

The Role of Modern Entrepreneurial Activities towards Higher Education Students Innovation

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ABSTRACT:

One of the hotspots of higher education research and practice in India in recent years has been innovation and entrepreneurship education. One new approach is to teach innovation and entrepreneurship. Students' entrepreneurial potential is increased via entrepreneurial education, which encourages them to pursue entrepreneurial careers. However, in India, most young people with unrealized business potential leave college without the necessary fundamental knowledge. The economy is suffering from an inconsistent approach to entrepreneurship development policies. Therefore, this study intends to assess how entrepreneurial activities affect the innovation of students pursuing higher education. The research utilizes quantitative research methods and collects data from students (n= 367) of higher education institutions in the state of Punjab. To find the desired outcome statistical analysis was performed. The results revealed that entrepreneurial knowledge, entrepreneurial awareness, and formalized teaching strategies significantly impact the higher education student's innovative process. The results also suggest that universities and colleges must continue to make the most of formal policy advantages to support entrepreneurship and innovation, increase educational spending, help college students develop they run their respective businesses, and pinpoint the issues that college students have with finding work.

Keywords: Entrepreneurship Education; Higher Education Students; Students Innovation; Entrepreneurship Activity; Teaching Strategy

INTRODUCTION

Innovative skills are fostered via entrepreneurship education and are a significant factor for future growth. New requirements are currently placed on entrepreneurial education by innovation-driven development initiatives Hameed, and Irfan, (2019). By merging various knowledge and value systems, entrepreneurial activity helps entrepreneurs gather resources, develop their inventive personalities and abilities, and build multi-level training channels for entrepreneurs. In contrast to informal training and skill development, entrepreneurial education also includes the development of general ability and professional ability Li, and Wu, (2019); Martin, McNally, and Kay, (2013). Beyond having technical, economic, and legal competence, being able to see possibilities and generate the necessary resources and funds is essential for success Aboobaker, and Renjini, (2020). Strong political acumen among student entrepreneurs allows them to effectively combine available resources, identify and

understand social cues from their environment, and finally position themselves as significant figures in technology and product creation.

Programs in academic communication, entrepreneurship, and innovation are just a few of the various ways that innovation activities take place in higher education. These activities vary in regularity, quality, range, and depth, and the effects of innovative and entrepreneurial education on students might likewise differ Tantawy, et al., (2021); Norris et al., (2000). Students who have obtained entrepreneurial education typically land positions that are initially more fulfilling in terms of pay and position are promoted more rapidly, and work in environments that are better Zhang, Duysters, and Cloodt, (2014); Karimi et al., (2016). Students tend to make better decisions when presented with crucial decisions when entrepreneurship education and innovation are made universal and required in higher education Karimi et al., (2016). It also has a strong favorable influence on students' entrepreneurial ambitions and opportunity identification. According to research, entrepreneurship training and support directly affect entrepreneurial outcomes and improve societal sustainability. Non-university students, on the other hand, are less likely to obtain entrepreneurial training and support Rashid, (2019).

Regarding the link between innovativeness in universities and students' innovation and entrepreneurship, researchers have come to a variety of diverse findings. The degree to which entrepreneurialism in higher education affects students' motivation to launch a firm varies dramatically between scientific and arts degrees, with science students experiencing a negative influence because of things like low emotional intelligence Maresch et al., (2016).

Due to the set template theory found in certain entrepreneurship education, which might restrict students' capacity for invention, the experience of getting entrepreneurial education and innovation has a detrimental influence on creativity (Tang, and Hull, 2012; Piperopoulos, and Dimov, 2015). Additionally, there is a definite variation in how gender affects innovativeness. According to data from the Entrepreneurial Research Centre (Pruett, 2012), the study discovered that men and women had dramatically different tendencies to establish a business, with males being significantly more likely to accomplish this than women and having a greater success rate in doing so. Men and women play distinctive functions in the entrepreneurial procedure as a result; thus it will be important to research the use of various focused educational strategies and innovative entrepreneurial endeavors.

