a valuable outcome for the society. IITB should be committed deeply to “impact”. It very important to promote and account such work.

The location of IITB in Mumbai, a traditional entrepreneurial hub of India, provides it some unique opportunities. It was suggested to envision a Powai brimming with engineering ventures, with IITB being a fountainhead, with participation from investors and others all working with a common purpose of trying out new technologies/solutions to address massive challenges that exist in India.

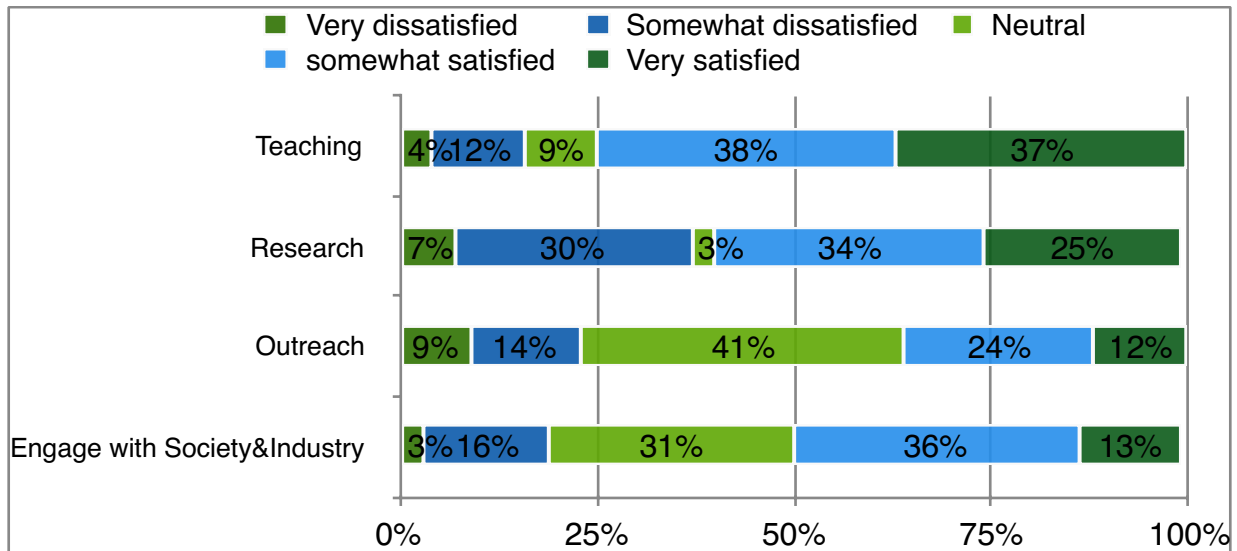
These are the most difficult aspect of building a good academic Institute. With these thoughts in the forefront, faculty members have submitted many comments and suggestions on the vision, mission, core values and the goals. Some of the comments/suggestions are mentioned below:

- Too many visions in the single vision statement. For example, "To be a leading global technology university" "provide a transformative educational experience" "to create leaders and innovators" "generate new knowledge for society" " and industry"
- Incorporate data in the document (reserved seats, drop-out rates, students & faculty from weaker section of the society...)
- Prioritising of the list of goals and need for the strategy to revisit every 5 years with an assessment and suitable modifications
- It is not sufficient to say Global technology university as the scope of the plan outlined for generating "new knowledge" is beyond “technology”.
- For Society and Industry: Industry to be considered as a subset of society
- Why create only leaders and innovators, why not responsible citizen?
- National importance/need to be clearly stated
- "Rigorous pertinent training" more appropriate than "rigorous coursework"
- The document should address ' weaknesses, and threats' that we perceive
- Target projects from ISRO, DRDO etc. as they will be funded project and relevant to the country
- Called for urgent green audit

## 2.4 Satisfaction On Resources Provided By IITB

A scale containing four items was asked to measure faculty satisfaction on the different resources provided by IITB to fulfil their job requirement. These resources are “Teaching, Research, Outreach and Engagement with Society and Industry. Presented in Figure 2.4 is the percentage of satisfaction level on each of the four items which were measured on a five-point scale of 1=very dissatisfied and 5=very satisfied.

Figure 2.4 Faculty response on satisfaction with the resources IITB provides to support your teaching, research, outreach activities and engage with society and industry

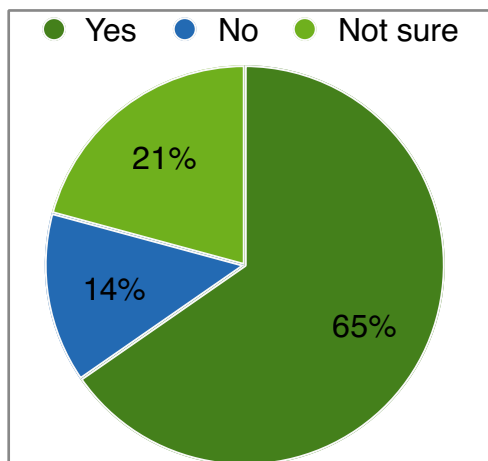


A maximum of 75% respondents were satisfied with the Teaching resources followed by Research (59%), and Engagement with Society & Industry (49%). Faculty find the least satisfaction with resources provided by the Institute for Outreach.

Overall, faculty members shows satisfaction with the teaching resources followed by research resources and engagement with society and industry.

## 2.5 Agreement with Action Points of Goal1

Figure 2.5 Faculty response rate, on agreement with action points of Goal1



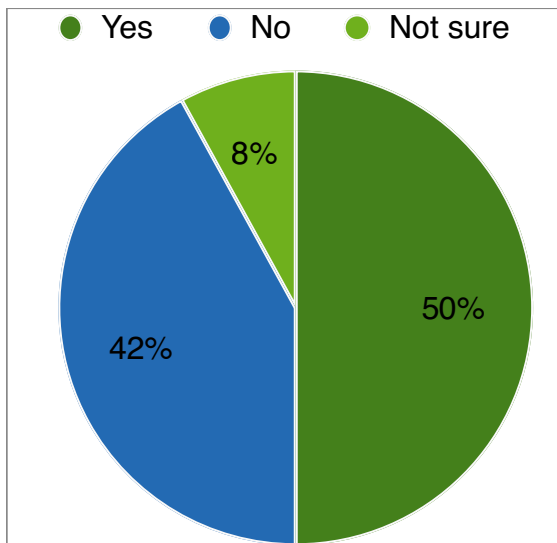
The first goal mentioned in the draft document is “Engagement with the society and industry”. The respondents were asked their level of agreement on the action points of this goal. It was measured on a three point scale of “yes, no and not sure”.

Sixty-five percent of the respondents said “yes”, 21% were “not sure” and only 14% said “no” (see Figure 2.5).

Overall, this shows an acceptance of the action points of Goal 1 by a majority of the respondents.

## 2.6 Broaden Educational Areas

Figure 2.6 Faculty response rate, on adding new disciplines



IITB is now actively involved in many interdisciplinary programmes and believes in taking it further. On this context, faculty members were asked the question “The vision document suggests adding new disciplines such as medicine, finance, law, fine arts and architecture, film and media. Do you agree with it?”.

Presented in Figure 2.6 is the percentage agreement on a three point scale of “yes, no and not sure”. A highest of 50% agreed to broaden the educational areas. However, an equally big portion (42%) of the respondents refused with the idea of broadening the educational areas. Overall, most faculty members support broadening the educational areas in the institute.

### Comment Analysis

The main strength of IITB lies in science and technology education, and research. However IITB is yet to excel in its core strength in the global scenario. In spite of this IITB has been interdisciplinary in its approach as it establishes department such as HSS, SOM, Mathematics, BSBE and Centres such as Climate change, educational technology etc. This implies that IITB has always supported a diversified course offerings.

Establishing new departments and centres is not enough. It's seen that many of the departments are not running successfully. The institute must revisit these departments/programs and close those decaying, and enhance if running successfully.

However in the recent times increasing number of students and lack of resources to meet the need of the student, has put pressure on the institute. Additionally as the institute enters 60 years of completion, it has to brave the crumbling infrastructure. All the departments and the campus requires a makeover.

Thus the very mention of more interdisciplinary programs such as Finance, Film making etc. in IITB stirs the mind of faculty members with many different thoughts. Some of the suggestions given by faculty members are:

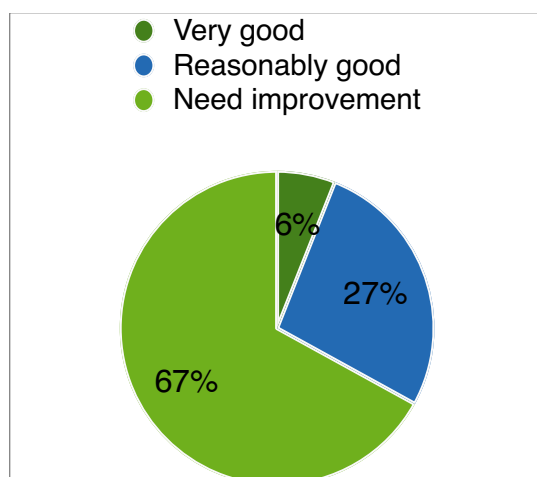
- The current campus is not sufficient to do this and splitting campus may not achieve significant interactions and overlap. There are several other Indian universities that excel in these. A closer interaction with them, while maintaining our excellence in engineering would be the best
- While technology is obviously valuable, it is too narrow to create the idea of a university. To transform an 'institute' to a university, more diversity is needed. This also attracts different skill sets and therefore diversifies campus and scholarship and research. Film and Media studies happens in practice-oriented schools (as in Indian Film and Television Institute, Pune) or analysis-oriented departments in faculty of Arts/HSS (as Film Studies). There has been a suggestion of an expanded 'School' of Humanities and Social

Sciences, which can accommodate Film Studies/Cultural Studies. In that context, please note that disciplines of History and Political Sciences have repeatedly come up as problematic gaps in a department named HSS and they have been on the table for a long time.

- Space crunch would certainly come up as a hindrance unless a new second/satellite campus is possible.
- One way around the problem may be to add newer disciplines to existing facilities for the time-being in smaller ways and expanding them as far as and when possible. Finance to SOM, Fine Arts to IDC, Media and film studies to either IDC (if practice based) or HSS (if analytical) may be possible, Architecture (unless IDC wishes to make room, Civil would likely refuse), Medicine, and Law are admittedly bigger beasts.
- My suggestion is rather to identify important and relevant courses from the society's perspective-e.g. course on mass communication; sports engineering, etc. The organisation of the institute should be such that we are able to identify such societal needs and organize degree/diploma programs (and not only short-term courses) to meet these requirements. After offering these programs for sometime, we should be able to close these programs (here I am not talking about closing down our core engineering depts. rather course on mass communication; sports engineering, etc.) and offer other relevant programs. The committee should look into this suggestion to see if this makes sense. If yes, how it can be facilitated.
- These new disciplines should not be a distraction or an easy way out for engineering students. The students in second year B.Tech. come to me and say they are interested in Finance, and not interested in Engineering. It's a cause for concern as IITB is still primarily an engineering school.

## 2.7 Improve Internal Support Systems

Figure 2.7a Faculty response rate, on IITB's effort to provide infrastructure



Three questions were asked to measure faculty perceptions on the infrastructure and support they get from the institute. The first question asked was "IITB now has 10,000 students, 600 faculty and 1225 staff members on its rolls. Rate IITB's effort to provide infrastructure". Presented in Figure 2.7a is the classification of responses in a three point scale ranging from "very good, reasonably good and need improvement". A highest of 67% said that the infrastructure of IITB "need improvement" and 27% finds it reasonably good and only 6% agreed that the infrastructure provided by IITB is very good.

The second question asked to the faculty was "The document discusses ways to improve support for research projects. Do you agree with the suggestions?". This was related to the Goal 3 of the draft strategy document and was measured on a three point scale of "Yes, no

and not sure”. The figures reported in Figure 2.7b showed that 71% of the respondent said “yes”, 16% were “not sure” and 13% disagreed to it.

Figure 2.7b Faculty response rate, on suggestions mentioned in Goal 3

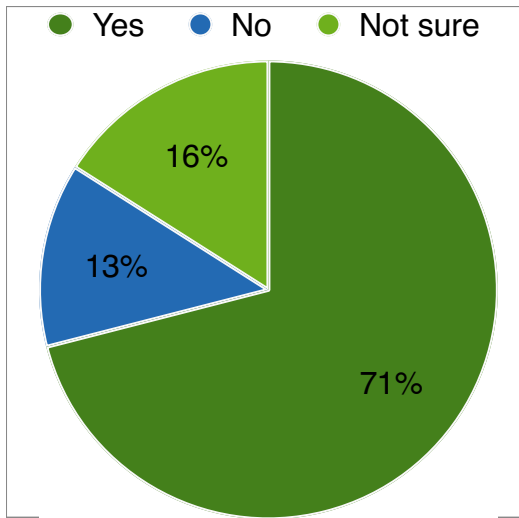
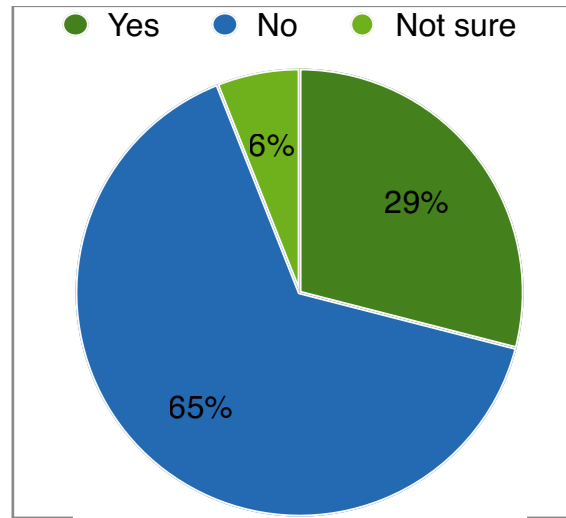


Figure 2.7c Faculty response rate, on the infrastructure provided to PhD students



The third question asked to the faculty member was “Are you satisfied with the facilities provided to the Ph.D students, such as housing, lab & office space, library and computer facilities?” on a three point scale of “yes, no and not sure”. Figure 2.7c reported that 65% of the faculty were not satisfied, 29% were satisfied and only six percent were not sure.

The result indicates that the present infrastructure need improvement, the faculty members have agreed to the suggestions mentioned in Goal 3 of the strategy document and most faculty members are nor satisfied with the facilities provided to the PhD students.

### Comment Analysis

#### Addressing Pressure on Infrastructure:

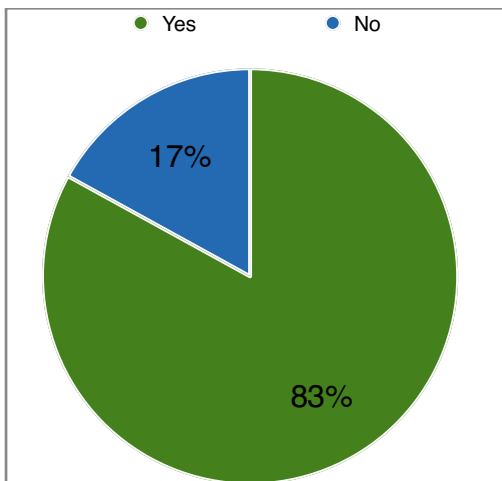
- I think we also need to inculcate sense of ownership so that the existing infrastructure is better utilised and better maintained. Just constant additions will not alleviate the current levels of frustrations.
- Having readily available skilled, 'can-think-on-feet' support staff is useful. Comments: 1) Typically, I believe, at the Institute level, contract for casual labor force in different years may be with agencies, but nearly same set of personnel -- with poor skills -- are available in each of these agencies. Unless a completely different model is worked out, facilitating skilled services can be a challenge, let alone retaining them, given that they are unlikely to be permanent. 2) Can we pay them on par with industry? Good (temporary) staff leave soon as they find better paying jobs. 3) Are there learning component for a staff in such a position? It will be useful to assess how many current project staff (with such skill) actually stick around say for >2 years. Current project staff actually get trained in the project.
- All I can see is this: IRCC should maintain a team of such staff. I feel getting high quality staff is a problem that needs to be addressed in other ways (such as outsourcing, not in the usual model---but something in between, which also provides for a social welfare for people working in IITB).



- The corridor should be removed. Ever since i came here, institute has been spending quite a lot on repairing. It should be abolished and class rooms or office space can be constructed.. This would avoid encroaching other open space. Civil construction work has caused more of a problem than solution. I think we have lost the opportunity to build a good civil infrastructure.
- I would like to see that every student gets single room in the hostel which I could not see in the document. 2. SMART campus 3. Cycles for all in the hostel with maintenance facility 4. A rain free ( covered ) corridor from all the hostels to the academic area with sitting arrangement in between.
- Major changes are expected in this area..else faculty spend lot of time on following these up...currently highly inefficient. Manpower who appreciate academic environment and take pride in the institute and academic achievement of faculty is need of the hour. We need to create that environment, the onus is on us.

## 2.8 Students Experience in IITB

Figure 2.8a Faculty response rate, on out of class student-faculty interaction

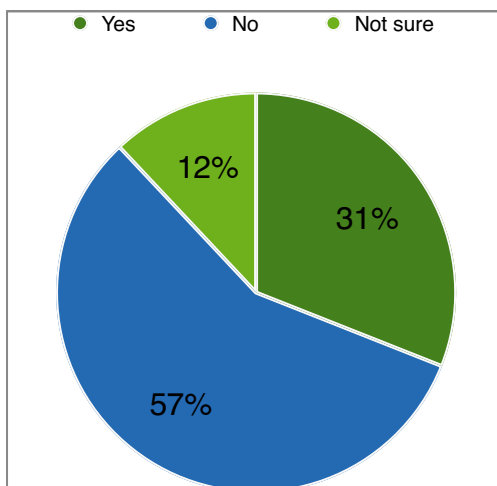


Three questions were asked to the faculty which were related to the students experience in IITB. The first question asked was “Do you agree that the out-of-class contact with undergraduate students is decreasing?”. Figure 2.8a illustrates the response on a binary scale of “yes and no”.

A highest of 83% have agreed that out of class interaction is reducing and only a 17% respondents don't agree to that.

Overall, most faculty agree that out of class interaction with students has decreased.

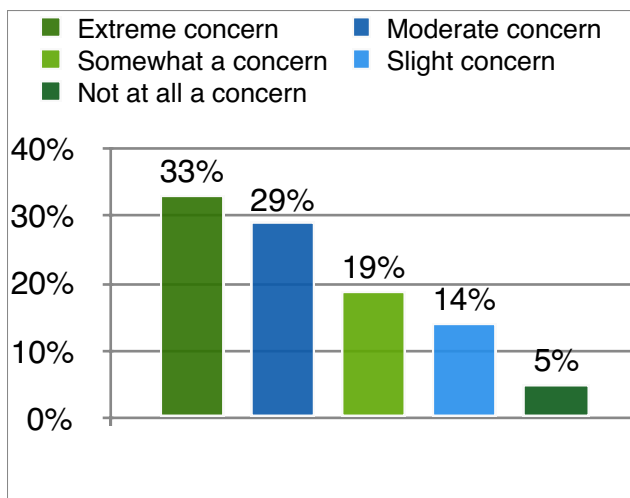
Figure 2.8b Faculty response rate, on adequate infrastructure for PhD students



The second item inquires about the faculty opinion if “IITB have adequate infrastructure to provide students (BTech, MTech and PhD) with an excellent (overall) student experience?”. It was measured on a three point scale of “yes, no and not sure”. Figure 2.8b showed that more than half of the respondents feels IITB doesn't provide adequate infrastructure to the students with an excellent experience, 31% agree and 12% were not sure.

