

Inevitability of Entrepreneurial Skills in Technology Enabled Education among Engineering Students in Chennai

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Abstract:

Entrepreneurship is considered to be the cornerstone of the development of the economy of any nation in general and India, in particular. The Institutions and Universities which are running engineering courses are taking enormous efforts in educating their students by providing them all sorts of skill sets which are very much technologically advanced. The technology enabled education in the engineering institutions make the students to face the competitive job market in the best possible manner. In the light of that the engineering institutions are taking enormous efforts to improve the skill sets of the engineering students with the technology enabled education. In spite of that there is a gap in the engineering education with regard to honing the entrepreneurial skills of engineering students. The contribution of entrepreneurs is considered to be a vital aspect for the growth of our Indian economy. Developing the entrepreneurial skills of the engineering students will make the students to think about job creation rather than searching of jobs. The quality of engineering education will also pave way for the development of entrepreneurial skills among the engineering students. This will automatically enable the students to come out with innovative ideas and ultimately to go for startup ventures. The study aims at identifying the factors influencing the entrepreneurial skills in the technology enabled education among engineering students in Chennai.

Keywords: Entrepreneurial Skills, Traits of Entrepreneurship, Startups, Incubation, Entrepreneurial development.

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I. INTRODUCTION

Entrepreneurship is considered to be one of the most important qualities of an individual to initiate the inner thinking with regard to the innovation of ideas for the benefit of starting a business venture. An entrepreneur has to realize that there is some sort of innovative ideas that are submerged inside an individual that has to be brought out as business ideas for the benefit of the society in which he or she lives. The business ideas of the entrepreneur can be converted into a profitable venture by utilizing the available manpower, resources, machinery and money. By utilizing the resources that are wide spread around the entrepreneur, he or she utilizes

them and manages them in the efficient and effective manner. Moreover the entrepreneur has the greatest responsibility of managing the uncertainty and risk that are prevailing in the market place in the process of converting the ideas into business reality. The entrepreneur creates wealth in the process of venturing into the business and should sustain in the business for a longer period of time as he or she could see the expansion and growth of the business venture into a larger entity.

The students of engineering institutions learn about various engineering techniques and processes through which the dream of the students can be

fulfilled. In order to accomplish the task of fulfilling their dreams, it would be essential to bring out their entrepreneurial skills by highlighting its importance and the need of the hour to a nation like India. At the same time, not every engineering can become an entrepreneur as revealed by a number of entrepreneurial studies made in the past. It is an ardent task to identify the most potential student who should possess the innovative ideas and also at the same time, the student should have an entrepreneurial intent and competence. The engineering student must first be exposed to the available opportunities based on the entrepreneurial intent and then the entrepreneurial skill sets must be elicited. In the process of eliciting the entrepreneurial skills, the traits of the students must properly be identified so that it will be feasible for the student to materialize the ideas that he or she possesses. The student might have understood the requirements for the entrepreneurial skill sets but without any proper ideas then it cannot be materialized.

The main idea behind the entrepreneurial study is to identify the possibilities for the engineering students who learn the technologically advanced concepts during the course of the engineering study, which will lead them to start their own organizations with the newly formulated ideas. The confidence that the engineering students should possess with regard to the entrepreneurial intent will decide the destiny of the business ideas. The lack of confidence will make the students to fail in their attempt of becoming an entrepreneur ultimately collapsing the business venture. The study proposes to identify the impact of the factors such as economical factor, demographical factor, psychological factor and socio-cultural factors on the entrepreneurial skill sets among the engineering students in Chennai. The entrepreneurial skills will enable the engineering students to become job givers rather than to become job seekers.

II. LITERATURE REVIEW

Luyu Li & Dandan Wu (2019) specifies about the inclination that is required among the students to have start-up while pursuing their courses in the universities and colleges. The entrepreneurial passion among the aspiring students will make them as entrepreneurs and sustain in the field for a long period of time. The self-discipline and self-motivation of the students are studied in-detail by the researchers with regard to the aspiring students who wishes to become entrepreneurs even while doing the course of study. Moreover the study elicits the relationship between the way through the students are educated and the intentions of the students to become entrepreneurs. The entrepreneurial study enhances the knowledge of the students to become as entrepreneurs and also will enable them to work in teams.