Entrepreneurship education, which focuses on enhancing entrepreneurial professional competence, may help entrepreneurs develop their abilities and act as a new incubator of inventive talents (Hamidi et al., 2008; Souitaris, Zerbinati, and Al-Laham, 2007). The conceptual framework may be used to comprehend how contextual factors affect a person's awareness of innovation, capacity for innovation, and inventive personality. Higher education institutions plan and carry out a variety of teaching practice activities; entrepreneurial education enhances students' professional competencies through socio-cognitive networks (Carey, and Matlay, 2010; Smith, Collins, and Hannon, 2006). Student entrepreneurs are

regarded as executives because of their education and entrepreneurial activities. Their great political skills, including their strong interpersonal connections and wide-ranging social networks, might increase their ability to see possibilities (Smith, Collins, and Hannon, 2006.) Young student entrepreneurs are therefore more likely to be integral parts of entrepreneurial teams, enhancing the perception of entrepreneurial innovation. In this study, we will find out how entrepreneurial development strategies affect higher education students' ability to innovate.

LITERATURE REVIEW

Entrepreneurship is a prominent research topic because of the significant impact it has on societies in terms of development, creativity, job creation, and the alleviation of poverty. This section examines the body of literature that has been written about entrepreneurial education, student creativity, entrepreneurial skills, and other related topics.

2.1 Related Works

Hahn et al., (2020) investigated the impact of entrepreneurship education on university students' entrepreneurial skills. On a population of 427 undergraduate students who took part in two successive rounds of the Global Higher Education Entrepreneurship Spirit Students' Survey, they conducted a quasi-experimental study. According to the study, both forms of entrepreneurship education help students develop their entrepreneurial abilities; however, the effectiveness of entrepreneurial education in required courses depends on how students judge their parents' success as business owners.

Cui *et al.*, (2021) examined the Impact of Entrepreneurship Education on the Entrepreneurial Mindset of College Students in China. They gathered information from Chinese higher education institutes and ran a structural equation model on it. The results showed that the relationship between entrepreneurial education and entrepreneurial attitude is complicated and was based on 1428 reliable samples from Chinese students enrolled in higher education. The establishment of students' entrepreneurial attitudes was aided by entrepreneurial education, which considerably increased students' entrepreneurial motivation. Substantially, entrepreneurial inspiration also moderated the effect of entrepreneurial education on an innovative mindset.

Shah *et al.*, (2020) investigated the role of entrepreneurship education in students' entrepreneurial intentions. Additionally, they looked at how entrepreneurial education affected the subjective norms, and personality for entrepreneurial intents. From the treatment group and control subjects at various universities of higher education, they gathered the necessary data. They tested their hypothesis using structural equation modeling. The findings showed that the most important determinants of entrepreneurial intent are self-efficacy and attitude toward entrepreneurship. The factor loadings of attitude toward and self-efficacy, on the other hand, are strengthened by entrepreneurship education.

Hssan *et al.*, (2020) investigate the impact of opportunity recognition and entrepreneurial self-efficacy on the entrepreneurial intention of Indian university students. Through a questionnaire given to 334 students with business and management backgrounds, they gathered the necessary data. They used structural equation modeling to evaluate the putative hypotheses and confirmation factor analysis to validate the validity and reliability of all the components. The findings showed that self-efficacy and proactive personality both have a significant positive influence on students' entrepreneurial intentions, education positively modifies the link between personality and intention, and identity adversely modifies the interaction between opportunity identification and intention.

Wardana *et al.*, (2020) investigate the relationship between students' entrepreneurship education and entrepreneurial mindset as well as understanding the mediating role of attitude and self-efficacy. Their study adopted a convenience random sampling method. They conducted an online survey while recruiting participants from several institutions in Indonesia. The results were derived using structural modeling. According to the results of their study, entrepreneurs' education impacts the individuals' self-efficacy, disposition, and mentality. Instead of encouraging the entrepreneurial mindset, the career decision-making self does the opposite. Additionally, an entrepreneurial attitude is crucial in modulating the effects of self-efficacy and entrepreneurial education on students' creative potential.

Shekhar, and Huang-Saad, (2021) demonstrated the importance of entrepreneurship education programs in the professional development of engineering students. To identify the critical variables that influence students' engagement in entrepreneurship education programs, the researcher performed 20 semi-structured conversations with students in undergraduate engineering using the first and intermediate-cycle coding methodologies. Several factors, including self-efficacy, commitment, attitude, facilitating conditions, goals, academic transformation, data and resources, socialization, potential challenges, and prior involvement in entrepreneurship courses, were found to influence students' decisions to take part in entrepreneurship development.

