

A STUDY ON THE IMPACT ON ATTITUDINAL FACTORS TOWARDS ENTREPRENEURIAL INTENTION AMONG ENGINEERING STUDENTS

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Abstract

The present study on the impact on attitudinal factors towards entrepreneurial intention among engineering students in Coimbatore. The sample size for this research is 400 respondents. The sampling technique adopted for the study is convenient sampling. The study found that there is a no significant relationship between the gender and the personality traits whereas significant relationship exists between age of the respondents and curiosity of students. From the t-test, it is noted that there is significant difference between male and female with respect to personality of traits and locus of control. Thus, the study found that personality traits of students and locus of control was found to be strongest construct which influence entrepreneurial intention among engineering students.

Keywords: Convenient sampling, personality traits, curiosity, locus of control, entrepreneurial intention.

INTRODUCTION

Throughout the world, entrepreneurship is a phenomenon fueling economic growth, driven by the emergence of new and innovative businesses. Entrepreneurs are responsible for developing this new and innovative business idea. They have developed a wide range of skills, attitudes and behavior that enable them to perform their roles in the society in addition to developing new ventures and business plans (Inegbenobor, 2006). Therefore, job creation is fostered by startups that turn the attention of politicians towards them and lead to positive contribution to the economy. Hence, entrepreneurship plays a crucial role in the development of an economy (McStay, 2008).

It is generally acknowledged that engineers need entrepreneurial skills in order to comprehend the market and contribute to it. In recent decades, universities have begun to incorporate entrepreneurship more and more into their engineering curriculum. Engineering students from all disciplines benefit from entrepreneurship education because it equips them with the skills, knowledge, and mindset needed to spot opportunities and seize them. It gives engineering students solid training in prototyping, market research, technology trends, and product design and development. It has been explored how to manage innovation and integrate technology, market, and organisational change. Moreover, design for manufacture and

assembly, concurrent engineering principles, and education on engineering entrepreneurship have all been covered. In this regard, senior capstone design courses have been the primary focus of the integration of entrepreneurship into the necessary engineering curriculum.

The current economic crisis, coupled with the high unemployment rate, has resulted in the labor market requiring more multidisciplinary engineers with additional skills. It is therefore essential for engineering education to address new challenges, including the development of enhanced entrepreneurial skills among engineers.

Review of Literature

The Global Entrepreneurship Monitor (GEM) study, highlights the significance that entrepreneurship has attained by showing how it has evolved into a crucial tool for wealth creation and the creation of jobs in the current environment (Acs et al., 2005; Gómez-Grass et al., 2010; Nabi et al., 2010; Oosterbeek et al., 2010). In this regard, Thurik, Carree, Van Stel, and Audretsch (2008) confirmed the strong link between self-employment and the decline in unemployment rates generally.

Law and Breznik (2017) examined a sample of 998 university students in Hongkong and discovered that creativity was the driving force behind entrepreneurial goals in male students while attitude was the motivating factor in female students. Self-efficacy and attitude were substantially connected with engineering students' innovativeness.

Potishuk and Kratzer's (2017) study of 84 summer school students from European institutions, the educational environment has an impact on students' entrepreneurial attitudes and intents. A pro-entrepreneurship attitude is positively influenced by topics relating to opinion leaders. It was determined that the entrepreneurial mindset, arbitrary standards, and behaviour control fuel entrepreneurial goals.

Herman (2019) examined the factors influencing the entrepreneurial intentions of 138 Romanian engineering students and discovered that the entrepreneurial mentality and family history of the student have a good impact on intentions. Additional education in entrepreneurship has no influence on intentions.

Sanchez and Sahuquillo (2018) found that entrepreneurship education had a beneficial impact on the entrepreneurial intent of 423 students at Spanish engineering universities. Also, it was discovered that the primary element driving intent was the demand for staying independent.

Research Methodology

The primary objective of this study is to find the impact on attitudinal factors towards entrepreneurial intention among engineering students in Coimbatore. The research design undertaken in this study is descriptive in nature, since it provides a description of the state of affairs. The sample size for this research is 400 respondents. The sampling technique adopted for the study is convenient sampling. A convenient sample is a type of non-probability sampling method where the sample is taken from a group of people easy to contact or to teach. The tools used in this study are Percentage analysis, Chi -square and t-test. The data is analysed by using reliability test.