Overall, most respondents feels that IITB must provide better infrastructure to the students for an excellent student experience.

Figure 2.8c Faculty response rate, on ethical concern among students



Instances of cheating, copying and using unfair means to do well in the exams were seen. The third question asked was related to the failing ethical standards among students. Faculty members were asked “Do you believe that the ethical standards amongst the students is a concern for the institute?” on a five point likert scale of “1=Extreme concern and 5=not at all concerned”. Thirty three percent respondents said they have extreme concern, 29% had moderate concern, 19 had somewhat concern, 14% slight concern and 5% were not at all concerned (see Figure 2.8c).

Overall, more than 50% faculty members showed ethical concern among students.

## Comment Analysis

### Faculty-student interaction:

- Force some discipline and minimum performance among faculty in terms of number of lectures taken, topics covered, showing up in the lab, etc.
- I see that most of the first year students are forced out of their hostels in the academic breaks. That speaks very poorly of the campus infrastructure. Some foresight and vision is required to build infrastructure capable of handling students, as the student number is only going to increase. Academic breaks are times when faculty are also relatively free and it is during this time that the interaction can be strengthened and built up.
- Pedagogic activities need to include those beyond classroom lectures. This would require flexibility in the grading and evaluation system.
- Reduce class size (30 is ideal, 60 is max), more tutorials in smaller batch.
- We should have platforms for informal interactions and free slots in the time table for free explorations by students in association with faculty. Reduce the course load of both the parties and increase such informal interaction slots.
- The use of Moodle for instruction and computers for most of the administrative processes has eliminated the need for an out of class interaction between the faculty and the student. With increasing use of electronic media for instruction, we are driving towards a class of 'faceless students' being taught by 'faceless faculty' as neither needs to have seen each other. Hence a conscious deployment of technology in instruction and learning strives to minimise interaction between faculty and students. By our actions, we seem to believe in NOT having any personal interaction than in having it.
- An out of class interaction can always be enhanced by taking up projects by a group of students and faculty to work on enhancing the infrastructure in the Institute, or any constructive objective that is in line with the goals and mission of the Institute.

- Providing lounge-like environment within academic areas and retaining people there for a longer time is the easiest way of enhancing the interaction.
- We may have student-faculty interactions department and year-wise once in a calendar year (such as happy hours).

### **Facilities provided to the Ph.D students:**

Most faculty are of the opinion that Research Scholars are the pride of the Institute and they should be made to feel that way, then only excellence will emerge. One of the thing that all the faculty agree on is to provide good facilities to the research scholars. The main issues lies with housing, laboratory, computing facility, office space and accommodation for married scholars. Most of the students staying outside spend much of their time in managing things required for their stay. With proper support from the Institute their PhD duration could be reduced. Sometime if PhD students were required to stay in the Department, then it become a problem. They should get a place in the department - with a common Tea/snacks facilities where all the students can exchange their ideas. The TA responsibilities are taking a toll on their performance as students. The number of hours, what is expected of them, how to air their grievances, etc, need to be clearly spelt out.

### **Ethical concerns**

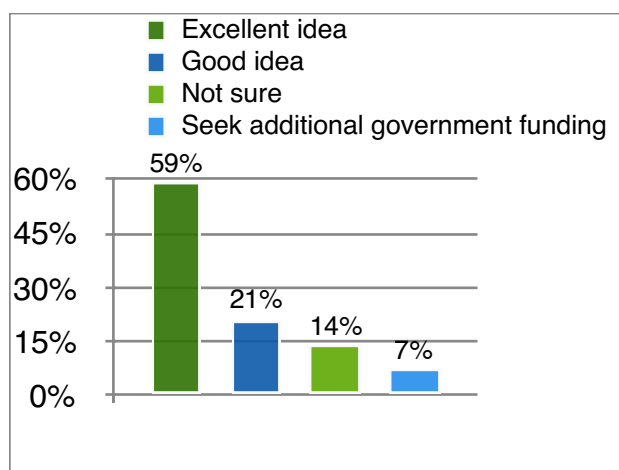
Rampant copying and plagiarism has been observed by faculty members many times and action has been taken on repeat offenders. The reason for this behaviour has been cited as lack of time the students spend on studies. Many students spend a significant time in non-academic work. The availability of resources on the internet encourages student to take short-cut at the cost of their creativity and interest. Some sample comments and suggestions are mentioned below:

- Teaching and Evaluation standards among faculty needs improvement.
- I have observed many times and have taken action against repeat offenders. Certainly uniformly implemented policy on this aspect will be of use. Major issue is that when students join the Institute (esp. in the case of UG students), they are still juvenile and are not well informed about such matters. So a carrot-and-stick model may be needed.
- Not much worse than the prevailing norms overall, but we do expect better. Homework is very rarely given and evaluated, partly because of widespread concern about ethical behaviour in submissions. This is probably a very serious hurdle to overcome, if we wish to have rigorous coursework
- The students seem to have the idea that they can take the risk. If one is caught the process of punishing the student is so long that perhaps colleagues give up after giving some warning to the student. Also, there is no co-ordination of the data of the regular defaulters. A student might cheat for each course but for an instructor it might be the first offence of the student. So the student gets away.

### **2.9 Broadening the Funding Base**

The institute feels that the current non-MHRD grants constitute about 45% of the total in-flows and there is a need to increase this further, especially given the increase in the range of activities.

Figure 2.9 Faculty response rate, on broadening the funding base



Illustrated in the Figure 2.9 is the response to the question “if apart from MHRD fund, IITB should attempt to broaden its funding base?”.

A highest of 59% responded that its an “excellent idea”, 21% said that its a “good idea”, 14% were not sure and only a negligible respondents said that IITB must continue to “seek government fund”.

Overall, most respondent agree with the idea that IITB must attempt to broaden its funding base

### Comment Analysis

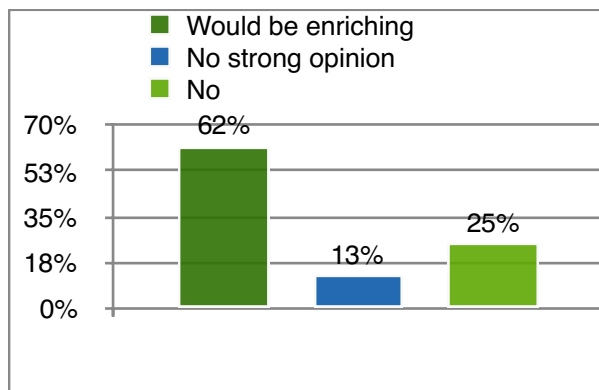
Respondents were asked the question “The document suggests SIX actions points to meet this goal. Do you broadly agree with them?”. It refers to the goal “Broaden Funding Base” in the draft strategy document. It is one of the most important goals as without attempting to achieve this will weaken our effort to achieve the rest of the goals in the document. IITB need to be truly autonomous in all sense and should constantly devise methods to augment resources. Faculty members need to be encouraged to get funding, especially that which contributes to overhead expenses of the institute. Clarifications were asked on the action point related to non-subsidised master’s level courses and professional courses. If the primary goal of IITB is research then it was suggested not to increase the post-graduate fees. Research Park came in as a good source of breaking the barrier of attracting external funding and doing meaning full research. Some of the sample comments are mentioned below:

1. I am assuming that these are for the next 3-5 years. If not, these numbers are too conservative. Timeline to achieve the targets should be defined.
2. I dont think MHRD expects to make a profit. I think we are delivering less value to society and hence the focus on the finances. I think the IITs can deliver much more societal value and MHRD could be quite happy supporting us.
3. We need to spend quite a bit of time on enhancing grants. DBT/DST have also become inefficient, take incredible time to process files. Industry also do not provide funds in a timely manner, may be a slightly better. We need to change and become relevant to industry so that we engage more with private party.

### 2.10 Attract International Students and Faculty

The survey instrument asked the faculty response to the question if “IITB should seek to attract international students and faculty?”. The response was on a three point scale, classified as “would be enriching, no strong opinion and no”.

Figure 2.10 Faculty response, on seeking international students and faculty



The result is illustrated in Figure 2.10 on the left. It showed, a highest of 62% respondents think that it would be enriching to attract student and faculty to IITB. However 25% said “no” to this Goal and only 13% had no strong opinion on this.

Overall, the result shows that faculty want international students and faculty in the IITB as they believe that it would enrich the campus.

### Comment Analysis

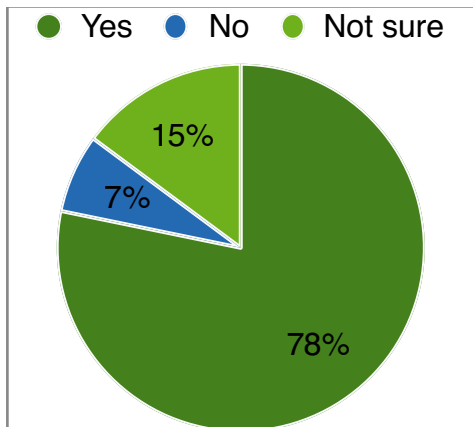
We have 25 MoUs signed with Universities all around the world and only 40+ international students and hardly any faculty presence in the campus. This need serious effort from IITB to attract students from abroad. Sample comments given by faculty members on this context are mentioned below:

- Attracting and/or hosting international students demands significant resources and these resources can be utilized to provide better experience for our own students / take many more of Indian students. We may lose out on rankings but our mandate is not to be #1 at this cost
- International faculty may not be needed. Instead, we can have more conferences in focused areas. The type of conferences NCBS organises- for example. Instead of students going abroad for conferences, that amount can be spent to organize small conferences, where faculty come from outside and give lectures. I personally feel that the idea of funding students going for international conferences be stopped. It is a major drain on time, funds, administrative load. The returns are zero. In fact it is a mere waste of time. The same set up can be used to encourage people organize small conferences and all the students get the benefits.
- I understand that diversification is an important part of education and growing up, but am hesitating to agree with us hosting international students. We have tremendous pressure on resources as it is, and plenty of deserving candidates who don't make it in. I would rather have students from regional colleges visit and spend a semester/year at IITB. Faculty visiting is a welcome idea as long as they agree to spend at least a year (full time). Ceremonial visits for weeks/months are a waste of everyone's time, and should not be entertained at all.

### 2.11 Improve Research Quality

The next question asked to the faculty members was “Do you broadly agree with the four major steps to improve the research quality of IITB?”. This question was asked in the context of the action points mentioned in the Goal 7 of the draft strategy document. The response was measured on a three point scale of “yes, no and not sure”.

Figure 2.11 Faculty response on agreement with action points of Goal 7



Results reported in Figure 2.11 showed that 78% respondents have agreed to the action points, whereas only 15% said they were not sure followed by 7% who disagreed with the action points of Goal 7.

Overall the result suggests that most of the faculty members agreed with the action points mentioned in Goal 7 of the draft strategy document.

### Comment Analysis

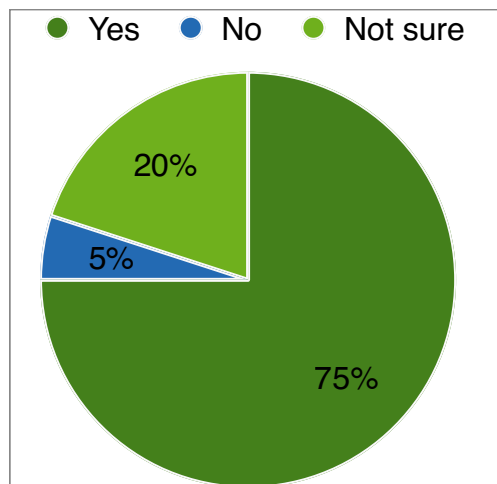
Some of the sample comment to the question “Do you broadly agree with the four major steps to improve the research quality of IITB?” are mentioned below:

- I find it a bit odd to have a target for "citations" and "h-index" at Institute level -- perhaps it is just my personal bias about/against these metrics.
- The most important ingredients, according to me, for quality of output in research are {ability, intent and integrity} of faculty members and students. We suffer from a significant issue that in the "ability" as well as "intent" dimensions of a large number of our students. This is to do with IITB/India being seen as a pit-stop as opposed to a destination. Currently we are in a bit of a race to meet numbers (such as # of PhDs graduated) with little emphasis on quality. And this race is doing more harm than good. The recipe to quality work is to have a set of projects running which capture the imagination of the brightest in the country that's potentially going to "change the world". Without that we are likely to remain a pit-stop since there are greener pastures elsewhere. And the best don't pay too much attention to pit-stops.
- There should be more funding. The output cannot be expected to improve linearly the very next year. there should be a sustained effort. if a policy is taken, it should be there at least for five years. For example, after hours of deliberations it was decided to have two minimum papers for PhD. Later on it was dropped. At least hundreds of man hours are lost. One should not bring in too many changes in the academic regulations. Whatever existing rules be strictly implemented. The system cannot be so dynamic that the regulations keep changing every year. By changing these rules, we cannot improve the quality. Give more time to the faculty to do teaching and research, this is not happening in IIT. We are constantly on the run.

### 2.12 Creation of Leaders and Innovators

This question on the survey instrument was related to the Goal 7 of the draft strategy document. The question asked was “Do you broadly agree with the action points for creating future leaders/innovators?”. Figure 2.12 presented the response on a three point scale of “yes, no and not sure”.

Figure 2.12 Faculty agreement on the action points of Goal 7



A highest of 75% respondents agreed to the action points whereas a small subset of the respondents said that they were not sure (20%) followed by only 5% who don't agree with the action points.

Overall, there was a consensus among the faculty members on the action point of Goal 7 mentioned in the draft strategy document.

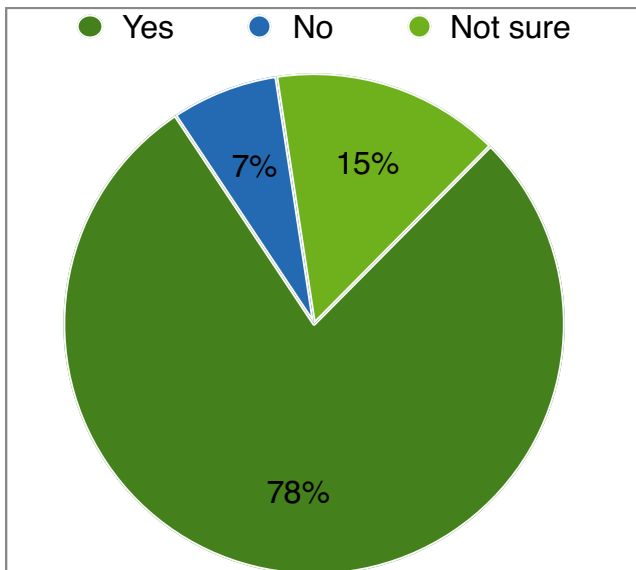
### Comment Analysis

Sample comments given by faculty on Goal7, Creation of Leaders and Innovators is mention below:

- Some of the aspects in the action points are, I would think, natural ability of a person. Institute can at best facilitate shaping up these skills. The write-up sort of gives a feeling that leaders can be created. I guess the idea is to 'Create a platform' for 'Future Leaders/ Innovators'; if so, the title and the content could be modified accordingly.
- A crucial ingredient that can shape future leaders is for them to be engaged in a serious project while they are at IITB. I consider this essential ... Are we going to be able to give a large number of students such opportunities?
- Who wouldn't agree. But right now we seem to doing all the opposite things! We have hordes of copiers, team skill means that 1 sincere fellow will slog, the rest will enjoy and get this poor fellow to work (and feel it is their right to do so - sharing, its called), leadership of course MI zindabad. problem identification -what problem? whether to join JP Morgan or McKinsey? Design thinking - we closed most of our design courses and BTech projects (learning by doing, or doing nothing). Innovation sure, ow to get placed on day -1 or how to explain copying.
- "Innovators" is just a buzzword - I think we should avoid it. Our goal should be to solely provide an environment where an individual grows as a thinker and a human being. This is to be developed while they are working on research problems, or in classroom. Hence, the bigger goal should be development of thinkers and not so much research papers/ citations etc. - all these numbers are just a means to achieve intellectual growth of individuals working on the particular problem. Unfortunately for higher education, these numbers seem to have become an end in themselves. Through their research, we should strive to help students (and ourselves) develop tools and ability to solve problems in any domain that they choose to work in, much after they've left the Institute.

## 2.13 Gender Diversity

Figure 2.13 Faculty agreement on the action points to enhance Goal 9



The institute would like to create an enabling environment and take initiatives to move towards enhanced share of women in the campus. On this context faculty members were asked their agreement on the action points of Goal 9. The question asked was “Six action points have been listed to enhance gender diversity among students, staffs, and faculty. Do you agree with them?”. Figure 2.13 showed that the responses were given on a three point scale of “yes, no and not sure”. The graph illustrated a highest of 78% respondents agreed, 15% were not sure and 7% disagreed with the action points to enhance gender diversity in the campus.

Overall the results shows an agreement on the action points to enhance gender diversity in the campus.

### Comment Analysis

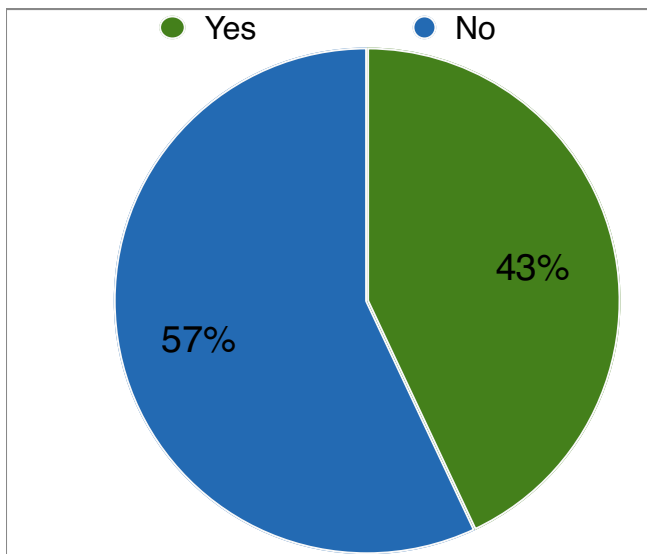
Currently IITB has about 27% women staff members, 13% women faculty, and little over 18% women students. It strives for equal representation from men and women among its faculty, students and staff members. On this context, respondents were asked the question “SIX action points have been listed to enhance gender diversity among students, staffs, and faculty. Do you agree with them?”. Some of the sample comments are mentioned below:

- Need affirmative action in JEE/GATE for girls students
- While this is precious, I think we need to account for other disparities and diversities that exist in IITB--caste, tribe, sexuality, religion, region and (especially as we aim for an international group) race. What we need is of course not just a body count, but a sense of their continued well-being and enrichment.
- Excellence should be the only criteria for everything.
- Most of them are peripheral emoluments. For the core to change: we need to bring in more women in administration. Hardly any faculty admin posts are occupied by women. More women DRs and ARs must be actively preferred. IITB should look at possibilities to take an affirmative action towards this. If 30% or 50% is kept as a target, it may help find suitable persons to honour at least most of it.
- Our aim should be: single housing from day 1 (not year 2). - accommodation for all married students (not priority for those with children). and so on. If we cannot provide decent living conditions to all students/fac/staff - we should not recruit. Doing that just enhances mediocrity.