Muhammad Israr & Mazhar Saleem (2018) describes that the relevance and vitality of entrepreneurship instead of students going for individual jobs. The ability to own businesses must be imbibed into the minds of the students, the moment they enter into the educational institution. The students must be made bring-out the ideas about a subject matter and should try to establish the idea by developing a business model. The entrepreneurial intent of the students are considered to be the vital elements of a successful entrepreneurs. The aspiring entrepreneurs should cultivate the ability to manage situation even in the case of financial short-comings, after all every business will face such situations related financial crunches.

Mukta Mani (2015). The article specifies about the pertinent of entrepreneurship education which provides an idea to the aspiring entrepreneurs to acquire the necessary skills which make them as successful entrepreneurs. The engineering institutions are basically responsible for nurturing the skills of entrepreneurship among their students and should education them with the available technology so that the students will get motivated by taking-up the entrepreneurial activities while

pursuing the engineering course itself. The entrepreneurial education will make the aspiring students to face the market situation with courage and boldness so as to overcome the hurdles. The most importance aspects that an entrepreneur possesses such as creativity, ability to take decisions under risk and uncertainty, communication ability, human resources managing ability and the ability to judge the market place and bring out the necessary action-oriented business plan, must be incorporated in the minds of aspiring entrepreneurs.

Riccardo Fini et al (2012) aims to highlight the behaviour of individual entrepreneurs for better outcome of the organizations. The entrepreneurs should necessarily possess the ability to face the situation and also should try to solve the issues related to business start-ups. The entrepreneurs should also possess the ability to forecast the current situation for the future. If the entrepreneurs does not at proactively then it may lead to a situation wherein the entrepreneurs will lose money and time. The entrepreneurs should have to have the entrepreneurial intentions for better performance.

Mário Franco (2009) - The research article describes about the intention of students taking up the entrepreneurial career immediately after completing their education and training. The skills that are required to shape the candidates should necessarily have the regional dimension which will enable the students to pursue the entrepreneurial career without much hassle and tussle. The author describes about the entrepreneurial intent to have the business start-ups by utilizing the ideas related to their field of education and training. The self-motivated entrepreneurs will perform and function in a better way than the entrepreneurs who are driven by others.

III. RESEARCH METHODOLOGY

The study aims to analyses the entrepreneurial traits of the engineering students who are doing their engineering courses in different disciplines of the

engineering institutions located in Chennai. The population of the study was taken as the final year engineering students of various engineering universities and colleges in Chennai. The total sample size of the analysis was 385 which were identified by using the sample size formula suggested by Cochran with 95% confidence level. The samples were collected by using cluster sampling method. The sample responses were obtained by using a Likert Scale with five-point scale from 5 (strongly agree) to 1 (strongly disagree). A pilot study was conducted with 50 samples and was found to be reliable and consistent. 450 questionnaires were administered to the final year engineering students of Chennai and 385 samples were finalized.

IV. RESEARCH OBJECTIVES

The research objectives of the study are given below:

- To study the demographic factors of the engineering students with regard to entrepreneurial traits.
- To find out the significant difference in the mean scores of the dimensions of entrepreneurial traits
- To analyze the significant relationship between the demographic factors and the dimensions of entrepreneurial traits.

V. HYPOTHESIS OF THE STUDY

The hypotheses of the study are formulated to achieve the objectives of the study:

H₀₁: There is no significant difference between the mean scores of the dimensions of entrepreneurial traits.

H₀₂: There is no significant relationship between the dimensions of entrepreneurial traits and demographic factors.

VI. RESULTS AND DISCUSSION

The article aims to analyze the entrepreneurial traits of the engineering students who are pursuing

their courses in various institutions in Chennai. The analysis begins with the demographic analysis of the response collected from the engineering students. The demographics analysis of the questionnaire data are given from Table-1 to Table-7. 72% of the respondents for the questionnaire were the male students pursuing the engineering course under various disciplines followed by 31% of the female students. 81% of the students have shown interest in pursuing their career towards entrepreneurship after their education whereas 19% of the respondents have not bothered about being an entrepreneur. 50% of the respondents have specified that there is only one child in their family which is followed by 31% of the respondents with 2 children in their families. 48% of the respondents happen to be the first child in the family which really adds up more responsibility to their families as compared to 32% of the respondents who happen to be the last child in their families. 51% of the respondent's father has been running business and it would be a lot easier for those engineering students to become an entrepreneur. 54% of the respondents family income lies between the income range of 50k to 75k which is followed by 22% of the respondents whose family income is above Rs.75,000. 77% of the respondents have attended programmes pertaining to entrepreneurship in their engineering institutions.