Analysis & Interpretation

Reliability Statistics		
Particulars	Cronbach's Alpha	N of Items
Personality Traits	.878	10
Curiosity	.841	9
Locus of Control	.820	12

From the above table, it is found that Cronbach’s alpha coefficient for the overall instrument i.e., Personality traits 0.878; Curiosity 0.841; Locus of control 0.820 which represents that the reliability coefficient value for all three variables are at the acceptance level. Therefore, it can be continued that the accepted value for the threshold reliability test is 0.6 and these results goes with the threshold value.

Simple Percentage Analysis

Simple percentage is a statistical analysis which is used to compare the distributions of two or more data with relative terms. This tool is calculated using the below mentioned formula

$$\text{Simple Percentage Analysis} = \frac{\text{Number of respondents}}{\text{Total number of respondents}} \times 100$$

Percentage Analysis of Respondents Opinion on Personality Traits, Curiosity and locus of control

		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Personality Traits						
I am constantly on the lookout for new ways to improve my life.	No of respondents	58	108	131	86	17
	Percentage	14.5	27.0	32.8	21.5	4.2
Wherever I have been, I have been a powerful force for constructive change.	No of respondents	41	88	123	111	37
	Percentage	10.2	22.0	30.8	27.8	9.2
Nothing is more exciting than seeing my ideas turn into reality	No of respondents	39	106	125	97	33
	Percentage	9.7	26.5	31.3	24.3	8.2

	Percentage	9.8	26.5	31.2	24.2	8.2
If I see something I don't like, I fix it.	No of respondents	47	117	134	77	25
	Percentage	11.8	29.2	33.5	19.2	6.2
No matter what the odds, if I believe in something I will make it happen.	No of respondents	45	113	165	53	24
	Percentage	11.2	28.2	41.2	13.2	6.0
I love being a champion for my ideas, even against others' opposition	No of respondents	68	174	98	57	3
	Percentage	17.0	43.5	24.5	14.2	0.8
I excel at identifying opportunities.	No of respondents	65	185	90	46	14
	Percentage	16.2	46.2	22.5	11.5	3.5
I am always looking for better ways to do things.	No of respondents	34	156	151	50	9
	Percentage	8.5	39.0	37.8	12.5	2.2
If I believe in an idea, no obstacle will prevent me from making it happen.	No of respondents	41	141	147	63	8
	Percentage	10.2	35.2	36.8	15.8	2.0
I can spot a good opportunity long before others can.	No of respondents	54	176	136	19	15
	Percentage	13.5	44.0	34.0	4.8	3.8
Curiosity						
I explore new things that could create additional profit	No of respondents	35	150	153	54	8
	Percentage	8.8	37.5	38.2	13.5	2.0
I am interested in other entrepreneur's interests	No of respondents	41	134	149	67	9
	Percentage	10.2	33.5	37.2	16.8	2.2
In entrepreneurial work, I am mostly interested in competition	No of respondents	51	176	132	23	18
	Percentage	12.8	44.0	33.0	5.8	4.5

In my business, I must have information about marketing that is as complete as possible	No of respondents	28	160	178	28	6
	Percentage	7.0	40.0	44.5	7.0	1.5
I am very interested in knowing the needs I can meet in society.	No of respondents	70	185	113	14	18
	Percentage	17.5	46.2	28.2	3.5	4.5
I simply must know how a certain business system works	No of respondents	49	167	151	30	3
	Percentage	12.2	41.8	37.8	7.5	0.8
I am able to create added value from my observations of the environment	No of respondents	68	168	126	19	19
	Percentage	17.0	42.0	31.5	4.8	4.8
I continuously delve into entrepreneurship matters.	No of respondents	91	179	120	8	2
	Percentage	22.8	44.8	30.0	2.0	0.5
I spend most of my time thinking about company improvements.	No of respondents	61	203	118	16	2
	Percentage	15.2	50.8	29.5	4.0	0.5
Locus of Control						
I usually get what I want in life	No of respondents	40	171	131	37	21
	Percentage	10.0	42.8	32.8	9.2	5.2
I need to be kept informed about news events	No of respondents	57	153	150	37	3
	Percentage	14.2	38.2	37.5	9.2	0.8
I never know where I stand with other people	No of respondents	63	171	125	37	4
	Percentage	15.8	42.8	31.2	9.2	1.0
I do not really believe in luck or chance	No of respondents	64	187	117	27	5
	Percentage	16.0	46.8	29.2	6.8	1.2
	No of respondents	65	177	117	21	20