## 2.14 Global Ranking

Figure 2.14 Faculty agreement on targeting IITB on world ranking



The subject rank in QS world ranking for Engineering and IT is 52. On this context faculty members were asked the question “Should the institute document explicitly mention that IIT Bombay should target to be one of the top Institutes in Engineering and IT?”. The responses were on a binary scale of “yes and no”.

The resulted presented in Figure 2.14 show that 57% of the faculty members don't think that IITB should target itself to be in the top rank and 43% wants to be on the top rung of the ladder.

Overall, more than 50% of the faculty members don't support targeting IITB on any ranking system.

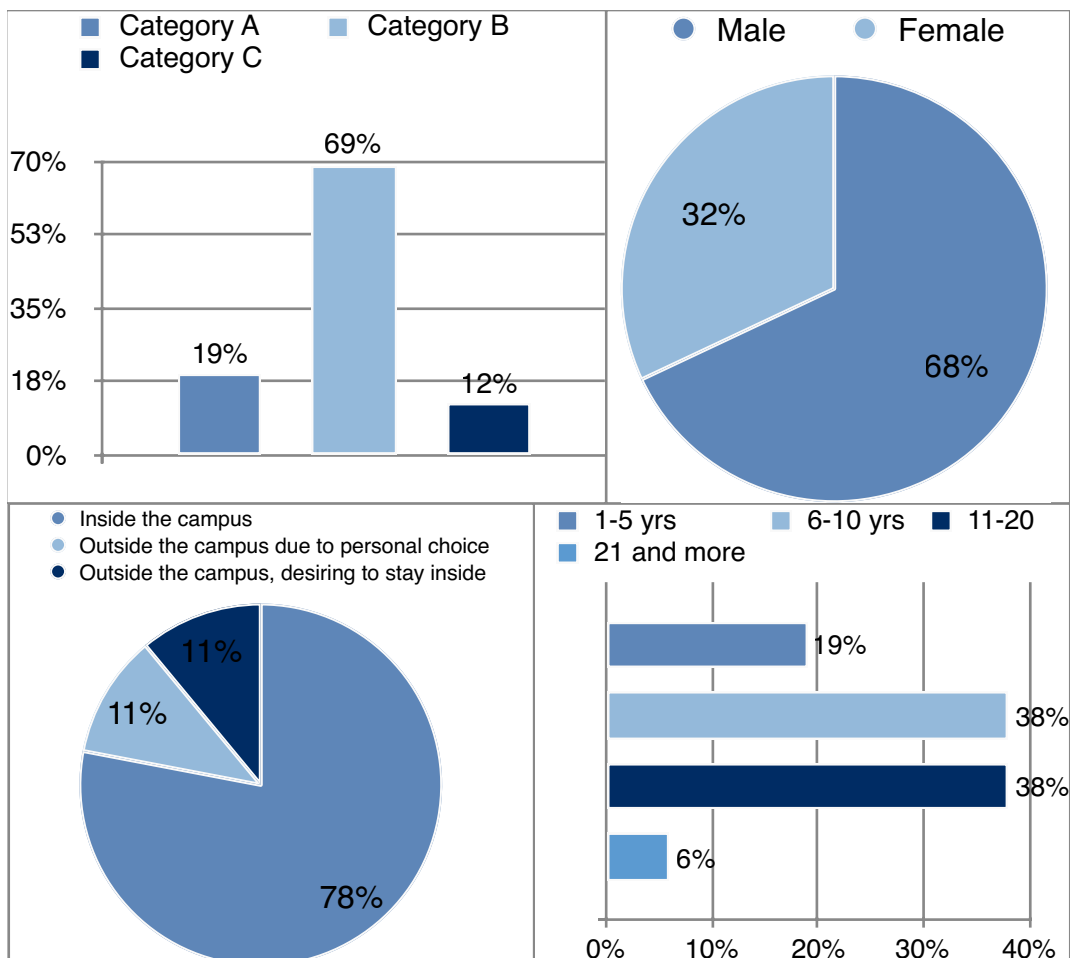
### 3. Summary of Staff Feedback

The Staff feedback survey (see Annexure 3) was administered to measure the level of staff satisfaction with different aspects of their job at IITB. Additionally, their opinion on the draft strategy document was also taken in order to support decisions for making the Institute a better place to work. The summary of the feedback from the staff was received through online web-based survey and respondents were asked to give comments on few selected questions where they have given suggestions to improve it. These suggestions have been mentioned under the comment analysis section after each question. Additionally, a focus group meeting with the staff was also conducted. A detailed summary of the feedback received from survey and focus group meeting is mentioned below.

#### 3.1 Online Survey-Staff Response Rate

A total of 34 staff members responded, yielding a 3% response rate. Figure 3.1 illustrated the total number of staff members who responded to the survey by their category of employment, gender, place of residence and number of years worked in IITB. Out of a total of 34 respondents, 69% belonged to Category B, 19% belonged to Category A and 12% belonged to Category C. Female (32%) respondents represent a smaller portion in comparison to the males (68%). A highest of 78% respondents stay inside the campus, 11% stays outside the campus and another 11% respondents stays outside the campus but desires to stay inside. Approximately 38% of the staff who responded to this survey have been working in IITB since last 6-10 years, another 38% have been with IITB since last 11-20 years, 19% were with IITB since last 1-5 years and only 6% have been with IITB for the longest time period of 21 years and more.

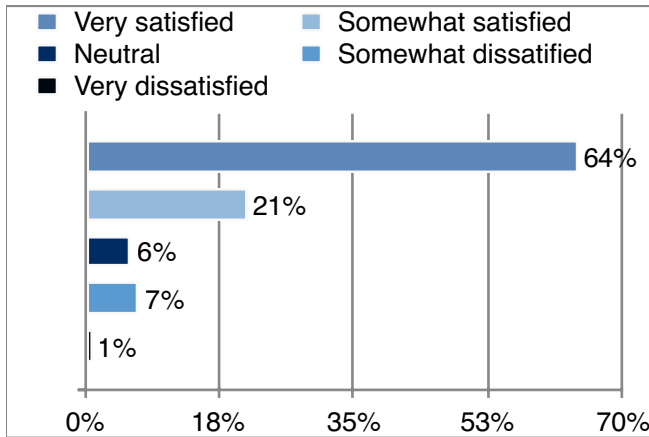
Figure 3.1 Staff response rate, by job category, gender, place of residence and job duration in IITB



Thus, the result shows that most respondents were from job Category B. As is usual, the male respondents are more than the female respondents. Maximum employees reside inside the campus and have been working more than 6-10 years in IITB.

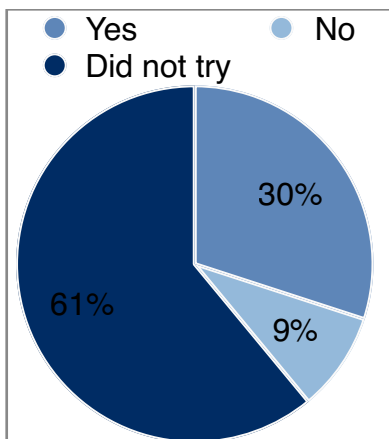
### 3.2 Job Satisfaction

Figure 3.2.1 Staff response on job satisfaction



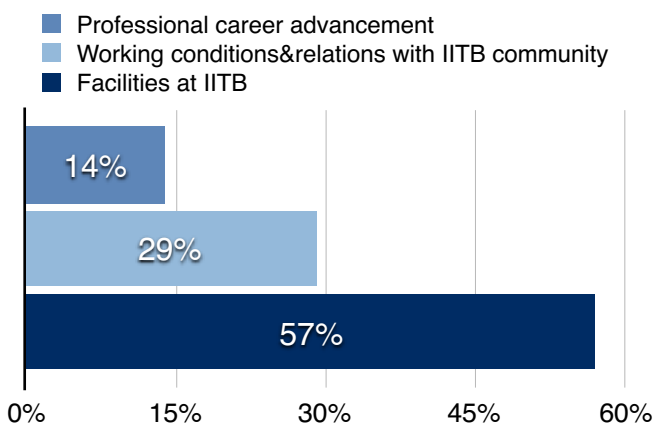
The next question on the survey instrument was a scale of four items. These questions showed staff members satisfaction toward their job at IITB. The first question asked was “Overall, how satisfied are you with your job at IIT Bombay?”. The response was on a five point likert scale where, “1 is very satisfied and 5 is very dissatisfied”. A highest of 64% respondents were very satisfied and 21% were found to be somewhat satisfied. A small (8%) sub-set of the respondents of staff members were dissatisfied (see Figure 3.2.1).

Figure 3.2.2 Staff response on job opportunity outside IITB



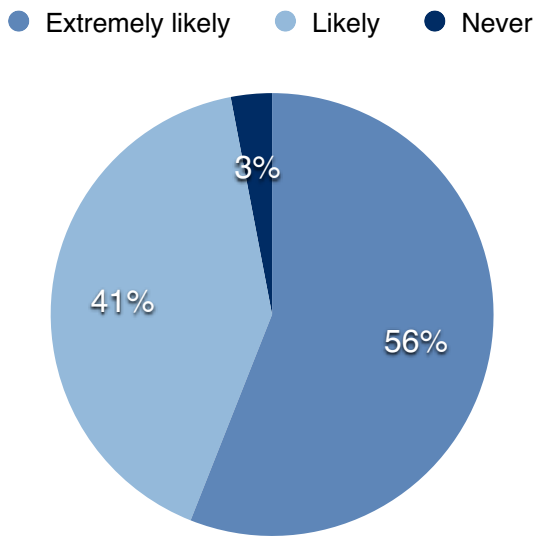
The second question asked the staff members, if they had an opportunity to get a similar job outside IITB. This item was measured on a three point scale of “yes, no and did not try”. The result were presented in Figure 3.2.2. A maximum of 69% respondent said that they did not try outside, 30% agreed that they got a similar job outside and only 9% staff said that they never got the opportunity to get a similar job outside IITB.

Figure 3.2.3 Staff response on reasons which make them stay back at IITB



In the third question, staff members were asked the reasons that made them stay at IITB. The reasons given were “professional career advancement, working conditions and relations with IITB community, and facilities at IITB”. Most respondents agreed that they stayed back due to the facilities available at IITB, 29% agreed that they stayed back due to the working conditions and relations with IITB community and finally 14% believe that they have stayed back due to professional career development (see Figure 3.2.3 below)

Figure 3.2.4 Staff response to their likelihood to recommend IITB to others



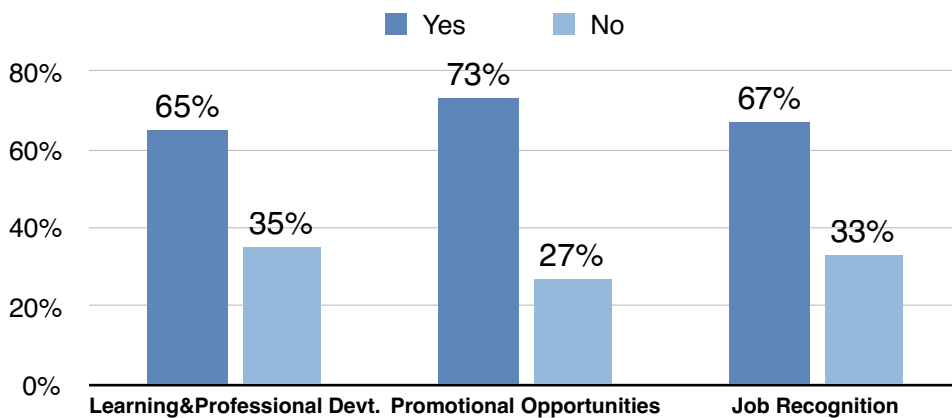
The fourth questions inquired about respondents likelihood to recommend IITB to others as a good place to work. The responses were in a three point scale of “extremely likely, likely and never”. The results in Figure 3.2.4 showed that 56% were extremely likely to recommend, 41% were likely to and only 3% were never likely to recommend IITB to others

Overall, the results of “job satisfaction” shows that most staff members are satisfied with their job. Additionally most of them have never tried for a job outside. More than 50% of the respondents think that they would like to stay back in IITB because of the facilities that they could avail. Ninety-seven percent of the respondents are likely to recommend IITB to others.

### 3.3 Professional Development

A scale containing three items was asked to measure professional development that staff members experiences at IITB. Presented in Figure 3.3 is the percentage of agreement on each of the three items. It was measured on a three point scale of “yes and no”. The first item on this scale asked staff members if IITB support them in pursuing learning and professional development opportunities. Sixty-five percent agreed and 35% refused to the first item.

Figure 3.3 Staff agreement on their professional development



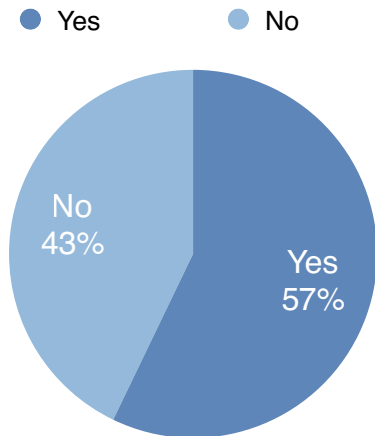
The second item asked the respondents if they are satisfied with the opportunities for promotion within IITB. Seventy-three percent of the respondents agreed to it and 27% respondents said no to the item.

The third item asked the respondents whether IITB does a good job of recognizing the contributions of staff. Sixty-seven percent respondents agreed and 33% disagreed to the item.

Overall the result indicates that IITB need to do more to support staff members in pursuing learning and professional development opportunities and recognise their job contribution to the institute.

### 3.4 Performance Review

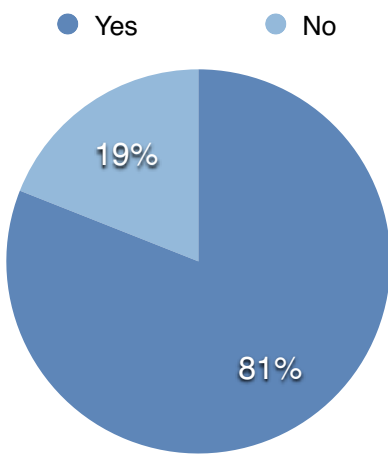
Figure 3.4.1 Staff agreement on performance review



Two question on the survey instrument touched directly upon the performance review of the staff members. They were measured on a dichotomous scale of “yes and no”. The first question was asked to measure if performance review is conducted on a regular basis. As reported in Figure 3.4.1, a total of 57% agreed and 43% disagreed to this question.

The next item asked respondents if their performance reviews provide them with useful feedback on their work. Result in Figure 3.4.2 illustrated that 81% said “yes” and 19% said “no” to this this item.

Figure 3.4.2 Staff opinion on feedback received from performance reviews



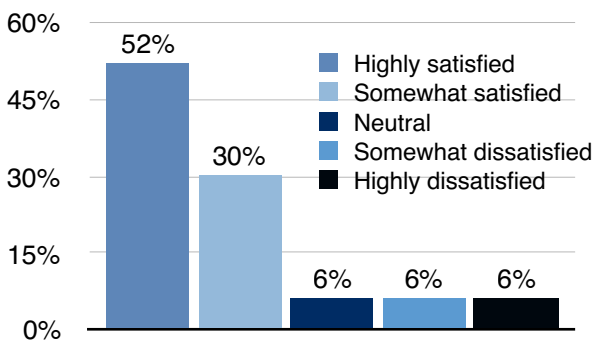
Overall the result reports that IITB need to work on the present performance review process which may make them interested in their work with a healthy feedback.

### Comment Analysis

On performance review, respondents have said that annual numerical rating on specified aspects is not enough. A supervisor should have a monthly one on one performance review discussion with an employee where he can appreciate the good wok as well as suggest changes for betterment of the employee in future tasks.

### 3.5 Facilities

Figure 3.5 Staff members agreement on facilities provided by IITB



The next question measured the satisfaction level of the staff members on facilities such as accommodation, school, hospital, dues settled at the time of retirement, etc. It was measured on a five point likert scale where 1=highly satisfied and 5=highly dissatisfied. The results reported in Figure 3.5 showed that 52% respondents were highly satisfied and 30% were somewhat satisfied. A very small subset of the sample were neutral (6%), somewhat dissatisfied (6%) and strongly dissatisfied (6%).

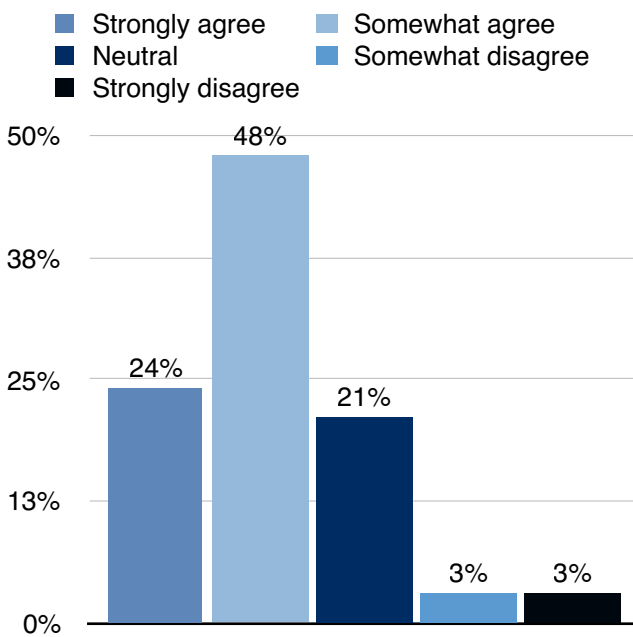
Overall, the result shows that the facilities such as accommodations, school, hospital, dues settled at the time of retirement, etc. provided by IITB meets the need of the staff members.

### Comment Analysis

1. A detailed rule book to be made available.
2. Pensioners to be given privilege.
3. New quarters should be allotted to the employees staying outside instead of allocating those who are already in the campus

### 3.6 Employee Grievances

Figure 3.6 Staff members agreement on employee grievances

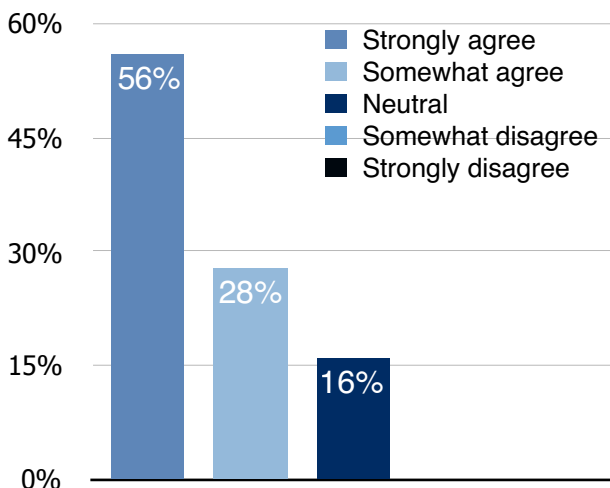


The next question in the survey questionnaire tried to measure the staff members opinion on how well the grievances are redressed. The responses were measured on a five point likert scale where 1=strongly agree and 5=strongly disagree. The results reported in Figure 3.6 showed that 48% of the respondents somewhat agreed and 24% respondents strongly agreed that employee grievances were fairly settled in the institute. However, 21% remained neutral and 6% disagreed.