Table-1: Gender of the Student

Gender	Frequency	Percentage
Male	279	72
Female	106	31

Table-2: Interest towards Entrepreneurship

Interest	Frequency	Percentage
Yes	312	81
No	73	19

Table-3: Number of Children in the family

Children	Frequency	Percentage
1	192	50
2	120	31
≥ 3	73	19

Table-4: Order of Birth in the family

Birth Order	Frequency	Percentage
First Child	185	48
Last Child	125	32
Middle Order	75	19

Table-5: Occupation of the father

Father's Occupation	Frequency	Percentage
Business	196	51
Govt. Employee	67	17
Private Employee	122	32

Table-6: Income of the family

Family Income	Frequency	Percentage
Below – 25000	22	6
25001 – 50000	74	19
50001 – 75000	206	54
Above 75000	83	22

Table-7: Attended Entrepreneurship Development Programme (EDP)

EDP Attended	Frequency	Percentage
Yes	298	77
No	87	23

The first hypothesis (H01) has been analyzed by using the method of Analysis of Variance (ANOVA) by testing its dimensions of entrepreneurial traits by using the F-value, The Analysis of Variance is considered to be the test of multiple means with regard to the statements specified in the questionnaire. As per the information specified in Table-8, the p-values of the dimensions of entrepreneurial traits are less than 0.05 and the null hypothesis is rejected and hence it can be specified that there is a significant difference between the mean scores of the dimensions of entrepreneurial traits such as Human Resource Managing Ability, Effective Communication, Inner Confidence, Capability to handle situations, Decision making Ability, Setting goals, Taking Initiative, Crisis management and risk taking ability and technology

enabled education in the engineering field.

Table-8: ANOVA for the dimensions of Entrepreneurial traits

Entrepreneurial Traits	F value	P value
Human Resource Managing Ability	24.242	0.009
Effective Communication	21.526	0.010
Inner Confidence	18.245	0.005
Capability to handle situations	19.529	0.014
Decision making Ability	23.145	0.015
Setting goals	19.589	0.001
Taking Initiative	23.475	0.005
Crisis management and risk taking ability	24.528	0.006
Technology enabled education	21.158	0.009

The second hypothesis (H02) has been analyzed by using Karl-persons correlation method between the dimensions of entrepreneurial traits and Gender, Occupation of the student's father and Income of the family. Table-9 shows the correlation values together with the p-values for the dimensions of entrepreneurial traits. The p-values of the correlation analysis are less than 0.05 and hence the null hypothesis is rejected and it can be inferred that the entrepreneurial traits are significantly correlated with the demographic factors such as gender, father's occupation and family income.

Table-9: Correlation values of entrepreneurial traits

Entrepreneurial Traits	Gender	Father's Occupation	Family Income
Human Resource Managing Ability	0.821 (0.002)	0.911 (0.013)	0.817 (0.011)
Effective Communication	0.875 (0.003)	0.925 (0.018)	0.892 (0.028)

Inner Confidence	0.891 (0.000)	0.985 (0.016)	0.857 (0.023)
Capability to handle situations	0.912 (0.000)	0.814 (0.022)	0.826 (0.018)
Decision making Ability	0.873 (0.004)	0.872 (0.025)	0.824 (0.002)
Setting goals	0.856 (0.005)	0.845 (0.021)	0.823 (0.007)
Taking Initiative	0.895 (0.007)	0.826 (0.002)	0.899 (0.014)
Crisis management and risk taking ability	0.928 (0.008)	0.825 (0.019)	0.910 (0.018)

* Values in brackets represent p-values

VII. CONCLUSION

The entrepreneurial skills are considered to be one of the vital skills that every student should possess and in-particular every engineering student should possess. The most important thing that an entrepreneur should possess would be the entrepreneurial traits. The skill sets of the engineering students can be honed by involving technology based engineering education so that an awareness about the importance of entrepreneurship can be inculcated in the minds of the young learners. When suitable training is given to the engineering students then it will enable them to perform as entrepreneur in the effective and efficient manner. The study confirms that the dimensions of entrepreneurial skills are imbibed into the minds of the young engineering graduates making them as successful entrepreneurs. The entrepreneurial skills are directly proportional to the demographic factors such as gender of the engineering student, the father's occupation of the family income. Even if the young entrepreneurs possess the required entrepreneurial skills, the family background of the students are really important to make them as successful entrepreneurs. The engineering students can expand their knowledge and skill sets by getting trained

through the institutions continuously. Moreover every engineering institution should bring out the talents of the students by encouraging the students through start-up ventures, incubation and entrepreneurial hubs.

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