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A Study of Initiatives by Entrepreneurship Development Cell in Indian Institutes of Technology (IITs)

Madhura Wagh*
Lecturer, RSSP's Maharashtra College of Science and Commerce, Kothrud, Pune

Abstract: Entrepreneurship in India is divided in two ways: 'opportunity entrepreneurship' and 'necessity entrepreneurship'. For the growth of opportunity entrepreneurship, development of entrepreneurial ecosystem is necessary. Global Entrepreneurship Monitor 2013-India report suggests introduction of entrepreneurship education at undergraduate university level as well as at engineering and technical institutions to promote commercialization of R&D and technology-based enterprises should be made mandatory in all states. IITs are able to develop such ecosystem through their ED Cells. Hence, study of initiatives by ED Cells in IITs was important.

Current Indian Economy

According to *Global Entrepreneurship Monitor* Indian economy is factor-driven economy In factor-driven economies, economic growth of the country is determined by primary factors of production i.e. land and labour (mostly unskilled). Economic activity in these economies is primarily based on the extraction of natural resources; the focus is on building a subsistence and basic level of foundation.

This report divides entrepreneurship in India in two ways:

- Opportunity entrepreneurship, and
- Necessity entrepreneurship

'Necessity entrepreneurship' involves people who start a business because other employment options are either absent or unsatisfactory. One has to become entrepreneur because there is no better option of work. In contrast, 'opportunity entrepreneurship' involves those who choose to start their own business by taking advantage of a perceived entrepreneurial opportunity.

Almost 58% of early-stage entrepreneurs were motivated to start a venture by some business opportunity, i.e. roughly 6% of the total adult population was opportunity-driven entrepreneurs. Correspondingly, about 40% of early-stage entrepreneurs were forced into entrepreneurship due to lack of other alternatives, and 4% of the total adult population were necessity-driven entrepreneurs.

Entrepreneurship and Education

Global Entrepreneurship Monitor 2013

India report suggests introduction of entrepreneurship education at undergraduate university level as well as at engineering and technical institutions to promote commercialization of R & D and

**Corresponding Author E-mail*: madhuramwagh@gmail.com

technology-based enterprises should be made mandatory in all states. Entrepreneurship education needs to be accompanied with dynamic lectures delivered by expert faculty in entrepreneurship. Experienced entrepreneurs with proven track records in business should be recruited for mentorship programmes. There should be interactive sessions between mentors and students. This would help to mitigate fear of failure and set role models for potential entrepreneurs.

Education and training need to be imparted to fill in gaps at grassroots levels. Quality of education differs from area-to-area. Quality education at all levels, will increase employment opportunities for the individual, and also reduce necessity entrepreneurship. It will pave way to increase the individual's alertness to identify and exploit business prospects and thus increase opportunity entrepreneurship.

Entrepreneurship Development Cell (ED Cell)

In India, it is believed, tremendous hidden entrepreneurial talent exists which if properly harnessed, could be helpful in solving many of the serious problems faced by the country. Harnessing this hidden entrepreneurial talent through entrepreneurship training to target groups of population is now considered to be viable alternative to many of the problems facing the country.

Youth, in general, in the country, lack information about the entrepreneurial opportunities, schemes, incentives etc. which was found acting as one of the deterring factors for choosing the industrial entrepreneurship.

The Entrepreneurship Development Cell is being promoted in educational institutions to develop institutional mechanism to create entrepreneurial culture in Science & Technology academic institutions and to foster techno-entrepreneurship for generation of wealth and employment by Science & Technology persons. The ED Cells are established in academic institutions (science colleges, engineering colleges, universities, management institutes) having requisite expertise and infrastructure. The mission of the ED Cell is to "develop institutional mechanism to create entrepreneurial culture in academic institutions to foster growth of innovation and entrepreneurship amongst the faculty and students."

Government has a separate mechanism for entrepreneurship development. Now, a new ministry has also been started as Entrepreneurship and Skill Development Ministry. Various institutions are working all over India for nurturing entrepreneurship skills in young generation. Entrepreneurship Development Cell is one of the ways to develop entrepreneurship in students. National Science and Technology Entrepreneurship Development Board (NSTEDB) have specified functions of ED cell.

Objectives of Study

1. To analyze initiatives organized by ED cell
2. To examine arrangements for mentorship
3. To find out ideal ecosystem for ED cell
4. To give suggestions for improvement of ED Cell

Hypothesis

H_1: ED Cells of IITs arrange innovative activities for awareness and development of entrepreneurship.

Research Gap

After literature review, it was revealed that working of ED Cell is not yet studied by any researcher. ED Cells are important milestones for development of entrepreneurship in students.