The result implies that the grievance settling procedure need to be handled more carefully in the workplace which may lead staff members in maintaining a harmonious and productive work environment.

### 3.7 Gender Equality at Workplace

Figure 3.7 Staff members opinion on women employee

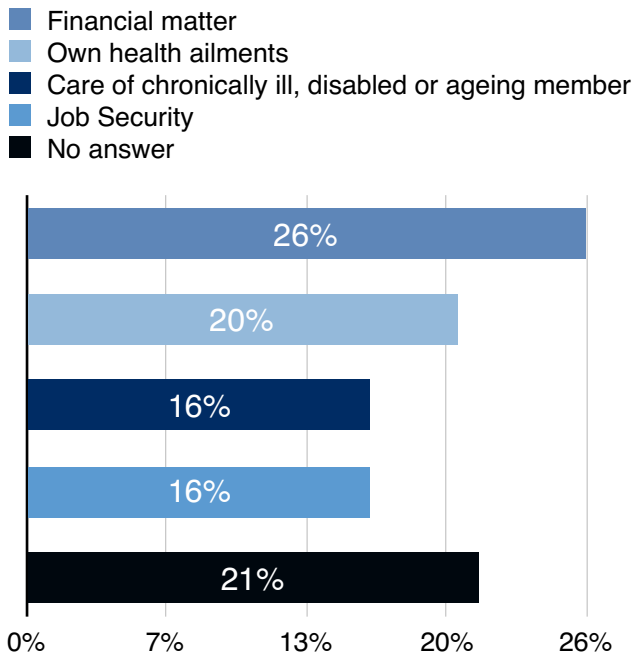


The respondents were asked if the women employees are treated at par with their male counterparts in employment, promotions, and social interactions. As shown in Figure 3.7, a highest of 56% respondents strongly agree to this and interestingly all the 56% respondents were male. Twenty-eight percent respondents somewhat agreed and its interesting to note that all of them were female. Sixteen percent of the respondents remained neutral in their opinion.

Overall, the result shows that the the gender equality in the workplace is fair and the women employees are treated at par with their male counterparts in employment, promotions, and social interactions.

### 3.8 Stress Among Staff Members

Figure 3.8 Staff members agreement on stress they experience



The next question aimed to find out the reason of work related stress among the staff members. The reasons cited were financial matters, own health ailments, care of someone who is chronically ill, disabled or ageing in your family and job security. A highest of 26% agreed financial matter to be the reason of stress followed by 20% respondents who think it's their own health ailments, 16% each feel that care of the chronically ill, disabled or ageing members of their family and job security to be their reason of stress respectively. Twenty-one percent respondents chose not to answer this question (see Figure 3.8).

Overall, the result shows that maximum stress was felt for the financial matter of the staff members.

### 3.10 Agreement on Draft Strategy Document

The staff survey also took the feedback from the staff members on the draft strategy document. Findings from the survey can serve as a reference against which modifications to the draft document can be made. The level of agreement on different sections of the draft document is mentioned below.

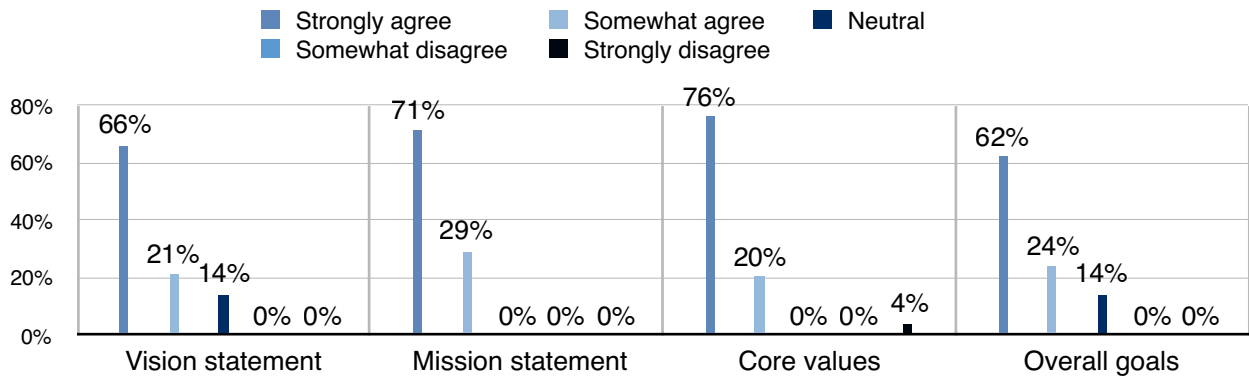
#### 3.10.1 Vision Statement, Mission Statement, Core Values and Overall Goals

A scale containing three items was asked to measure the level of agreement of the respondents on the vision statement, mission statement, core values and overall goals. The response was taken on a five point likert scale of 1=strongly agree and 5=strongly disagree. The first item asked the respondents if they agree that the vision statement reflects what IITB hopes to become in future. The results presented in the Figure 3.10a showed that 66% respondents strongly agreed, 21% somewhat agreed and 14% remained neutral to the vision statement. Interestingly, none of the respondent disagreed to the vision statement.

The next item asked the respondents if the mission statement clearly reflects IITB's objective to be a global technology university. The results showed that 71% respondents strongly agreed and 29% somewhat agreed to the mission statement. However, none of the respondents disagreed to it.

In the third item on the scale, the respondents were asked their agreement on the five core values (integrity, excellence, accountability, transparency and empathy) mentioned on the draft strategy document. The result presented in Figure 3.10.1 showed that 76% strongly agreed, 20% somewhat agreed and only 4% strongly disagreed to the list of core values.

Figure 3.10.1 Agreement on vision statement, mission statement, core values and overall goals



The fourth item asked the respondents about their agreement on the overall goals in the draft strategy document. Around 62% of the respondents strongly agreed, 24% somewhat agreed and 14% strongly disagreed.

Overall, this establishes a consensus on the vision statement, mission statement, the five core values and overall goals mentioned in the draft strategy document.

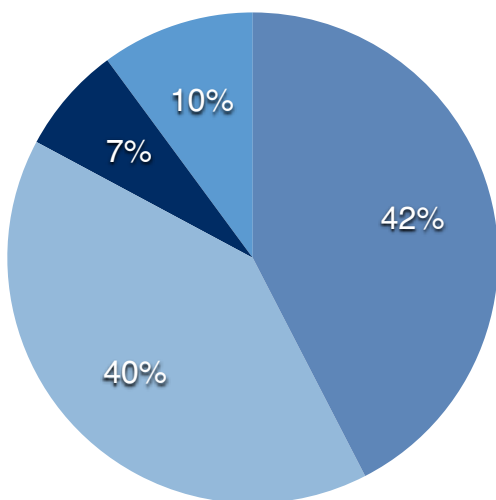
**Comment Analysis**

Many respondents feel that we should try to become very useful to the Indian society. There is a total disconnect in what we teach/research and what is needed WITHIN India. So insisting on “global university” should be limited to just some directions and not in all directions.

**3.10.2 Broaden Educational Programmes**

Figure 3.10.2 Agreement on broadening educational programmes

- Most certainly
- Should sharpen its focus
- With caution
- Certainly Not



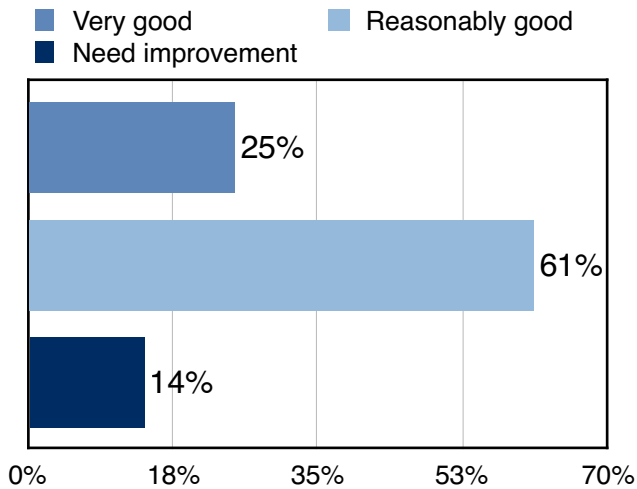
IITB currently offers degrees in science and engineering, humanities, design and management. The question asked to the staff members on this context was “Should IIT Bombay broaden its educational programmes?”. It was measured on a four point scale of “most certainly, with caution, should sharpen its focus and certainly not”. A highest of 42% staff members said most certainly, 40% warned IITB that it must do so with caution, 10% respondent did not support broadening educational areas. Only 7% said that it should sharpen its focus on science and engineering education (see Figure 3.10.2).

Overall, the result implies that IITB must introduce new courses and programs but with caution by taking care of resources, space, infrastructure etc.



### 3.10.3 Infrastructural Development

Figure 3.10.3 Agreement on IITBs infrastructure

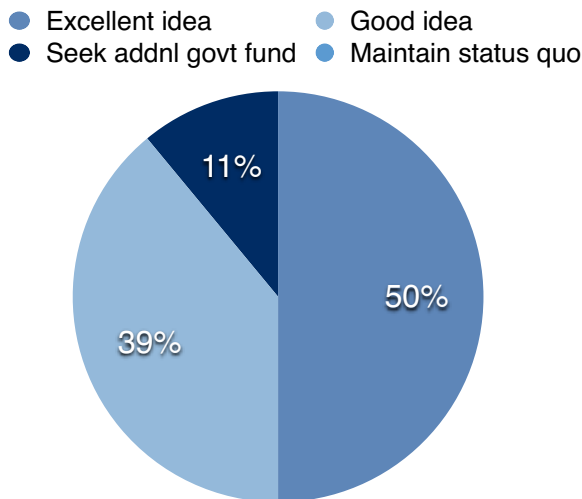


IIT Bombay now has 10,000 students, 600 faculty and 1225 staff members on its rolls. On this context, staff were asked to rate IIT Bombay's effort to provide infrastructure. The responses were reported on a three point scale of “very good, reasonably good and need improvement”. The results in Figure 3.10.3 showed that 61% respondents think that the infrastructure is reasonably good, 25% agreed that its very good and 14% feels that it could be improved.

The overall result shows that most staff members feel the infrastructure of the institute is reasonably good for the growing population in the IITB campus.

### 3.10.4 Broaden Funding Base

Figure 3.10.4 Agreement on broadening the funding base

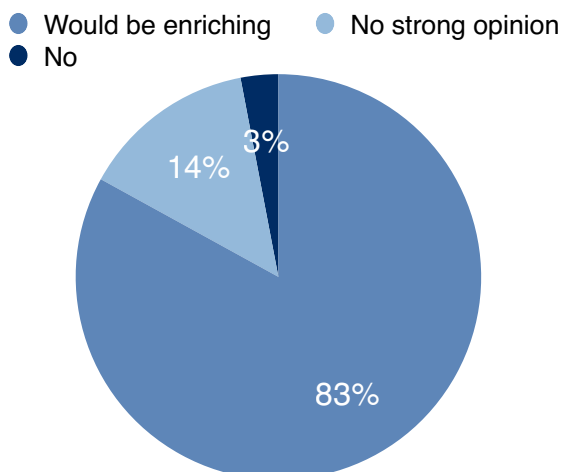


Currently IIT Bombay receives a significant part of its funding from the MHRD. But IITB feels the need of increasing it due to the increased activity in the institute. The next question in the survey instrument measured the staff members response to the institute’s effort to broaden the funding base. Fifty percent supported it as an “excellent idea” and 39% agreed that its a “good idea”. Only 11% respondents suggested to seek additional government support (see Figure 3.10.4)

Overall, the result shows that the effort to broaden the funding base was supported by the staff members.

### 3.10.5 Attract International Students and Faculty

Figure 3.10.5 Agreement on attracting international students and faculty

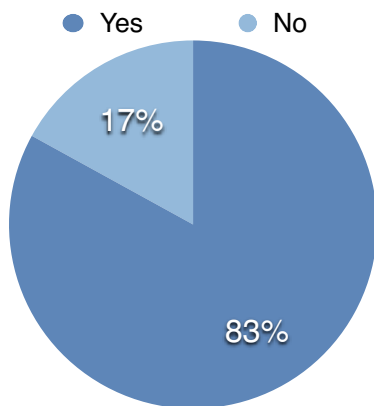


The next item in the survey instrument asked the staff members “Should IIT Bombay seek to attract international students and faculty?”. The response was taken on a three point scale of “would be enriching, no strong opinion and no”. Approximately 83% of the respondent felt that it would be enriching, 14% had no strong opinion and only 3% said no (see Figure 3.10.5).

Overall, the result showed an agreement on the draft document which seek on attracting international students and faculty.

### 3.11 Global Ranking

Figure 3.10.6 Perceptions on world ranking of IITB



The subject rank of IITB in QS world ranking for Engineering and IT is 52. and the NIRF ranking conducted by MHRD is 3. On this context, staff were asked this question, "Should the Institute document explicitly mention that IIT Bombay should target to be one of the top Institutes in Engineering and IT?". It was measured on a dichotomous scale of "yes and no". A highest of 83% staff member agreed and 17% disagreed (see Figure 3.10.6) to this question.

Overall, the result indicates that most staff members want IITB to target to be one of the top institutes in the world university list.

### Comment Analysis

#### Staff members suggestions on adding value to their work:

Respondents were asked that on a regular basis they have been interacting/catering to many stakeholders (faculty, students, staff, industry etc.) in the institute. How in their opinion, can they add value to their work concerning the respective stakeholder?

Below is a sample of what some of them said:

- One stop solution desk. A student/staff should not go to each & every department/ sections for his work. He should open a ticket at the solution desk and his query should be resolved with a time frame. Also he should be updated for all status and information. Treat as Client-Server model.
- IITB can think of developing a Centre for Consciousness Studies - which will introduce scientific study of elective courses like Yoga and Wellness. The faculty of this centre can approach corporations to train their leadership roles in attaining higher states of well being and happiness. I can take this initiative at the institute with many like minded people.
- Non faculty members also be made to feel their need and contribution to the system.
- I would like to interact with industry and work on their problems.
- The faculty members could adapt technologies to enhance their teaching effectiveness and give more time to expand the course content and deepen the knowledge sharing by adapting "Flip classroom" like concept.
- Like students, staff should also get access to recorded course and learn their chosen area subject in the available time to them.
- There is a scope for enriching all stakeholders on social responsibilities. For Eg. Using footpaths, Driving vehicle consciously, Keep informing securities for illegal advertizing and postering outside IIT walls and so on.
- Every task should be allocated to concerned employee with a specific deadline. Everyone in the channel should should complete the work within specified TAT. This will enhance the efficiency of our Institute and in turn result in satisfied stakeholders.

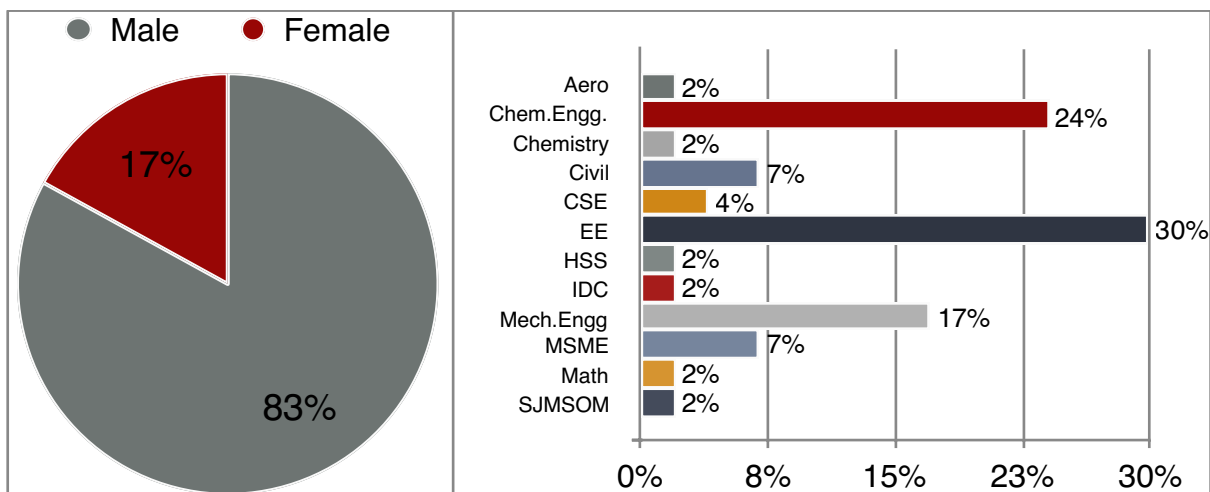
#### 4. Summary of Alumni Feedback

A web-based survey (see Annexure 4) was conducted to seek feedback from the alumni on the draft strategy document. Apart from the survey, a separate response sheet came from the batch of 1970, which could be viewed from the link, <https://drive.google.com/file/d/0B9EE0xhj6hTwanRleI9qeEVnV1k/view?usp=sharing>. The data presentation of the alumni survey questionnaire is discussed below.

##### 4.1 Online Survey-Faculty Response Rate

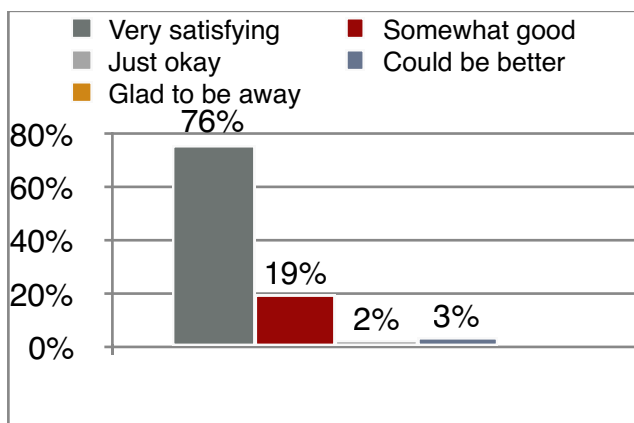
There were a total of 60 completed alumni responses from the web-based survey. The respondents range from the batch of 1968 to 2015. More than 25% alumni were from the batch of 1991, the reason being their presence in the campus to celebrate their silver jubilee reunion. Figure 4.1 illustrate the total number of alumni who responded to the survey by their gender, and by the department they belonged to. A significantly small percentage of respondents were female (17%) as compared to 83% male respondents. Most of the alumni who responded to this survey were from Department of Electrical Engineering (30%), followed by Chemical Engineering(24%) and Mechanical Engineering (10%) respectively.

Figure 4.1 Alumni response rate, by gender and department



##### 4.2 Alumni Satisfaction as a Student at IITB

Figure 4.2 Response on alumni experience as a student at IITB



The next question asked on the survey instrument was “How would you rate your experience as a student at IIT Bombay?”. It was responded on a five point scale of “very satisfying, somewhat good, just okay, could be better and glad to be away”. As reported in Figure 4.2, a highest of 76% respondent felt it was very satisfying, and 19% felt somewhat good.

Overall, most alumni were satisfied with their experience at IITB as a student.