I think that I could easily win a lottery	Percentage	16.2	44.2	29.2	5.2	5.0
If I do not succeed on a task, I tend to give up	No of respondents	55	153	130	59	3
	Percentage	13.8	38.2	32.5	14.8	0.8
I usually convince others to do things my way	No of respondents	65	150	126	50	9
	Percentage	16.2	37.5	31.5	12.5	2.2
People make a difference in controlling crime	No of respondents	77	180	113	28	2
	Percentage	19.2	45.0	28.2	7.0	0.5
The success I have is largely a matter of chance	No of respondents	91	168	125	14	2
	Percentage	22.8	42.0	31.2	3.5	0.5
Marriage is largely a gamble for most people	No of respondents	56	113	130	86	15
	Percentage	14.0	28.2	32.5	21.5	3.8
People must be the master of their own fate	No of respondents	40	88	127	108	37
	Percentage	10.0	22.0	31.8	27.0	9.2
It is not important for me to vote	No of respondents	38	110	128	94	30
	Percentage	9.5	27.5	32.0	23.5	7.5

Chi- Square Test

$$\text{Chi- Square test} = \sum \frac{(O_{ij} - E_{ij})^2}{E_{ij}}$$

E_{ij}

Where,

O_{ij} = Observed value

E_{ij} = Expected value

RELATIONSHIP BETWEEN EDUCATIONAL QUALIFICATION AND PERSONALITY TRAITS

H_0 = There is no significant relationship between the gender and the personality traits.

O_{ij}	E_{ij}	O_{ij} - E_{ij}	(O_{ij} - E_{ij})²	$\frac{(O_{ij} - E_{ij})^2}{E_{ij}}$
22	22.77	- 0.77	0.5929	0.026
56	55.22	0.78	0.6084	0.011
4	4.083	-0.088	0.0064	0.001
10	9.911	0.089	0.0079	0.0007
5	4.088	0.912	0.8317	0.203
9	9.911	-0.911	0.8299	0.083
2	2.044	-0.044	0.0019	0.0009
5	4.955	0.045	0.0020	0.0004
TOTAL				0.326

Degree of Freedom:

$$\begin{aligned}
 &= (\text{Column} - 1) (\text{Row} - 1) \\
 &= (2 - 1) (4 - 1) \\
 &= 1 \times 3 \\
 &= 3
 \end{aligned}$$

Level of significance	Degree of freedom	Calculated Value	Table value	Result
0.05	3	0.326	7.815	No Significant

The calculated value (0.326) is lesser than the table value (7.815). So the null hypothesis is accepted and the alternative hypothesis is rejected. Thus there is a no significant relationship between the gender and the personality traits.

RELATIONSHIP BETWEEN AGE OF THE RESPONDENTS AND CURIOSITY

H₀ = There is no significant relationship between age of the respondents and curiosity of students.

O _{ij}	E _{ij}	O _{ij} - E _{ij}	(O _{ij} - E _{ij}) ²	$\frac{(O_{ij} - E_{ij})^2}{E_{ij}}$
4	0.29	3.71	13.76	47.44
7	0.31	6.69	44.75	144.35
3	0.7	2.3	5.29	7.557
40	1.89	38.11	1452.37	768.44
36	2.02	33.98	1154.64	571.60
15	4.55	10.45	109.20	24

2	0.083	1.917	3.67	44.216
0	0.088	-0.088	0.007	0.079
2	0.2	1.8	3.24	16.2
2	0.083	1.917	3.67	44.21
2	0.088	1.912	3.65	41.47
0	0.2	-0.2	0.04	0.2
TOTAL				1709.762

DEGREE OF FREEDOM:

$$\begin{aligned}
 &= (\text{Column} - 1) (\text{Row} - 1) \\
 &= (3-1) (4-1) \\
 &= (2) (3) \\
 &= 6
 \end{aligned}$$