Research Methodology

In this research, researcher wants to find out initiatives by Entrepreneurship Development Cells in IITs. Now, for the growth of Indian economy, it is necessary to shift the concentration from consumer goods to capital goods. Production for capital goods can be increased by engineer entrepreneurs. IITs are supposed to produce best engineers in the country and hence entrepreneurship of IITans is very important.

There are 23 IITs as on date, out of which, 6 are established in 2015–16. Hence, for the research purpose, 17 IITs, which were established before 2016 are taken into account.

All IITs have separate websites for their ED Cell. The research is based on information as updated on websites of ED cells of IITs. The paper is based on secondary data.

Literature Review

Neeta Baporikar describes three phases of entrepreneurship development in her book *Entrepreneurship Development and Project Management:*

1. ***Initial Phase***: Creation of awareness about the entrepreneurial opportunities based on service and research
2. ***Development Phase***: Implementation of training programmes to develop motivation and management skills.
3. ***Support Phase***: Infrastructural support of counseling, assisting to establish new enterprise and to develop existing unit.

She analyzed barriers to entrepreneurship in 3 categories: Entry barriers, Survival barriers and Exit barriers.

Sandeep Vij and Pooja Sharma examine entrepreneurial drive of business students in 'Does Entrepreneurial Education Enhance the Entrepreneurial Drive of Business Students?'. The study explores the effects of demographics on the entrepreneurial drive of students and compares the level of entrepreneurial drive among groups of students who have or who have not undergone some training on entrepreneurship. The results of the study show that type of family and genders

of student do not positively affect the entrepreneurial drive of students. The study proves that entrepreneurial education enhances confidence of students which makes them self-dependent. The study explains the necessity of entrepreneurship education in the curriculum of studies. Authors also have given suggestions for trainers and government departments concerned with entrepreneurial development.

In the article 'Entrepreneurship Requires Good Real-life Connect' Abhishek Choudhari speaks about disconnect between education and entrepreneurship. The education system is producing job seekers; job creators are not developed at all. The fundamental aim of education should be shifted to entrepreneurship. Students should not be developed as managers or accountants or software developers but should be oriented with all aspects of starting and growing their own venture. Entrepreneurship is like learning swimming which cannot be learnt by studying books. It's about doing it and learning it.

Analysis of Data

Table 1

IITs under Study	Initiatives
IIT Bombay	Fcof, E-summit, Eureka, NEC, EnB, SSP. IITB run
IIT Delhi	Campus CEO, Job fair, Internship portal, Blog
IIT Kanpur	E-summit, TEDx–annual talk, start up internship programme, Enacts, Campus entrepreneurs, Startup 101, Interaction with entrepreneurs
IIT Kharagpur	Global entrepreneurship summit, entrepreneurship drive, mentorship programme, start up service programme, E-adda, Start in, Campus Ambassador programme, Angle network, Product innovation network
IIT Madras	E- summit, Nirman-product development, blog, start ups showcase
IIT Guwahati	E-summit, B-plan competition, initial funding, working to solve campus problems, internship, freelancing
IIT Roorkee	Jugaad–business plan competition, Prernayatra, start up internship, guest lectures, workshops
IIT Hyderabad	Idea to business workshop, spark lecture series, B-plan, startup internship
IIT Patna	Entrepreneurship awareness drive, Entrepreneur's week, start in, B-debate, e-fest
IIT Jodhpur	Introductory session, entrepreneur business ideas, startup visit
IIT Bhubaneswar	E-Summit, workshops, startup centres
IIT Ropar	PDI Fund
IIT Gandhinagar	Competitions, venture seed funding, mentoring
IIT Indore	Idea competition, enactus
IIT Mandi	Business plan competition
IIT Varanasi	Workshops, B-Plan competition, innovator's camp, entrepreneurship development programme, Faculty development programme

Table 2

Initiative	IITs Following
Funding support	16
Business plan competition	12
E-summit	9
Start up internship	8
Workshops	8
Blog	6
Entrepreneurship drive/ run	2
Enacts projects	2
National entrepreneurship challenge	1
Startup visit	1
Working to solve campus problems	1
	66