### 4.3 Alumni's Involvement With IITB

Figure 4.3a Alumni response on their level of connection with IITB

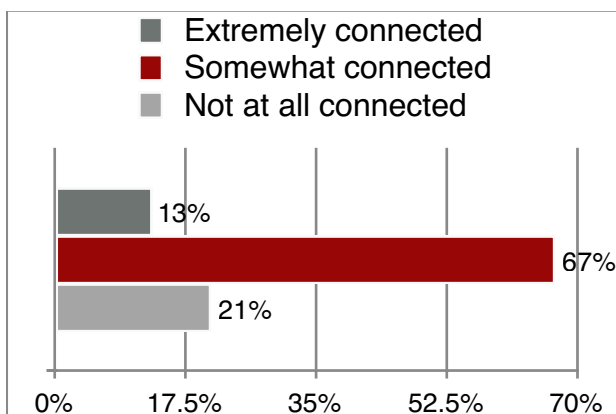
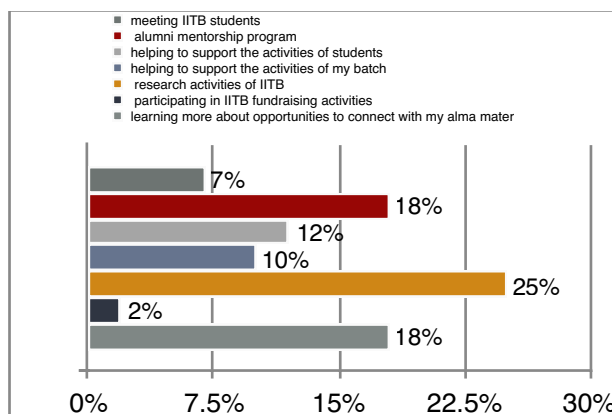


Figure 4.3b Alumni response on how alumni would like to connect with IITB



The next three questions on the survey instrument touched directly upon alumni's present level of connection, their interest to remain connected and in what way they could connect to their alma mater. The first question asked the alumni "Today, how connected do you feel with IIT Bombay?". The response received was on a three point scale of "extremely connected, somewhat connected and not at all connected". Approximately 67% of alumni responded that they are somewhat connected to IITB, 21% are not at all connected and 13% seem to be extremely connected (see Figure 4.3a).

In the second question the respondents were asked if they "Would you like to be engaged with IIT Bombay?", all the 60 alumni responded to the survey agreed to it.

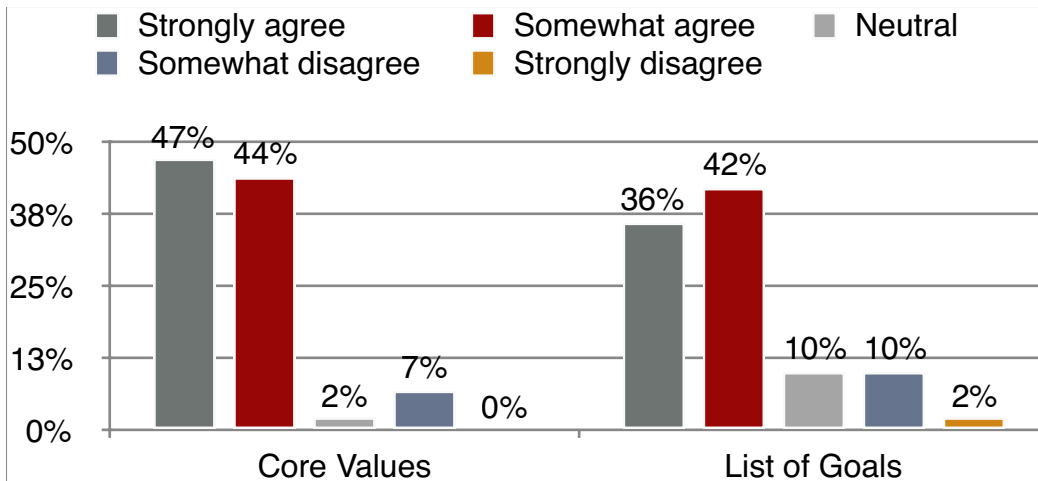
The third question asked was "how would you like to be connected to IITB?". The question had multiple interest to which an alumnus could associate to remain connected to IITB. As reported in Figure 4.3b, around 25% respondent are interested to associate with IITB in their research activities followed by their interest in being engaged in alumni mentorship program (18%). Additionally, 18% of the alumni were interested in learning more about opportunities to connect with their alma mater.

Overall, the result interpret that most of the alumni are somewhat associated to IITB but given a chance they all would like to be engaged with their alma mater. It was found that most alumni were interested to be associated with the research and development activities of the institute.

### 4.4 Agreement on Core Values and List of Goals

To get the response on the core values and the overall goals in the draft strategy document, respondents were asked two questions. The first question was "Would you agree with the core values that shape IIT Bombay's vision and mission?" and the second question was "What is your response to the list of goals?". As reported in Figure 4.4, the responses were captured on a five point likert scale of "strongly agree to strongly disagree". Around 91% supported the core values that shaped the vision and mission statements of the institute. Only 7% respondent felt that they don't agree with it. Seventy-eight percent of the alumni agreed to the support of the list of goals, another 12% disagree and only 10% remained neutral.

Figure 4.4 Alumni agreement on the core values and the list of goals



Overall, the result shows that both the core values and the list of goals mentioned in the draft strategy document were supported by the alumni.

### Comment Analysis:

Two questions were asked to know more about the opinion of the respondents on vision mission, core values and overall goals.

#### “Would you agree with the core values that shape IIT Bombay's vision and mission?”.

The core values were highly appreciated by many while many gave suggestions to add few more like pioneering, responsibilities, empowerment, innovation and creativity, social responsibility, agility, ethics and transparency and so on. The core value “empathy” was lauded but was suggested to bring in more clarity to the statement. Listed below are some of the sample comments given by alumni:

- The Core Values listed, while being unexceptionable by themselves, are well announced and comprehensive. If anything, taken all together, they seem to be over-ambitious. The danger is that in trying to achieve them together the available resources may get spread over-stretched. To be practical, they therefore need to be prioritised, or allotted weightage.
- I would like the description of the core value of empathy to be expanded to include elements of a humane attitude. When I say humaneness, I refer to a belief in equality, inclusiveness and justice, a spirit of tolerance and accepting differences etc. I also wish that a belief in the scientific method or rationalism was mentioned explicitly in the document; it seems to be taken as implicit in the mention of technology, but might be better if it were explicitly mentioned. Since IIT is the undergraduate degree for many students, the attitudes they imbibe here will hold them in good stead as citizens, irrespective of whether they continue in the domain of science & technology, or live in India or abroad
- While the institute has to focus on what it creates, I don't see either the faculty or student (who are two pillars of becoming what IIT wants to become) part of the statements. While there is a mention of transforming students, it just talks about how they will transform students. It does not talk about what will a transformed student look like. From there will come how you will transform them. Similarly, what is meant by Leaders and what will a collaborating IIT look like in the future. Coming to Core Values: Some of the Core Values description has gone into how you do it today. First thing should be of defining the con-

cept itself. What do mean by each core value and how every aspect of IIT (org, faculty, students, staff, etc) will showcase that. Its not about writing we give awards or have created an incubator. This is today's reality. Core Values should be timeless. They should not be bound as a definition. We don't even know what we will create in the next ten years. What all great leaps will IIT make in the coming years. At that time, the current version of core values will not stand true. Specifically on Empathy: It is not about teaching students to be empathetic, it is about how in every essence of IIT, empathy is practiced. As a core value, I also believe collaboration and Respect should be there.

#### **“What is your response to the list of goals?”**

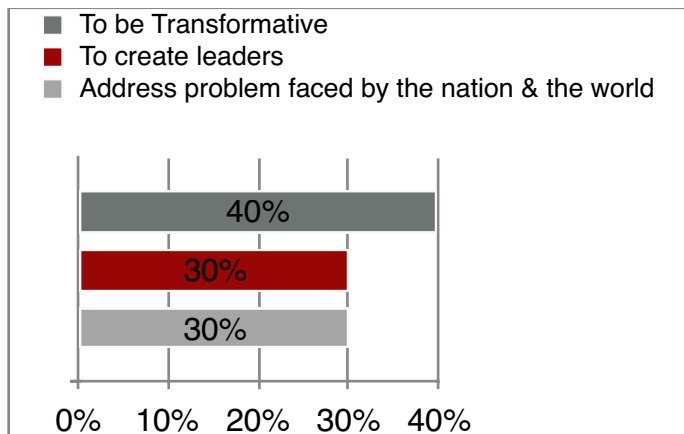
Alumni have remarked that the goals are found to be fairly conventional but over ambitious. Trying to achieve one may lead to the achievement of the other because the number of goals are many and overlapping. Thus its important to prioritise the goals in the process so that the resources doesn't get over-stretched. It is also important to make these goal quantifiable and measurable, and add timeline to the goals. It was suggested that alumni engagement with the institute is very important and must be explicitly mentioned in the document. Some of the sample comment are:

- The goals of an institution can go to define the goals of a nation. Ethics and Transparency in professional and personal conduct maybe considered as a significant goal in itself.
- I find the list of goals too long. Given the paucity of funding is it not the time to be much more selective on where should be investing for the future. If indeed the goal is to be transformative in a global context we need to have a clear sense of which few (maybe 2) areas we will be 'world class' and other areas where we will good/competent. Is it time to make choices? Go narrow and deep in a few technologies versus 'wide and shallow' in many?
- There needs to be some global or Asian benchmarks against which IITB's performance will be ,measured. Else, it will be difficult to develop an action-oriented strategy which if implemented well will take IITB to the envisioned future. In many ways, that will defeat the very purpose of the visioning exercise.
- I would add " Creating Entrepreneurs " as one of the Goals. I would also add an overall goal specifying " Global Ranking " For the many of the Goals defined , I feel that Targets are not vey ambitious. It should not so happen that we fall behind in Global Rankings even after achieving these Goals. This is best discussed in person.
- Some stress on learning to identify real life problems and ability to solve them as a team. Would like to see projects with teams from across departments and academic years working to solve problems and earn credits. Long term projects with continuity would result if team members are from across years (batches) working on formulating a problem, designing & implementation of solutions, including iterations. A team member from community where project is to be implemented would provide relevance and feedback

#### **4.5 Prioritising objectives of IITB**

Higher education in a developing nation with a very large population, has the additional challenge of prioritizing its objectives. The respondents were asked which one from the three choices they would prioritise as the objective of IITB.

Figure 4.5 Prioritising objectives of IITB

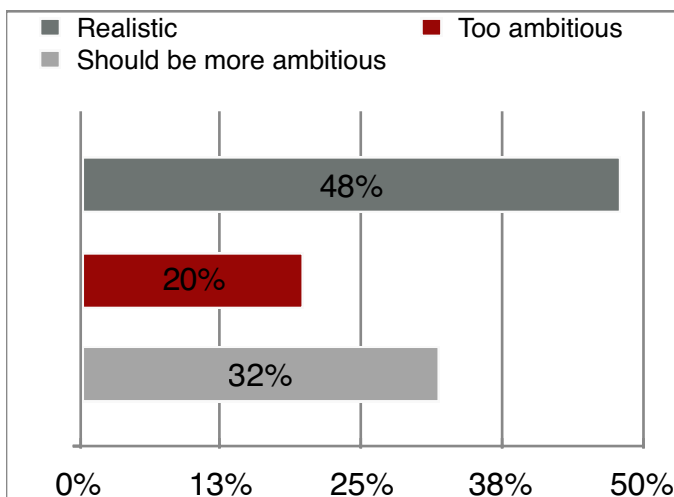


The three objectives explicitly mentioned were “to be transformative, to create leaders, and to address problems faced by the nation and the world”. These have also been mentioned in the vision and mission statement of the draft strategy document. “To be transformative” topped the priority list of the alumni with 40% agreeing to it, followed by 30% each for “to create leaders” and “to address problems faced by the nation and world” objectives respectively.

Overall, alumni prioritise the objective “to be transformative” the most.

#### 4.6 Engagement with Society and Industry

Figure 4.6 Alumni response on acceptance of action points of Goal 1



The next question asked on the survey instrument was related to the Goal 1 of the draft strategy document. It asked the respondents “What is your response to the action points mentioned in the draft document for enhancing engagement with society and industry?” on a three point scale of being “realistic, too ambitious and should be more ambitious”. Figure 4.6 illustrated below showed that 48% alumni find the action points to be realistic and 32% alumni were of the opinion that it should have been more ambitious. However, 20% alumni find it to be too ambitious.

Overall, the result indicates that most of the alumni accept the action points of Goal 1 and find it to be realistic.

#### Comment Analysis:

##### What is your response to the action points mentioned in the draft document for enhancing engagement with society and industry?

- Emphasis on collaboration with local industries in the Mumbai-Pune belt, including both the start-up economy as well as mature industries has been advocated by alumni.
- Should target now 5 big success stories in next 5 years
- Active engagement with students for technology start-up based on their curricular projects/theses
- The Targets can broaden to HSS Undergraduate and Postgraduate research programs,
- Being pivotal in framing significant national educational policies (for higher education and secondary education)
- Professors should be encouraged to build partnerships with specific industries and take on real value add projects (not just R&D).
- Expand SINE infrastructure and have it in multiple locations (may be one in rural area where costs of operations and living are less expensive).

#### 4.7 Broadening of Educational Areas

IITB currently offers degrees in science and engineering, humanities, design and management. Two questions were asked to measure the broadening of educational areas in new areas such as Medicine, Fine-Arts, Architecture, Film-and-Media, Finance and Law. This is also related to Goal 2 in the draft strategy document. The first question specifically asked to the alumni was “Should IIT Bombay broaden its educational programmes?”. A highest of 45% alumni warned IITB that it must do so with caution, 32% said most certainly and 18% said that IITB should sharpen its focus. Only 5% alumni said certainly not to broadening educational areas (see Figure 4.7a).

Figure 4.7a Alumni response on broadening educational areas

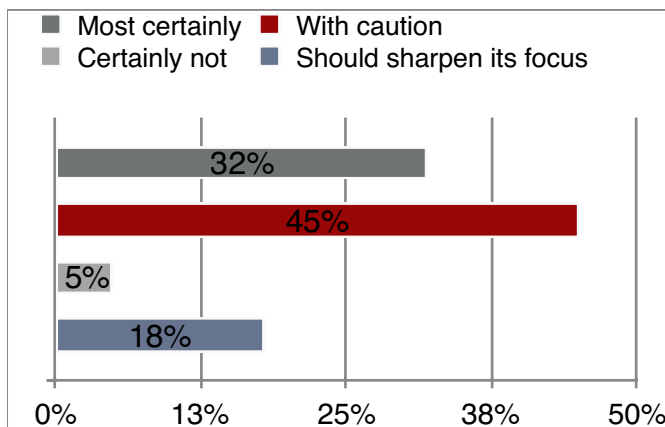
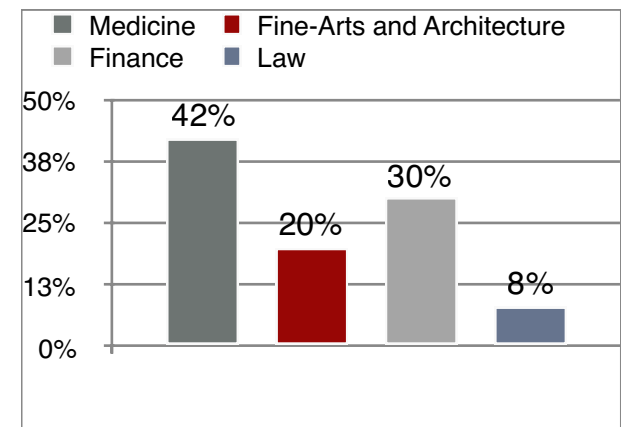


Figure 4.7b Alumni response on prioritising new area



The second questions asked was about prioritising new areas for broadening the educational programmes. The new areas suggested in the draft document were Medicine, Fine-Arts, Architecture, Film-and-Media, Finance and Law. Figure 4.7b reported that Medicine (42%) got the highest priority followed by Finance (30%), Fine-Art and Architecture (20%) and Law (8%).

Overall, the result indicate that alumni wants broadening of IITB into new areas, but need to plan carefully. The most prioritised area supported by alumni was Medicine followed by Finance.

#### Comment Analysis

##### Are there other directions that ought to be considered?

- Computational Digital Medicine is a new field crying out for attention. IITB is strongly placed to move into it as it has a strong IT lineage and Mumbai has plenty of reputed medical institutions to partner with, and as a source of research and data.
- In order to enhance gender diversity and create an impact as a university, IIT Bombay may consider starting UG or PG programs in Culture and Media, International Politics, Textiles, Tourism and Hospitality, etc (depending on the interest and availability of quality academics). The strategic location of Mumbai gives IIT Bombay an added advantage of creating global diversity with new educational programs.
- Education must become interdisciplinary. Research and classroom courseware should become more 'applied' and practical as opposed to purely theoretical or abstract. E.g. Medicine at IIT must be based on adoption of technology to the practice of medicine, similarly Finance should be geared to electronic systems (bitcoins, security, authentication etc.) rather than theoretical banking etc...

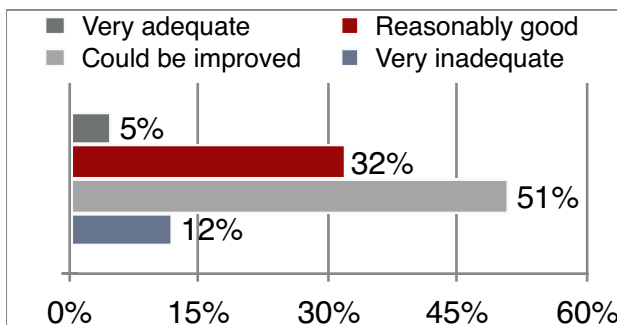


- I believe even the 4 areas listed above should not be considered. The objective is not to offer all courses but a few where we can be world class and transformative. Instead of expanding the list we need to make hard choices even from what we do today.
- We need to remain focused on creating the best engineering and science college. Arts and humanities are necessary to provide broad-based education to undergraduate. Adding medicine and law and Finance does not add much to our primary mission. Would take up valuable resources that needs to be spent on strengthening our core mission.
- While expanding the scope of offerings, consideration should be given to the space available for infrastructure for academics & housing.

#### 4.8 Infrastructure

This item on the survey instrument is related to Goal 3. IIT Bombay now has 10,000 students, 600 faculty and 1225 staff members on its rolls. On this context, alumni were asked to rate IIT Bombay's effort to provide infrastructure. The responses were reported on a four point scale of “very adequate, reasonably good, could be improved and very inadequate”.

Figure 4.8 Alumni response on IITB’s effort to provide infrastructure



The results in Figure 4.8 showed that 51% respondents think that the infrastructure could be improved and 32% think that it is reasonably good. However, 12% respondents feel that the infrastructure is very inadequate and only 5% feels that its adequate.

The overall result shows that most alumni feel the infrastructure of the institute need to be improved.