Level of significance	Degree of Freedom	Calculated Value	Table Value	Result
0.05	6	1709.762	12.592	significant

The calculated value (1709.762) is greater than the table value (12.592). So alternate hypothesis is accepted and null hypothesis is rejected. Thus, there is significant relationship between age of the respondents and curiosity of students.

t – TEST TABLE for Personality traits, curiosity and locus of control with Gender of the respondents

t – Test						
	Gender	N	Mean	Std. Deviation	F	Sig.
Personality Traits	Female	253	1.2125	.41166	1.206	.000*
	Male	147	1.4217	.49683		
Curiosity	Female	212	1.3375	.47584	1.591	.209**
	Male	188	1.3855	.48968		
Locus of Control	Female	262	1.2150	.48521	1.852	.000*
	Male	138	1.3210	.40123		

NOTE: * Indicates 1% Level of significant

** Indicates 5% Level of significant

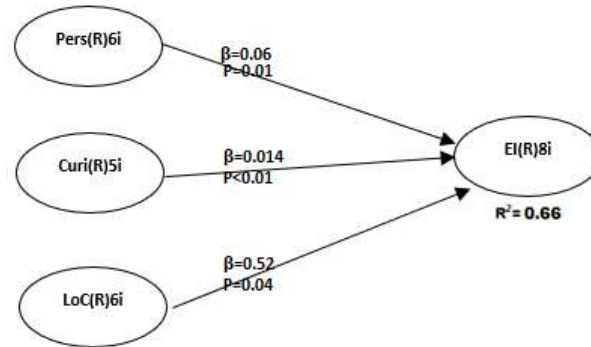
The above table shows that p value is less than 0.01, the null hypothesis is rejected at 1 percent level of significance with respect to Curiosity. Hence it is exposed that there is no significant difference between male and female with respect to Curiosity.

With respect to personality of traits, the null hypothesis is accepted since the p value is greater than 0.05 level of significance. Hence, it is concluded that there is significant difference between male and female with respect to personality of traits.

With respect to Locus of control, the null hypothesis is accepted since the p value is greater than 0.05 level of significance. Hence, it is concluded that there is significant difference between male and female with respect to Locus of control.

Structural Model – Personality traits, Curiosity and Locus of Control on Entrepreneurial Intention

Path	Beta Coefficient	P value	T Value	Results
PERS→EI	0.06	0.01*	2.14	Positive Significant
CURI→EI	0.014	<0.01*	1.21	Positive Significant
LOC→EI	0.52	0.04**	2.31	Positive Significant



From the above Table it is inferred that significant positive relationship exists between the paths Personality Traits ($\beta=0.06$; $t=1.21$; $p<0.01$); Curiosity and Personality Traits ($\beta=0.014$; $t=2.31$; $p<0.04$); Locus of control and Personality Traits ($\beta=0.52$; $t=2.10$; $p=0.04$).

The adjusted R^2 value of 0.66 for Entrepreneurial Intention indicates that 66% variability in Entrepreneurial intention among engineering students is explained by the Personality Traits, Curiosity and Locus of Control.

Personality Traits, Curiosity and Locus of Control has positive influence on Entrepreneurial Intention among engineering students. Hence it is concluded that alternate hypothesis is accepted with respect to Entrepreneurial intention among engineering students mediates the relationship between Personality traits, Curiosity and Locus of Control.

Conclusion

Entrepreneurs are responsible for developing this new and innovative business idea. They have developed a wide range of skills, attitudes and behavior that enable them to perform their roles in the society in addition to developing new ventures and business plans (Inegbenobor, 2006). The sample size for this research is 400 respondents. The sampling technique adopted for the study is convenient sampling. The study found that there is a no significant relationship between the gender and the personality traits whereas significant relationship exist between age of the respondents and curiosity of students. From the t-test, it is noted that there is significant difference between male and female with respect to personality of traits and locus of control. The adjusted R^2 value of 0.66 for Entrepreneurial Intention indicates that 66% variability in Entrepreneurial intention among engineering students is explained by the Personality Traits, Curiosity and Locus of Control. It is concluded that alternate hypothesis is accepted with respect to Entrepreneurial intention among engineering students mediates the relationship between Personality traits, Curiosity and Locus of Control.

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