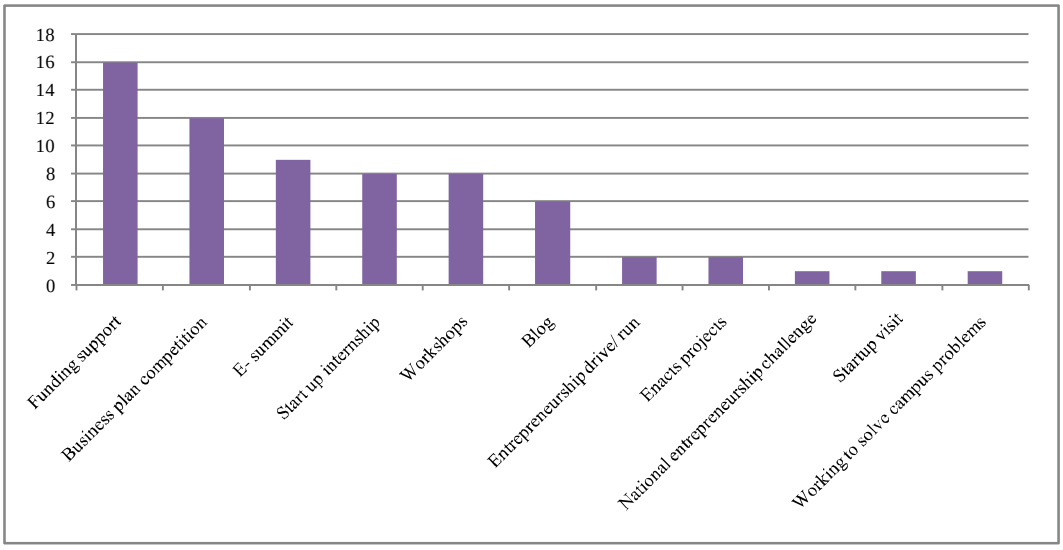

Fig. 1

After analyzing the data, it is revealed that 80% of initiatives are common across all IITs. Distinct initiative which should be followed by all IITs is National Entrepreneurship Challenge.

Observations and Findings

IITs were established in India in 3 phases. First five IITs were established during 1950–60. In 1994 IIT Bhubaneswar was established. Then, after a long period, in 2008–09 another 8 IITs were established. In 2012, IIT Varanasi was recognized. Again, in 2015–16, 7 new IITs were established:

- ED cells in IITs which were established in second phase i.e. 2008–09 are at infant stage and ED cells in IITs established in first phase are matured.
- ED cells in IITs is students run activity. Faculties work as mentors for them.
- Activities of ED cell are organized only for members of ED cell.
- Because of high status of IITs, ED cells are supported by business tycoons.
- ED cells have strong connection between them and startups.
- Activity E-summit is organized by all IIT ED cells. E-summit consists of startup workshop, internship and job fair, startup Expo, innovation and business conclave. E-summit brings together venture capitalist, angel investors and aspirant entrepreneurs.
- B-Plan competition is also arranged by all ED cells. In the Business Plan Competition students have to present comprehensive Business Plan for their own idea of business.
- ED cells give importance to innovative businesses. Students are able to develop new technologies and products with their regular studies.
- Most of the startups are in the category of service sector and consumer goods. Development for production of capital goods is overlooked.
- All IITs have their own incubation centres for business. ED cells are connected with incubation centre. Incubation centre provides basic facilities required for startup and also provides consultation facility for aspects related to business. E.g. legal aspects, marketing.
- ED cells are not connected to each other or to any entrepreneurship development institutions.
- ED cell of IIT Bombay have a distinctive initiative 'National Entrepreneurship for All.

Hypothesis Testing

Hypothesis is Accepted: Entrepreneurship development institutions give more importance to entrepreneurship development trainings, workshops and guest lectures. In addition to these activities, ED Cells in IITs take initiatives in actual conversion of idea to business.

Suggestions

ED cells are supposed to build entrepreneurial talent in students. If students are made aware about entrepreneurship at very early stage, they can afford risk of business. They will get a chance to experiment their ideas and to test feasibility of business:

- For fostering entrepreneurship in students, entrepreneurship awareness activities should be compulsory for all students. Students who are not aware about entrepreneurship will not become member of ED Cell and in turn will lose the opportunity to develop them as entrepreneurs.
- Indian economy needs imitating entrepreneurs also. There is no need to give stress on innovations. ED Cells and incubation centres should support imitating entrepreneurs also.
- ED Cell should build ecosystem for production of capital goods. Import substitution is also important activity for growing entrepreneurship.
- ED cells and incubation centres of IITs should be connected to all science and technology institutes in that region. They have to support and guide ED cells in science and technology institutes. The network of all ED cells and incubation centres will be able to improve entrepreneurship in whole region and in turn in whole country.
- There should be a network of entrepreneurship development institutes and ED cells in institutes. Entrepreneurship development institutes initiate research on entrepreneurship which will become helpful for ED cells. It will build the gap in theory and practice.

Further Scope of Study

The study should be undertaken for assessing the success of ED cells. It is not clear what should be the parameters to measure the success of ED cells. The parameters could be any one or more of the following:

- Number of initiatives by ED cell
- Number of students attended the initiative
- Number of students became entrepreneurs

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