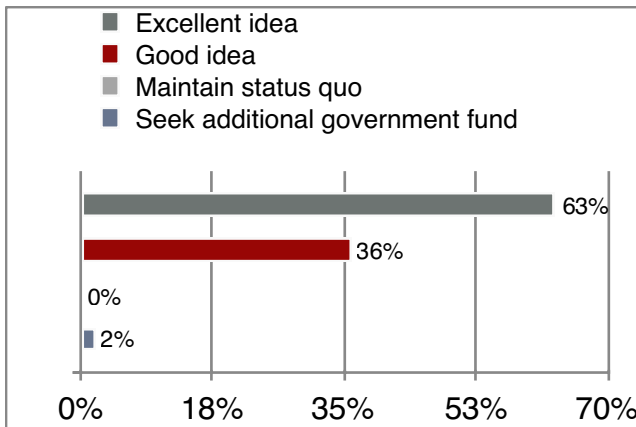
#### Comment Analysis

**IIT Bombay now has 10,000 students, 600 faculty and 1225 staff members on its rolls. Rate IIT Bombay's effort to provide infrastructure.**

- Could be improved and MUST be improved- it now borders on "Very Inadequate". Good infrastructure is not a luxury, even for a third-world country. It is in fact a very necessary concomitant to producing consistently good quality results.
- World class infrastructure is critical to India's development and IIT Bombay can set an example and lead.
- Increase reliance on networked communications/distance learning as opposed to physical infrastructure
- The older hostels are in a shabby condition - they need upgrading on priority. The main corridor is dilapidated – needs attention. The labs need upgradation. And so on....
- Do we have world class research facilities, and faculty, that would act as a strong magnet and attract top new PhDs and undergraduate students from all over the world?
- Increase peer to peer learning through projects with specialists focusing on research. Undergraduate assistants working on research projects would inculcate affinity for research leading to quality input for post graduate research projects.

#### 4.9 Broadening of Funding Base

Figure 4.9 Alumni response on broadening the funding base



Currently IIT Bombay receives a significant part of its funding from the MHRD. But IITB feels the need of increasing it due to the increased activity in the institute.

When alumni were asked to respond to the institute’s effort to broaden the funding base, 63% supported it as an “excellent idea” and 36% agreed that its a “good idea”.

Overall, the Goal 5 in the strategy document was supported by the alumni.

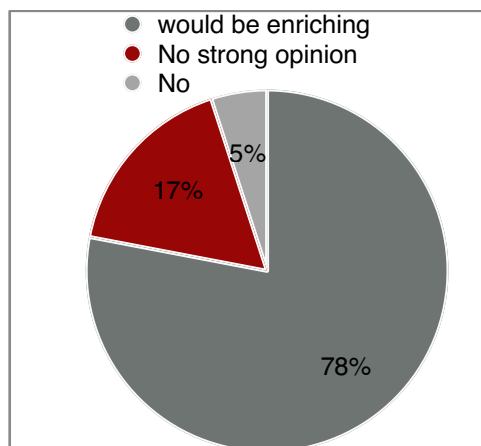
#### Comment Analysis

**Currently IIT Bombay receives a significant part of its funding from the MHRD. Should IIT Bombay attempt to broaden its funding base?**

Status quo should be maintained for funding from MHRD. It should be broadened from other sources like industry, alumni, etc. This was considered as the only way forward as it will bring IITB into closer association with the industrial community, research institutions and IITB alumni. It will also broaden the knowledge base of the faculty and help develop additional skills and expertise at all levels. The MHRD funds could be used for (1) capital improvements and (2) operating needs of poor and SC/ST/Backward class students. However, such kind of association sometime come with conflicts of interest, and that is why IITB should make this choice judiciously. It was suggested that to develop such relationship IITB should create a professional/corporate team of people who engages the industry for consultancy projects. The payment to these employees could be at par with corporate salaries including bonus based on performance.

#### 4.10 Attract International Students and Faculty

Figure 4.10 Alumni response on attracting international students and faculty



The next item in the survey instrument tried to get a consensus on Goal 6 in the draft document. It asked the alumni “Should IIT Bombay seek to attract international students and faculty?”. Approximately 78% of the respondent felt that it would be enriching, 17% had no strong opinion and only 5% said no (see Figure 4.10).

Overall, the result showed an agreement for the Goal 6 of the draft document which seek on attracting international students and faculty.

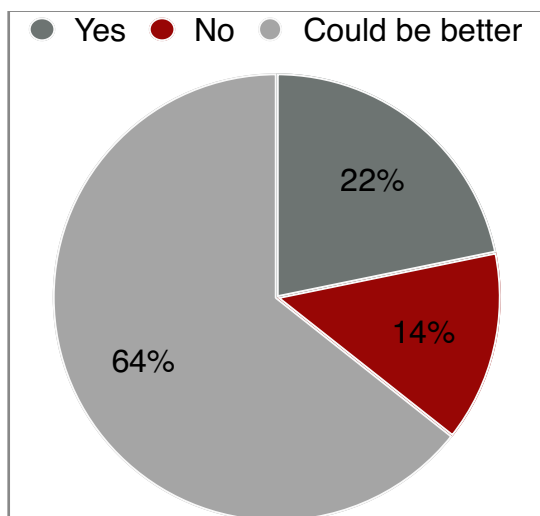
## Comment Analysis

### Should IIT Bombay seek to attract international students and faculty?

IITB is missing the global phenomena and diversity always enriches the campus in learning and thinking. Going by the vision statement, we cannot be global without international students and faculty. This will compel the institute to improve its standards and infrastructure all round. It has also been suggested that IITB partner with a few top notch universities globally, have semester long exchange programs with them for a meaningful number (15-20%) of undergraduate students and faculty. IITB should also inspire and equip its own doctoral and research population to take-up leading positions in academia across the country. We can also get our own alums back to the country who are doing so well in research and academics. However, the concern is that it should not be done at the cost of reduction of seats for Indian students. We have a large number of Indian youth aspiring to get the IIT experience and brand. We should be focussing on those Indian students rather than spend energy on international participation for some more years to come. Of course, exceptionally talented international faculty participation would be a positive feature. The other concern is the criteria, fee structure and the tight infrastructure and resources we have. Moreover it wont help if it is being considered only to enhance IIT Bombay's international profile and rankings. However, diversity has been supported by all the alumni.

### 4.11 Innovation and Entrepreneurship

Figure 4.11 Alumni response on Innovation and Entrepreneurship



SINE (Society for Innovation and Entrepreneurship) is one of the IIT Bombay's initiative towards encouraging innovation and entrepreneurship. In the context of agreement with Goal 8 of the draft document, the respondents were asked if IITB is doing enough in its attempts to become a centre for creating future leaders and innovators. A three point scale of "yes, no and could be better" was used to measure the response. Sixty-four percent of the alumni said that it could be better, 22% agreed to it and 14% disagreed.

Thus, the result shown in Figure 4.11 indicates that IITB could do a better job in its attempt to become a centre for future leaders and innovators.

### Comment Analysis:

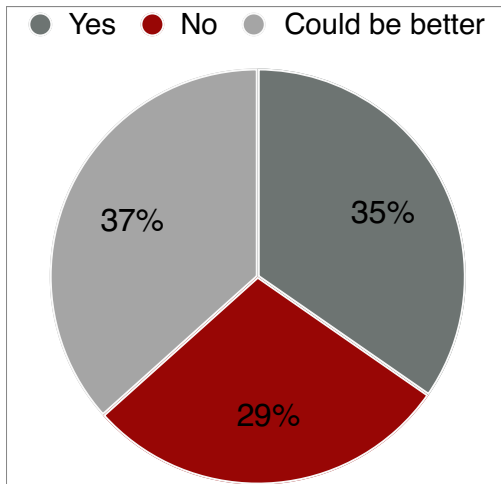
**SINE (Society for Innovation and Entrepreneurship) is one of the IIT Bombay's initiative towards encouraging innovation and entrepreneurship. Is IIT Bombay doing enough in its attempts to become a centre for creating future leaders and innovators?**

The role of SINE has been appreciated immensely, and have been compared with Y Combinator. It has been heartening for the the alumni when they read about SINE initiative on health-tech etc. However, the limiting factor is it could not address traditional engineering disciplines like civil, mechanical, chemical, metallurgy etc. and moreover its demand has gone beyond its capacity to nurture entrepreneurial instincts of student or alumni and entrepreneurs. Now there are more and more alumni going the start-up way due to the incentives by the Government like Make in india and so on. IITB must come up with more initiative like SINE and in multiple location, including Rural areas. It should not

be measured in terms of financial success always, the focus could be on benefits to community and society. Institute should re-look at criteria for success, besides financial.

#### 4.12 Gender Diversity in the Campus

Figure 4.12 Alumni response on gender diversity



IITs are known for the gender imbalance and would like to enhance the women population in the campus by creating an supportive environment. To measure the level of agreement on Goal 9, alumni were asked the question “Has IIT Bombay addressed gender diversity sufficiently?”. Figure 4.12 showed that the responses were given on a three point scale of “yes, no and could be better”. The graph illustrated on the left showed that 37% respondents felt it could be better, another 35% said yes and 29% disagreed. Overall, its found that alumni think that IITB has not addressed gender diversity sufficiently and feel that the institute could do better.

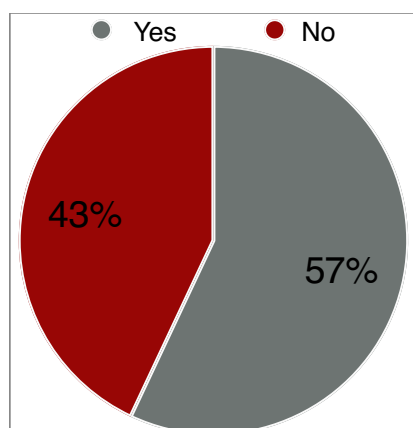
#### Comment Analysis

##### Has IIT Bombay addressed gender diversity sufficiently?

From 3% in the Class of 1990 to 9% in the current generation ( 2010 to 2015) does seem like an improvement. However it is far from the potential of Indian women. Medical schools have reached a 50% gender enrolment, and leading technology institutes should definitely take up a measure close to 20%. Other than the numbers we have to note that IIT entrance exams is amongst the toughest in the country. Engineering is still not the most sought after education by girls as compared to medicine etc. Some programs such as MSc did have a good gender diversity but that is not that case with the engineering programs. So even if gender diversity friendly policies are laid, the percentage of women getting into IIT needs to improve. Thus without compromising on the quality of students, IITB need to create an enabling environment. The numbers will increase over a period of time. IITB should take up initiatives at school levels to make Engineering and Technology more attractive to students IITB should also enhance programs to ensure that students are integrated well into the system once they come in. Spotlighting successful women alumnae may help support enhanced gender diversity.

#### 4.13 Global Ranking

Figure 4.13 Alumni response on targeting IITB in world ranking



The subject rank of IITB in QS world ranking for Engineering and IT is 52, and the NIRF ranking conducted by MHRD is 3. The next question asked to the alumni was “Should the Institute document explicitly mention that IIT Bombay should target to be one of the top Institutes in Engineering and IT?”. It was measured on a dichotomous scale of “yes and no”. A highest of 57% alumni agreed and 43% disagreed (see Figure 4.13). Overall, the result suggests that most alumni want IITB should target to be one of the top institutes in the world university list.

#### 4.14 How would you rate your experience as a student at IIT Bombay

This was the last question asked to the alumni. The experience shared are as follows:

- We were fortunate, being one of the early batches (1966). The facilities were brand new and far superior to those available at other similar institutions, the faculty was excellent and dedicated, the hostels were new and in good condition and we were one to a room. All in all some of the best years of my life.
- I think the time I spent at IITB was transformational in terms of education and sowed the foundation of being a leader. The choice I exercised was that of being a corporate leader. I appreciate the efforts that IITB has been doing and is seeking to enhance through this vision plan of being more connected with society - I don't think I imbibed that enough in the 4 years that I was at IITB ( 1986-90 )
- I am proud to have been a part of IIT Bombay institutional setup. I had mixed memories and times in the HSS department. I had an excellent doctoral supervisor in Professor Milind Malshe and his research group was very helpful. But, my interaction within the department was limited to my research group and my supervisor. The exposure and experience that I had beyond the departmental structure was greatly enriching and rewarding. I learned from interactions with Professors and students across other departments (like Electrical Engineering, Chemistry, Mat Sc, Aerospace, and Computer Sc), and those interactions have turned into lasting friendships and collaborations.
- Good considering the relative quality of other Indian institutions. However, IIT is no longer compared to the domestic institutions. India exists in a globalized economy and its institutions must also exist in the same. Therefore the current student experience at IIT compared to their counterpart in Japan, Korea, China is substandard.
- Excellent. It inculcated curiosity, the confidence to excel and a deep desire to explore because I was thrown into the midst of brilliant students and brilliant teachers. The lab facilities and library were good
- Campus life was most beneficial. Peer group interactions were more informative than classroom lectures.
- We had great teachers who inspired us. The ambience, bonhomie made IITB an unforgettable experience for me
- The experience was good in-terms of the faculty, students etc which helped us learn so much. In terms of facilities there were a lot of gaps which seem to have improved currently.
- I enjoyed my stay at IIT and formed valuable friendships. But, as far as learning is concerned, my time at Stanford university was so much more enriching.
- 'Superb' is the accurate word for my experience at IIT Bombay, 'very satisfying' isn't quite expressive enough.
- The extra curricular activities played a big role in shaping us as human beings. Do not neglect them.
- The expectations were quite on different scale in the 70s. Personally I have the similar core values that have been mentioned in this document and felt (and continue to feel) indebted to IIT Bombay and the nation. There was only one issue during my student days... food in the mess. This seems to be taken care of now.
- A lot of learning happens in the community outside the classrooms on campus. Students staying outside campus would be detrimental to holistic learning.
- But I am from the late 1970's vintage and the situation now could be dramatically different.
- The best and most educative five years of my life from an academic as well as life experience point of view.
- Social interaction which was a plus point has reduced due to internet.

## **5. Focus Group Discussion with Different Stakeholder Groups of IITB**

Apart from online survey, a series of focus group discussion (see Annexure 5) with different stakeholder took place. These are,

- Director's open house with students
- Interactive session with international students
- Discussion with Fellow of Academies
- Discussion among the young faculty
- Special department faculty meetings
- Interactive session among staff members
- Discussion among female students, staff and faculty

### **5.1 Highlights of Open House with Director**

A student open house with the Director was conducted on 2nd February 2017 at PC Saxsena Auditorium at 8.00 P.M. Around 200 students attended the session. Most of the students were from PG and PhD programmes. The session proceeded with a presentation made by Director, Prof. Khakhar on the draft strategy document followed by a discussion among the students on the various aspects of the draft document. The highlights of the discussions and suggestions by students is mentioned below.

- Proper redressal procedure to handle students issues
- Safe working condition for the contract worker such as providing safety equipments, proper standards, medical access etc
- Good spread of courses so that students wont be forced to take irrelevant courses
- Start with umbrella based programme and then spread over
- Recruit faculty across department in same subject
- Peer counselling among students as students for mentoring are not trained properly
- Review MSc-PhD programme in many department
- Not to focus only on gender diversity, rather address social diversity in general
- Enhance facility in Research Park to benefit students
- Students to actively participate in green campus development
- Enhance single room for all students and accommodation for married scholars
- Develop plans to tap the UGs who leave IITB and join other institutes
- Update curriculum to reach out to core companies
- Periodic student satisfaction survey

### **5.2 Highlights of Interactive Session with International Students**

A meeting for international students of IITB was conducted in the presence of Dean-Academics, Dean-SA, Dean-IR and Convenor-Institute Strategy and Planning Committee on 27.02.17 at 5.30 pm in VMCC, Seminar Hall 5. Students from countries like Nepal, Bangladesh, Iran, Norway, Canada, Switzerland, Myanmar, Sudan, USA, Turkey, Ethiopia, Taiwan and Syria were present. The topics discussed are as follows:

- International students should be provided cooking facility and mess fees should be optional.

- University website should be updated with experiences of former students, pictures of facilities in campus, research areas, everyday life of students, and an official Youtube channel could be launched.
- Course syllabus for many courses is not up to date online.
- Examination schedule is too complicated to follow.
- Department should be informed about class schedule and exam schedule in order to guide students.
- Moodle should be updated by all faculties.
- Information about IITB should be run in major universities of every home country to get access to more international students.
- When arriving to IITB for the first time, hostel allotment should be assured.
- There should be faculty advisor in each department to provide guidance to students regarding academic issues.
- Whatsapp groups should be created for international students to share information among them in the initial days.
- Buddy system seems to be working well. However buddy should be preferably from the same department and present on campus when the international student is arriving.
- If possible, automated process for getting food in mess.
- Classes should discuss exercises and numerical in form of tutorial more often.
- Document authentication as demanded by Foreign government should be smooth and hassle free. IITB should facilitate visa extension with FRRO.
- Pick up facility for the first time of arrival should be provided from university side. Students arriving late at night should be accommodated in guest house till working hours.
- Online 10 electives are shown, while only 03 run each semester.
- Accommodation for married people should be provided.
- Hostel room should be suitable for people coming from different climatic condition
- Courses should give global exposure and not just restricted to Indian market (Civil Dept.)
- Handful faculties taking all the courses in few programmes
- Course structure for many courses is not clear. Distribution needs to be revised.
- TAs are sometimes biased and favoring their friends and juniors more. Getting hold of old questions and notes an issue for others.
- After completion of degree, proper career or higher studies guidance for international students is also required.
- Maps of IITB should be provided electronically before arrival for ease of students.
- Minimum CGPA system is not discussed clearly beforehand.
- Duration of Ph.D for DAAD scholars should be fixed to 4 years as funding and program design is for the specified amount of time.

### **5.3 Outcome of the Meeting with Fellows of Academies**

The meeting with the Fellow of Academies was conducted on 24th January 2017. The meeting was attended by some 20 fellows of the academies including the Director. The discussion was based on Goal 7 of the draft strategy document. The views expressed and endorsed by the attendees are:

- Set up periodic multidisciplinary colloquia / seminars in the institute on problems of topical interest.
- Identify 5 research areas in which institute wants make an impact during the next 10 years by forming focus research groups and help them for this to happen.
- Enhance UG research in the institute
- All fellows felt that there is an immediate need to resolve the on-campus accommodation issues for Research Staff and Postdocs

#### **5.4 Highlights of Discussion Among Young Faculty**

A meeting was arranged on 23rd January 2017 with all the young faculty of IITB (who joined the institute post January 2012) to discuss (A) suggestions to change things in IITB to make it better and (B) the draft strategy document. Prof. Arindam Chowdhury moderated the session and Director, Prof. Khakhar attended this meeting as an observer on behalf of ISPC. The highlights of the meeting is mentioned below and refer this link for more detail: <https://drive.google.com/open?id=0B9EE0xhj6hTwV0E5WGZWa3VWNkE>

##### **5.4.1 Suggestions to change things in IITB to make it better**

This was discussed under four very relevant aspects which is of importance to the faculty members in IITB. These are Research, Teaching, Education and Administration, and Infrastructure/Facilities/Others.

#### **Research**

- Assist incoming faculty kick start their research careers
- Enhance opportunities and facilities for collaborative research
- Provide more internal research funding to achieve long term research goal
- Improve student and researcher pool
- Administrative/Technical/Financial support for research
- Minimum admin load on new faculty
- Availability of “research orientation handbook”

#### **Teaching and Education**

- Periodic update of curriculum
- Fluidity in course selection between departments
- Increase in student should commensurate teaching and infrastructural resourcesFund allocation for innovative teaching
- Teaching to be rewarded in more ways
- Teaching load to reduce to no more than three hours a week
- More TA support
- Work on class size, strengthen ARP program, interactive session for best practice amongst colleagues

#### **Administration**



- Simplify admin procedure (more to do with ‘faculty-admin’ interface and not ‘back-end’ & ERP as mentioned in the document)
- Freedom to individual departments to aid recruitment of good students/scholars and attempts to make the procedure simpler
- Provide support of office staff for faculty for filling various forms
- Need faster and streamlined purchasing and procurement

### **Infrastructure/Facilities/Others**

- Orientation program, faculty mentorship program, updated faculty hand book
- Yearly meeting with Director and Deans
- Improve hospital infrastructure
- Better housing facility
- Regular evaluation and assessment of current infrastructure to sustain current programs
- 360 degree evaluation and feedback of all faculty and administration
- Ensure safety and improve campus life at all level

### **5.4.2 Suggestions on Draft Strategy Document**

- The visions statement was considered to be too broad, long and emphasises teaching relative to research. It was suggested that Vision should focus on a) science, b)research, c)society, and stress on d)university. The focus should be “research oriented” rather than “teaching oriented” and must aim for “leading global university” rather than just a “technology university”.
- The use of the phrase “EDUCATIONAL EXPERIENCE” was highly criticised. The absence of time lines, clear action plans and priority of goals was considered. It was thought that the document focuses more on INDUSTRY and should rather focus on the need of SOCIETY at large.
- Core value, EMPATHY was debated and needs further clarification.

### **5.5 Highlights of Special Department Faculty Meetings**

As suggested by ISPC a series of DFMs were conducted in different Departments, Centres and Schools. A total of 15 different academic units participated in this process (see Annexure 1). The objective of these special DFMs was to discuss the draft strategy document. Hence, the summary reports the highlights of the meetings as per the different sections mentioned in the draft strategy document.

#### **5.5.1 Vision, Mission and Core Values**

- Absence of the word “research” in the vision statement
- “Vision” and “Mission” look too broad
- Vision to be “technology leader” is contradictory
- Revise “global technology university”
- Highlight “basic fundamental research” in addition to new knowledge
- Rephrase vision statement to relate it directly to implementation plan
- Collaboration with industry missing in mission statement

### **5.5.2 Goal 1: Enhance Engagement with Society and Industry**

- industry internship in core areas for UGs and PGs
- one semester project for UGs & PGs of outside institutes with accommodation
- support mechanism for outreach activities
- industry interaction review of CEP/CDEEP/IRCC
- appointment of a person in Dean R&D office to interact with industry and facilitate patent commercialisation
- clarity on incubator arm,licensing etc. whether under IRCC/new arm?
- highlight work of Research Park
- media help to build positive public perception about research in IITB and proactive engagement with public by PR office
- curriculum to be developed in coordination with industry personnel
- creative educational centres for schools, dissemination of information, outreach, enhance CEPs, publicity to CEP courses
- address the issue of local industries going abroad for new technology development
- internship for industry professionals based on MoUs
- mechanism to account for translational research, social projects and outreach in measuring faculty success

### **5.5.3 Goal 2: Broaden Educational Areas**

- combine Architecture & Planning as a new centre/dept by upgrading CUSE
- no mention of proposal on expanding the infrastructure in case new areas in the draft document
- no mention of strengthening infrastructure of existing departments as unplanned diversification may lead to dilution
- requires careful strategy to maintain quality
- BSBE welcomed clinical oriented academic programs
- IDC suggested exploring Open Design School
- IDC would volunteer to mentor other IITs for setting up new Design School
- there is a need of government body in conducting UCEED and CEED
- IDC would like to initiate new program in Interior and Furniture design at PG level and mentor new department of Art
- partnership with other institutes for new UG programmes
- add courses in the subjects mentioned in the draft document for exposure to UGs
- focus should be on science, engineering and technology
- current infrastructure may not support new activities

### **5.5.4 Goal 3: Improve Internal Support Systems**

- existing admin structure may be restructured and upgraded HR policy to be revised for ease & quick settling of new faculty
- appoint adequate number of administrative staff, appoint secretaries for groups of faculty members

- set up centralised office for organising workshops etc. administrative assistance for large BTech. core courses
- Although few department resisted, many department also advocated Professional Managers with measures for accountability. However, the decision must lie with faculty
- new faculty orientation for smooth transition
- additional responsibilities preferably to interested faculty members
- uniform policy for TA ship across the department
- executive officer to assist HoD, faculty and dept in infst. and lab maintenance
- online interface for complaints indicating progress of the complaint
- maintenance of high-end equipment
- Professional Managers are the only way to free faculty time HR policies to retain technical staff who leave after being trained
- dynamic space allocation to the faculty in the dept.
- well documented rules and regulations, transparent accommodation facilities for research scholars
- aesthetics, sanitation, management of resources, better shopping complex and better restaurant facilities
- proper redressal mechanism and firm exit policy

#### **5.5.5 Goal 4: Enhance Student Experience**

- department level feedback from students, project based courses for UGs and more workshops for the students
- study mindset of students, modification in feedback process
- action plan on how to achieve rigour in academics, and small class size
- learning by doing demand one student one experiment in labs
- incentivising (earn credits) activities for both students and faculty
- improve current living condition of the students

#### **5.5.6 Goal 5: Broaden Funding Base**

- liberalise sourcing & operation of Department Development Fund for research infrastructural development
- introduce objective budgeting concept
- reaching out to Masters/ PhD alumni for funding and other engagement
- encourage startups with govt. support
- avenues for CSR and clarity on CSR fund
- interaction with industry be enhanced
- non-subsidised courses be offered on merit
- goal to be taken in priority which may help use of funds judiciously
- seek ways to enhance funding for research consumables
- fund generation from students be explored
- Differential credit fee be explored
- no strategy for funding to achieve the goals

### **5.5.7 Goal 6: Attract International Students and Faculty**

- suggested long term appointment instead of contractual appointment
- percentage of international students and faculty should not exceed 10%
- recruitment based on special position in a specific category
- quality of faculty and staff not to be compromised

### **5.5.8 Goal 7: Advance Frontiers of Knowledge**

- limited guest house availability sometime restricts the department to invite collaborators/visitors
- increase support provided to PhDs for international conferences
- careful recruitment of faculty with expertise in S&T and applied science
- appointment of more adjunct faculty in interdisciplinary disciplines
- central facilities could be made useful to a wider research community with small alteration
- too many overlapping centres, needs internal reorganising
- virtual interdisciplinary centre suggested
- laboratory development not keeping in pace with student expansion
- new model for a separate Instructional and Research laboratories
- planned funding and space allocation
- identify thrust areas by identifying few technologies of national importance
- work on research areas which gives greater impact

### **5.5.9 Goal 8: Create Future Leaders and Innovators**

- mentoring program for young faculty
- encourage research at Masters level in departments like IDC
- faculty development program
- support for start-ups from SINE
- developing teaching skills in PhD students
- strategy to attract PhD and post-docs

### **5.5.10 Goal 9: Enhance Gender Diversity**

- suggested social diversity rather than Gender diversity alone
- definite target to enhance female student suggested (e.g.,30% by 2020)
- promotional campaigns and appropriate support system inside the campus
- better infrastructure for female students, post- docs and project staff
- enhance daycare centre, suggested daycare facility on saturday and sunday
- open days for girl students along with parents and establish internship schemes

### **5.5.11 Goal 10: Enhance Alumni Engagement**

- reaching out to Masters and PhD alumni for fund
- active involvement by Departments during Alumni Day
- strike a balance between domineering and accommodating alumni
- alumni centre will be helpful

## 5.6 Highlights of Interactive Session Among Staff Members

A focus meeting with the staff was conducted on 3<sup>rd</sup> April 2017 in the Registrar's Conference Room at 3.00 P.M. Around 30 staff members were present for the discussion. The meeting proceeded with the suggestions and discussions with regard to Goal 3 – Improve Internal Supports System of the draft strategy document. The highlights of the discussions and suggestions from the staff members is mentioned below:

- Conduct training to the staff members on the New Recruitment Rules and Promotion Policy introduced by the Institute as most of the staff members are ignorant of the New Recruitment Rules and Promotion Policy.
- Suggested a staff representative in the Planning Committee to address all the issues related to staff.
- There is no proper delegation of work portfolio to the staff members and the job profile is not clearly defined on transfer of a staff member to other department/ section.
- It was suggested that there should be an online review portal for quick review of service and service response.
- It was suggested that the staff members be empowered to obtain the services of an expertise for tax details
- The internal Officers like Assistant Registrars/ Deputy Registrars could be invited for training programmes in addition to the training given by the Central Government Officials
- Emphasized the need of conducting Workshops and Training Programmes for the personal and professional growth of the staff members.
- It was suggested that the Institute should offer short-term courses and training to the existing technical staff to handle various instruments so as to work in other laboratories/ departments.
- It was suggested that the technical staff should also be transferred to other departments like the administrative staff so as to get an opportunity to work in other departments.
- Discussed the issue of allotment of Institute Representatives' Duty for GATE-JAM, UCEED and JEE Exams to specific locations viz. Goa, Dubai, etc. He stated that the duty allotment to specific locations like Goa, etc. should not be biased. He further stated that this is also a part of staff motivation.
- The ratings in APAR system is not standardized. He continued to state that the staff members in various departments get high ratings whereas the staff members in Main Building are getting comparatively low ratings. It was suggested that the Reporting and Reviewing Officers in various Departments/ Sections should be given effective training in APAR ratings.
- The staff members should be given educational and research opportunities as IIT Bombay is one of the most prestigious educational and research Institutes in India.
- The issue of discrimination between faculty and staff members was raised.
- Staff Club in the premises of the Institute is open only to Faculty and Group A Officers. It was suggested that it should be open to all staff members.

## 5.7 Focus Group Discussion among Female Students, Staff and Faculty

This meeting organised on 6th January 2017 (for faculty and staff) and 11th January 2017 (for students) was convened by Prof. Neela Nataraj (Women's Cell) to solicit feedback on the ISPC report from women stakeholders at IIT Bombay. The meeting was attended by approximately 20 people and the meeting involved several discussions about how IIT Bombay could enhance gender diversity across students, staff and faculty and also other issues that women face in IITB. Summarized here are some suggestions and action points that emerged from the discussions.

- Outreach: arranging talks for high school female students and their parents at IITB, success stories on websites-both graduated and existing female students
- Recruiting more women students: display on institute website and JEE website briefing facilities for women students based on real facts, more fund to tackle safety, low in hygiene leading to diseases, safety etc., commute facilities for women in night within the campus and to Kanjur Station
- Creche and childcare for students (ph.d), postdocs, staff and faculty- more space, infant facility, waitlist, flexibility,
- Incentives for women postdoctoral fellows-post-doctoral fellowship for women who took break, formal channel to help postdocs find house outside
- Common room for women in the main building
- Housing on campus-preference to married students, project staff, interns
- Benefits for women in informal sector on campus
- Gender sensitisation for all students, staff and faculty
- Enhancing other types of relationship

## 6. Summary of Findings

In contacting stakeholders of IIT Bombay from July 2016 till February 2017, the *Stakeholder Feedback* became an ambitious attempt to portray the honest perceptions of student, faculty, staff and alumni about themselves, their relationship with IITB and their expectations from the institute. Respondents were found to be satisfied with many aspects of the functioning of the institute and have also criticised and given suggestions on how to improve it. The data suggests considerable variation in their experiences, characteristics and opinions. Most respondents took interest to draft optional, open-ended responses to the survey, this shows an overall impression of a very frank opinion of the stakeholders.

Results from the *Student Feedback* suggest that a large majority of students are satisfied with their experience at IITB and are likely to recommend others to join IITB. Nearly 50% of the students surveyed are academically oriented which has resulted in many suggestions such as credit-based long term research projects, department component in the first year, inter-departmental dual degree and more computational component in the curriculum be introduced. Although, the facilities, services and the campus life have been appreciated, improvement on aspects like hostel, food services, public transportation have been desired by the students. The exposure of the students to different extra-curricular activities have been blamed to be the reason for lack of interest in academics leading to academic dishonesty. The survey has negative responses on faculty-student interaction and academic advising.

Many have suggested that having more joints and hub in the campus and projects with the faculty will enhance interaction. PG and PhD students feel that the role of the Guide need to be changed and more coursework which are relevant to our society be introduced. The courses need to be at par with the industry requirement. The social life is considered very low amongst the students, specially the PGs and PhDs as their academic commitment takes away most of their time. Few PGs students have suggested to make extracurricular activities compulsory to enhance social interaction. Students want more courses and programmes in interdisciplinary studies and liberal arts subjects be introduced. Additionally, the students have shown their interest in developing the campus sustainably.

Results from the *Faculty Feedback* show their satisfaction on their job at IITB. They are particularly satisfied with their research and teaching work and not much satisfied with the administrative work assigned to them. Many of the department have asked secretarial staff as paper work takes away most of their time from research and teaching. They are satisfied with the resources provided by IITB but feel that IITB could do better in improving the support for outreach activities. Along with the student, they too agree that the student-faculty interactions has been reduced and are worried about the ethically challenged students. Fifty percent faculty believe on broadening education into new areas but are sceptical about it, the reason mainly being, whether the current infrastructure and financial resources will be able to sustain the introduction of the proposed programmes. A regular evaluation and assessment have been suggested which will help in terminating the programmes with poor performance and enhance the programmes doing well or introduce new programmes. In general, they believe that the present infrastructure requires improvement and have shown a great concern toward institute's housing and infrastructural support to the PhD students. They perceive that IITB need to be truly autonomous (financially as well) in all sense and should constantly devise methods to augment resources. Regarding research at IITB, many believe that, we must look around us for the problems that exist in our society and work towards that. This will also help our students to go beyond classroom teaching and learn from big projects like Million Solar Lamp etc. which will help bring out the innovators and entrepreneurs in them. Although gender diversity in the campus has been supported but a demand for more diversified society in all aspect has been revealed in the DFMs meeting and meeting with young faculty. There is a consensus on the most part of the draft strategy document, and have provided criticisms and suggestions where necessary.

Results from *Staff Feedback* illustrate their satisfaction on their job primarily due to the community life and the facilities that they could able to avail from the campus. They are likely to recommend others to work in IITB. However, they feel that IITB could do more in helping them pursue learning and professional development opportunities and recognise their job contribution to the institute. The performance review process was blamed for not being standardised and suggested that the Reporting and Reviewing Officers in various Departments/ Sections should be given effective training in APAR ratings. Gender equality at work place has been perceived to be fair in all aspects such as social interactions, employment and promotions. The report show that the grievances need to be handled more carefully in the institute. The staff focus group meeting revealed that there is no proper delegation of work portfolio to the staff members and the job profile is not clearly defined on transfer

of a staff member to other department/ section. There was an overall consensus on the content of the draft strategy document.

Results from *Alumni Feedback* confirms their satisfaction towards their experience as a student in IITB. However, it also shows that most of the alumni are not well connected with the institute and would like to be involved with their alma mater. Maximum alumni want to be associated with the R & D activities that is going on in IITB. Hence, the institute must take more effort to build this relationship stronger. They have strongly said that the students here deserve better infrastructure. Most of them had the advantage of enjoying a better infrastructure during their own time. IITB should enhance its R&D activities with its immediate neighbouring industry and society. Apart from MHRD fund, the institute must put effort to seek funds from alumni, corporates and other research institutes. That will also help developing research collaborations. Alumni seem to be enthusiastic with the broadening of the education but have cautioned to consider the space and infrastructure available for academics & housing. They perceive that International students will enrich the campus and will boost the global ranking. However they have also shown concern that it should not be done at the cost of Indian students and have cautioned IITB about the poor infrastructure to be the barrier to this effort. IITB should do more for its entrepreneurial activities by setting up more initiative like SINE. They want more female in the campus but not compromising on the quality of the students. IITB should devise ways to make studies at IITB lucrative by reaching out to female prospective students. Overall, the draft was perceived to be over-ambitious where the resources may get overstretched if the goals are not prioritised and planned properly.

One common question “Should the Institute document explicitly mention that IIT Bombay should target to be one of the top Institutes in Engineering and IT?” was asked to all the stakeholders. Approximately 75% students agreed to it and 25% student disagreed, whereas 53% faculty members disagreed to it and 43% agreed to it, 83% staff agreed to it and 17% disagreed and finally 57% of the alumni agreed to it and 43% disagreed. It is to be noted that majority faculty members don't want this. The reason for asking this question is the recent NIRF ranking and the world ranking which has stirred the educational institutes. Even IITs, inspite of their high calibre could not reflect well in the international rankings. The reason for lagging behind is mostly the 40% score on the “global perceptions” as one of the criteria for global ranking, that we have never worked for. However, there has been debate among faculty whether IITB really want to do this? Maybe the obsession with global ranking should be done away with, and an enhancement in academic quality and quality for academic experience for students and faculty will automatically attract international students and enhance the global ranking of the institute.

Based on the results and findings, the recommendations and action plans will be modified in the Final Strategy Document for the year 2017-22.

For additional information about this report, contact the email id: [ispc@iitb.ac.in](mailto:ispc@iitb.ac.in)



Annexure 1  
IITB Students' Survey Questionnaire

1. What degree are you pursuing at IIT Bombay?
  - BTech/Dual Degree
  - MTech./MSc./MDes./MMP
  - PhD
  - Others
2. Your gender
  - Male
  - Female
3. Your department  
[Text Box]
4. Year of study at IIT Bombay  
[Text Box]
5. What is your perception about yourself? (Tick all that you feel are appropriate)
  - Academically oriented
  - Research oriented
  - Cultural/Sports/Social or other extra curricular activities oriented
  - Leadership activities (PoR etc) oriented
  - Other
6. Overall, how satisfied are you with your experience as a student at IIT Bombay?
  - Highly satisfied
  - Just satisfied
  - Not at all satisfied
7. How likely are you to recommend IIT Bombay as a good place to study?
  - Extremely likely
  - Likely
  - Not at all
8. How would you rate the following aspects of your educational experience: (1=Excellent, 2=Very Good, 3=Good, 4=Fair, 5=Poor)
  - Quality of the teaching faculty
  - Course availability
  - Academic advising
  - Access to teaching faculty
  - Fellow students' academic ability
  - Academic reputation of the Institute
9. Do we have enough hubs in the institute where students and faculty can interact casually, outside of class?
  - More than enough spaces, just not utilised well
  - Not many places that promote such an interaction
  - No such place
10. Is there anything else you'd like to share about your level of satisfaction with your educational experience  
[Text Box]
11. How would you rate the following services/facilities at the Institute: (1=Excellent, 2=Very good, 3= Good, 4=Fair, 5=Poor)
  - Campus
  - Class-rooms

- Laboratory facilities
  - Library
  - Parking
  - Public transportation
  - Hostel
  - Food services
  - Sports and fitness facilities
  - Career counselling and placement
12. Is there anything else you'd like to share about your level of satisfaction with the Institute support services and facilities  
[Text Box]
13. How would you rate the following aspects of student life at the Institute: (1=Excellent, 2=Very good, 3=Good, 4=Fair, 5=Poor)
- Sport and recreational facilities
  - Student bodies/organizations
  - Student diversity
  - Campus safety
  - Extracurricular activities
  - Student safety
  - Social life
14. Is there anything else you'd like to share about your level of satisfaction with your campus life?  
[Text Box]
15. Should UGs have more department component in first year of UG curriculum to provide a better introduction to department engineering at the very early stage? (to be responded by UGs only)
- Yes
  - No
  - Neutral
16. Should UGs have more computational/programming component in UG curriculum (by having more tutorials that involve computations)? (to be responded by UGs only)
- Yes
  - No
  - Neutral
17. Should inter-department dual degree programmes (say bachelor's in mechanical, masters in IEOR) be introduced and allowed for all departments to provide a greater width of engineering education?(to be responded by UGs only)
- Yes
  - No
  - Neutral
18. Should UGs be allowed to do long term (few semesters) research projects for credits - with the number of credits proportional to work done? (to be responded by UGs only)
- Yes
  - No
  - Neutral
19. Suggest how these long-term research projects can be evaluated. (to be responded by UGs only)  
[Text Box]
20. Suggest how these long-term research projects can be evaluated. (to be responded by UGs only)  
[Text Box]

21. How strongly do you feel the role of the guide (for Masters and PhD students) needs to be redefined?
  - Don't feel so at all
  - Strongly feel so
22. How do you feel we can make IITB students much more in sync with industrial requirement?  
[Text Box]
23. How strongly do you feel that the role of the faculty adviser be redefined?
  - Don't feel so at all
  - Strongly feel so
24. Please provide your inputs on faculty-student interaction and ways to improve upon them.  
[Text Box]
25. How strongly do you agree that we should have more humanities and social science component in our engineering degree?
  - Strongly agree
  - Agree
  - Neutral
  - Disagree
  - Strongly disagree
26. Should the institute continue to build upon its strengths in the field of Engineering and technology or should we be broadening into areas such as Medicine, Acting, Music, Direction, Architecture etc?  
[Text Box]
27. How would you rate the quality of research in IIT Bombay?
  - Extremely competent
  - Moderately competent
  - Not at all competent
28. Should we as an institute aim at self sufficiency in terms of energy and recycling waste?
  - Strongly agree
  - Agree
  - Neutral
  - Disagree
  - Strongly disagree
29. Should the institute implement water harvesting and conservation systems in the institute?
  - Strongly agree
  - Agree
  - Neutral
  - Disagree
  - Strongly disagree
30. How strongly do you agree that the campus is clean?
  - Strongly agree
  - Agree
  - Neutral
  - Disagree
  - Strongly disagree
31. How would you rate the quality of hostel life?
  - Extreme satisfaction
  - Moderate satisfaction
  - Neutral

- Moderate dissatisfaction
  - Much below par
32. What suggestions would you give to improve the hostel life?  
[Text Box]
33. How strongly do you agree that the institute library provides a conducive environment for learning?
- Strongly agree
  - Agree
  - Neutral
  - Disagree
  - Strongly disagree
34. If you had a chance to implement changes in the structure and functioning of library, what would that changes be?  
[Text Box]
35. Given the space constraints, can you identify some places which can be converted into such hubs?  
[Text Box]
36. Do you think that Academic honesty is there among students?
- Yes
  - No
37. What do you think are the reasons due to which students get involved in various academic malpractices?  
[Text Box]
38. How can we encourage ethical behaviour among students?  
[Text Box]
39. How do we cater to an all-round development of such students through engagement in institute life?  
[Text Box]
40. What should the institute do to promote entrepreneurship?  
[Text Box]
41. The subject rank in QS world ranking for Engineering and IT is 52. Should the institute document explicitly mention that IIT Bombay should target to be one of the top Institutes in Engineering and IT.
- Yes
  - No
42. If so, what is the rank IIT Bombay should aspire for?  
[Text Box]
43. Any other ideas, suggestions or comments on any questions asked are most welcome  
[Text Box]

\*\*\*\*\*THANK YOU\*\*\*\*\*

Annexure 2  
IITB Faculty Survey Questionnaire

1. Your affiliation
  - Assistant Professor
  - Associate Professor
  - Full Professor
2. Gender
  - Male
  - Female
3. Name of the Department/Centre/School  
[Text Box]
4. Place of residence
  - Inside the campus
  - Outside the campus due to personal choice
  - Outside the campus, desiring to stay inside
5. Overall, are you satisfied being a faculty member at IIT Bombay?
  - Very satisfied
  - Somewhat satisfied
  - Neutral
  - Somewhat dissatisfied
  - Very dissatisfied
6. Please rate your satisfaction with the following aspects of your work at IITB. (1 is Very satisfied, 2 is Somewhat satisfied, 3 is Neutral, 4 is Somewhat dissatisfied, 5 is Very dissatisfied)
  - Teaching
  - Research
  - Administrative responsibilities
7. Do you agree with the vision statement of IITB?
  - Yes
  - No
  - Not sure
8. Do you agree with the mission statement of IITB?
  - Yes
  - No
  - Not sure
9. The document lists FIVE core values adopted by the institute. Do you agree with them?
  - Yes
  - No
  - Not sure
10. The document highlights NINE goals to achieve the vision of becoming a leading educational institute. Do you broadly agree with the goals?
  - Yes
  - No
  - Not sure
11. Are you satisfied with the resources IITB provides to engage with society and industry?
  - Very satisfied
  - Somewhat satisfied
  - Neutral
  - Somewhat dissatisfied

- Very dissatisfied
12. The vision documents FIVE action points under this goal. Do you agree with them?
    - Yes
    - No
  13. The vision document suggests adding new disciplines such as medicine, finance, law, fine arts and architecture, film and media. Do you agree with it?
    - Yes
    - No
  14. Please rate your satisfaction with the following resources that IITB has provided to support the following activities. (1 is Very satisfied, 2 is Somewhat satisfied, 3 is Neutral, 4 is Somewhat dissatisfied, 5 is Very dissatisfied)
    - Teaching
    - Research
    - Outreach activities
  15. IIT Bombay now has 10,000 students, 600 faculty and 1225 staff members on its rolls. Rate IITBs effort to provide infrastructure.
    - Very good
    - Reasonably good
    - Need improvement
  16. Do you agree that the out-of-class contact with undergraduate students is decreasing?
    - Yes
    - No
  17. If yes to the above question, then suggest ways to strengthen out of class interaction between faculty and student.  
[Text Box]
  18. Are you satisfied with the facilities provided to the Ph.D students, such as housing, lab & office space, library and computer facilities?
    - Yes
    - No
  19. The document discusses ways to improve support for research projects. Do you agree with the suggestions?
    - Yes
    - No
  20. In your opinion, does IITB have adequate infrastructure to provide students (BTech, MTech and PhD) with an excellent (overall) student experience?
    - Yes
    - No
  21. Do you believe that the ethical standards amongst the students is a concern for the institute?
    - Extreme concern
    - Moderate concern
    - Somewhat a concern
    - Slight concern
    - Not at all a concern
  22. Currently, IITB receives a significant part of its fund from the MHRD. Should IITB attempt to broaden its funding base?
    - Excellent idea
    - Good idea
    - Not sure
    - Seek additional government funding
  23. Should IITB seek to attract international students and faculty?
    - Would be enriching

- No strong opinion
  - No
24. Do you broadly agree with the four major steps to improve the research quality of IITB?
- Yes
  - No
25. Do you broadly agree with the action points for creating future leaders/innovators?
- Yes
  - No
26. SIX action points have been listed to enhance gender diversity among students, staffs, and faculty. Do you agree with them?
- Yes
  - No
27. The subject rank in QS world ranking for Engineering and IT is 52. Should the institute document explicitly mention that IIT Bombay should target to be one of the top Institutes in Engineering and IT.
- Yes
  - No
28. If so, what is the rank IIT Bombay should aspire for?  
[Text Box]
29. Additional remarks on any. Please elaborate it here.  
[Text Box]

\*\*\*\*\*THANK YOU\*\*\*\*\*

Annexure 3  
IITB Staff Survey Questionnaire

1. Category of employment
  - Class A
  - Class B
  - Class C
2. Gender
  - Male
  - Female
3. Place of residence
  - Inside the campus
  - Outside the campus due to personal choice
  - Outside the campus, desiring to stay inside
4. How many years have you worked at IIT Bombay?
  - 1-5 years
  - 6-10 years
  - 10-20 years
  - 21 years and more
5. Do you have supervisory responsibilities?
  - Yes
  - No
6. If "Yes" to Q 7, then answer the following: (1 is Very satisfied, 2 is Somewhat satisfied, 3 is Neutral, 4 is Somewhat dissatisfied, 5 is Very dissatisfied)
  - Is there is a healthy superior-subordinate relationship?
  - Are you happy with your involvement in decisions that affect your work?
  - Do you get an opportunity to contribute to the growth of IITB?
  - Do your subordinate employees have a clear understanding of their roles and responsibilities?
  - Is the placement of the employees is as per the job requirements?
  - Is the workload distributed fairly in your department/section?
7. If "No" to Q7, then answer the following: (1 is Very satisfied, 2 is Somewhat satisfied, 3 is Neutral, 4 is Somewhat dissatisfied, 5 is Very dissatisfied)
  - There is a healthy superior-subordinate relationship?
  - How approachable is your supervisor?
  - How available to employees is your supervisor?
  - Are you happy with your involvement in decisions that affect your work?
  - How reasonable are the decisions made by your supervisor?
  - Does your supervisor respond constructively to the mistakes done by you?
  - Is the workload distributed fairly in your department/section?
8. Overall, how satisfied are you with your job at IIT Bombay?
  - Very satisfied
  - Somewhat satisfied
  - Neutral
  - Somewhat dissatisfied
  - Very dissatisfied
9. Would you agree that IIT Bombay does a good job of recognizing the contributions of staff?
  - Strongly agree
  - Agree
  - Neutral



- Disagree
  - Strongly disagree
10. Does IIT Bombay support you in pursuing learning and professional development opportunities?
    - Yes
    - No
    - Could be better
  11. Are you satisfied with the opportunities for promotion within IIT Bombay?
    - Very satisfied
    - Somewhat satisfied
    - Neutral
    - Somewhat dissatisfied
    - Very dissatisfied
  12. Would you agree that your performance review is conducted on a regular basis?
    - Yes
    - No
  13. If yes, does your performance reviews provide you with useful feedback on your work?
    - Yes
    - No
  14. Would you agree that the facilities at the institute (accommodation, school, hospital, dues settled at the time of retirement, etc.) meet the needs of the employees?
    - Strongly agree
    - Agree
    - Neutral
    - Disagree
    - Strongly disagree
  15. Are employee grievances fairly settled in the institute?
    - Strongly agree
    - Agree
    - Neutral
    - Disagree
    - Strongly disagree
  16. Are women employees treated on par with their male counterparts in employment, promotions, and social interactions?
    - Strongly agree
    - Agree
    - Neutral
    - Disagree
    - Strongly disagree
  17. If you are experiencing stress, tick the following source of stress? (tick as many you feel is the reason)
    - Financial matter
    - Own health ailments
    - Care of someone who is chronically ill, disabled or ageing in your family
    - No answer
  18. Did you have an opportunity to get a similar job outside IIT Bombay?
    - Yes
    - No
    - Did not try
  19. If yes to Q20, then what made you stay back in IIT Bombay?
    - Professional career advancement

- Working conditions and relations with IIT Bombay community
  - Facilities at IIT Bombay
20. How likely are you to recommend IIT Bombay as a good place to work?
- Extremely likely
  - Likely
  - Not at all likely
21. Would you agree that the vision statement reflects what IIT Bombay hopes to become in future?
- Strongly agree
  - Agree
  - Neutral
  - Disagree
  - Strongly disagree
22. Would you agree that the mission statement clearly reflects IIT Bombay's objective to be a global technology university?
- Strongly agree
  - Agree
  - Neutral
  - Disagree
  - Strongly disagree
23. Would you agree with the strategic goals and objectives of IIT Bombay?
- Strongly agree
  - Agree
  - Neutral
  - Disagree
  - Strongly disagree
24. Do you agree with the five core values (integrity, excellence, accountability, transparency and empathy)
- Strongly agree
  - Agree
  - Neutral
  - Disagree
  - Strongly disagree
25. There are different ways by which IIT Bombay can engage with the society. Which of these would you prioritize?
- Provide solutions to social problems especially pertaining to our nearby environment (e.g., waste management)
  - Attempt to provide solutions to national issues
  - Attempt to provide solutions to problems that affect a large section of society (e.g., malnutrition)
  - Increase application based research
  - Increase industry collaborations
26. IIT Bombay currently offers degrees in science and engineering, humanities, design and management. Should IIT Bombay broaden its educational programmes?
- Most certainly
  - With caution
  - Should sharpen its focus
27. IIT Bombay now has 10,000 students, 600 faculty and 1225 staff members on its rolls. Rate IIT Bombay's effort to provide infrastructure.
- Very good
  - Reasonably good
  - Need improvement

28. In your opinion, does IIT Bombay have adequate infrastructure to provide students (BTech, MTech & PhD) for an excellent (overall) student experience?
- Yes
  - No
29. Currently IIT Bombay receives a significant part of its funding from the MHRD. Should IIT Bombay attempt to broaden its funding base?
- Excellent idea
  - Good idea
  - Seek additional government funding
30. Should IIT Bombay seek to attract international students and faculty?
- Would be enriching
  - No strong opinion
31. On a regular basis you have been interacting/catering to many stakeholders (faculty, students, staff, industry etc.) in the institute. How in your opinion, can you add value to your work concerning the respective stakeholder?
- [Task Box]
32. The subject rank of IIT Bombay in QS world ranking for Engineering and IT is 52. Should the institute document explicitly mention that IIT Bombay should target to be one of the top Institutes in Engineering and IT.
- Yes
  - No
33. If so, what is the rank IIT Bombay should aspire for?
- [Task Box]
34. Additional remarks (if any)
- [Task Box]

\*\*\*\*\*THANK YOU\*\*\*\*\*

Annexure 4  
IITB Alumni Survey Questionnaire

1. Would you agree with the core values that shape IIT Bombay's vision and mission?
  - Strongly agree
  - Agree
  - Neutral
  - Disagree
  - Strongly disagree
2. Higher education in a developing nation with a very large population, has the additional challenge of prioritizing its objectives. Which of these would you prioritize?
  - To be transformative
  - To create leaders
  - Address problems faced by the nation and the world
3. What is your response to the list of goals?
  - Strongly agree
  - Agree
  - Neutral
  - Disagree
  - Strongly disagree
4. What is your response to the action points mentioned in the draft document for enhancing engagement with society and industry?
  - Realistic
  - Too ambitious
  - Should be more ambitious
5. IIT Bombay currently offers degrees in science and engineering, humanities, design and management? Should IIT Bombay broaden its educational programmes?
  - Most certainly
  - With caution
  - Certainly not
  - Should sharpen its focus
6. Medicine, Fine-Arts, Architecture, Film-and-Media, Finance and Law are new directions that could be broaden the education offered at the IITs. Which of these would you prioritize?
  - Medicine
  - Fine-Arts and Architecture
  - Finance
  - Law
7. Are there other directions that ought to be considered?  
[Text Box]
8. IIT Bombay now has 10,000 students, 600 faculty and 1225 staff members on its rolls. Rate IIT Bombay's effort to provide infrastructure.
  - Very adequate
  - Adequate
  - Could be improved
  - Very inadequate
9. Currently IIT Bombay receives a significant part of its funding from the MHRD. Should IIT Bombay attempt to broaden its funding base?
  - Excellent idea
  - Good idea
  - Maintain status quo
  - Seek additional government fund

10. Should IIT Bombay seek to attract international students and faculty?
  - Seek additional government fund
  - No strong opinion
  - No
11. SINE (Society for Innovation and Entrepreneurship) is one of the IIT Bombay's initiative towards encouraging innovation and entrepreneurship. Is IIT Bombay doing enough in its attempts to become a centre for creating future leaders and innovators?
  - Yes
  - No
  - Could be better
12. Has IIT Bombay addressed gender diversity sufficiently?
  - Yes
  - No
13. In your opinion which are three key frontiers of knowledge that IIT Bombay should have on its radar?  
[Text Box]
14. In your opinion, what are we doing well and in what areas do we need to improve?  
[Text Box]
15. The subject rank of IIT Bombay in QS world ranking for Engineering and IT is 52. Should the Institute document explicitly mention that IIT Bombay should target to be one of the top Institutes in Engineering and IT.
  - Yes
  - No
16. If so, what is the rank IIT Bombay should aspire for?  
[Text Box]
17. How would you rate your experience as a student at IIT Bombay?
  - Very satisfying
  - Somewhat good
  - Just okay
  - Could be better
  - Glad to be away
18. Today, how connected do you feel with IIT Bombay?
  - Extremely connected
  - Somewhat connected
  - Not at all connected
19. Would you like to be engaged with IIT Bombay?
  - Yes
  - No
20. If yes to Q19 , then how would you like to be connected to IIT Bombay? (Please tick as many as applicable)
  - I am interested in meeting IITB students
  - I am interested in alumni mentorship program
  - I am interested in helping to support the activities of students
  - I am interested in helping to support the activities of my batch
  - I am interested in the research activities of IITB
  - I am interested in participating in IITB fundraising activities
  - I am interested in learning more about opportunities to connect with my alma mater
21. Is there any additional feedback that you would like to offer?  
[Text Box]
22. About the respondent:

Name:  
Occupation:  
Your affiliation at your work place:  
Gender:  
Graduation year:  
Department:

\*\*\*\*\*THANK YOU\*\*\*\*\*

Annexure 5

DFM SCHEDULE

<b>Sl.No.</b>	<b>Date</b>	<b>Dept.</b>	<b>Observers</b>
1	11 <sup>th</sup> Jan	Aero Engg.	Prof.Prasanna Majumdar & Prof.Rangan Banerjee
2	11 <sup>th</sup> Jan	BSBE	Prof.S Sudarshan & Dr.Pravasini Sahoo
3	13 <sup>th</sup> Jan	IDC	Prof.Raja Mohanty & Dr.Pravasini Sahoo
4	14 <sup>th</sup> Jan	Mech. Engg.	Prof. Asim Tewari & Prof. Raja Mohanty
5	16 <sup>th</sup> Jan	CSE	Prof.Abhay Karandikar & Prof. S Sudarshan
6	17 <sup>th</sup> Jan	Chem Engg.	Prof.Rangan Banerjee & Dr.Pravasini Sahoo
7	17 <sup>th</sup> Jan	Elect.Engg.	Prof.Subhasis Chaudhury & Prof.Abhay Karandikar
8	17 <sup>th</sup> Jan	CSRE	-
9	18 <sup>th</sup> Jan	Maths	Prof.Rangan Banerjee & Dr.Pravasini Sahoo
10	18 <sup>th</sup> Jan	MEMS	Prof.Prita Pant & Prof.Pushpa Trivedi
11	18 <sup>th</sup> Jan	Civil Engg.	Prof.Asim Tewari
12	18 <sup>th</sup> Jan	Energy Sc.	Prof.Rangan Banerjee
13	18 <sup>th</sup> Jan	Chemistry	Prof.R Murugavel
14	23 <sup>rd</sup> Jan	Young Faculty	Director
15	24 <sup>th</sup> Jan	Fellows of Academies	Prof. R Murugavel
16	27 <sup>th</sup> Jan	Students Open House	Director & Prof.Rangan Banerjee
17	7 <sup>th</sup> Feb	HSS	-
18	27 <sup>th</sup> Feb	International Students	Prof.Rangan Banerjee & Dr.Pravasini Sahoo
19	3 <sup>rd</sup> Apr	Staff	Prof.Rangan Banerjee & Dr.Pravasini Sahoo