Hua, Zheng, and Fan, (2022) examined the impact of entrepreneurial activities and college students' entrepreneurial abilities in higher education. They conducted a quantitative analysis of 34 distinct studies on the relationship between college students' entrepreneurial skills and university entrepreneurial activity using both local and foreign literature. The findings of their meta-regression analysis of the data they collected showed a substantial positive association between entrepreneurial activity in universities and the entrepreneurial aptitude of university students. The findings also demonstrated there is a link between institutional entrepreneurship development and college students' entrepreneurial activities.

Zhao, Li, and Chen, (2022) analyzed the effect of the entrepreneurial atmosphere on the relationship between entrepreneurial consciousness, entrepreneurial motivation, and innovation and entrepreneurship ability. They created a model of structural equations for empirical research using the programs SPSS22 and AMOS22 based on the information from

1944 surveys. The findings demonstrated the validity and reliability of the innovation and entrepreneurial ability scale. Innovation and entrepreneurship abilities were significantly benefited by entrepreneur consciousness, motivation, and cognition.

2.2 Research Gap

The goal of reforming India's higher education system is to further the study of entrepreneurship and innovation in both colleges and universities. University students' entrepreneurial and innovative behaviors as well as the development of their aptitude for innovation and business are essential components of university innovation and entrepreneurship. College students have a lot of room to start a business thanks to the creativity and entrepreneurialism of the university sector, and they may also actively contribute to the growth of the innovation-driven economy. Recent years have seen a promotion and in-depth practice exploration of studies on creativity and entrepreneurial skills. The influencing variables of creativity and entrepreneurial skill have been the subject of much investigation by academics. This study examines the effects on students' creativity and entrepreneurship by combining the pertinent literature and summarizing the five characteristics of entrepreneurial knowledge and awareness, students' perspectives, structured teaching methodologies, and entrepreneurial development programs.

ANALYZING THE ROLE OF MODERN ENTREPRENEURIAL ACTIVITIES TOWARDS HIGHER EDUCATION STUDENTS' INNOVATION

3.1 Research Problem Statement

The process of entrepreneurship involves looking for business opportunities, taking measured risks, and then launching a new firm. Entrepreneurship has been seen as a catalyst for economic growth and innovation throughout the previous ten years in both the commercial as well as non-profit sectors, as well as small and large enterprises. To foster creative thinking and entrepreneurial abilities among higher education students; entrepreneurial activity tries to convey imparting entrepreneurial information, abilities, and experiences to students via entrepreneurship training programs, business contests, and other activities. Higher education's emphasis on entrepreneurship encourages students to acquire a wide range of skills, including the capacity to see possibilities, the capacity for innovation, and psychological fortitude. In the age of quickening scientific and technical development, modern entrepreneurial activity may build more innovative entrepreneurs, support the growth of more businesses, keep up with contemporary trends, and advance economic development. Therefore, our study helps to explore how perceived entrepreneurial education influences higher education students' innovation.

3.2 Research Objective

Some of the research objectives framed as per the existing literature works were listed below:

1. To understand the role of modern entrepreneurial activities in the higher education students' innovation process.
2. To identify integrative and cutting-edge entrepreneurship education strategies and methods, including training that exposes students' business ideas
3. To examine the impact of entrepreneurial development programs among young student entrepreneurs.

3.3. Research questions

Based on the proposed research objectives the following research questions were derived;

RQ1: Does Entrepreneurial knowledge and awareness higher educational students' innovation?

RQ2: Is there any relationship that exists between students' perceptions of entrepreneurship education and students' innovation?

RQ3: Do formalize teaching strategies and entrepreneurial development programs can effectively develop students' entrepreneurial activities?

3.4 Research Hypothesis

Based on existing literature works, objectives proposed, and questions derives the following research hypothesis was formulated. Figure 1 shows the framework of the proposed research hypothesis.

H₁: Entrepreneurial knowledge positively impacts the students' innovation process

H₂: Entrepreneurial awareness positively impacts the students' innovation process

H₃: There will be a positive relationship between students' perceptions of entrepreneurship education and students' innovation.

H₄: Formalized teaching strategies impact the students' innovation process.

H₅: Entrepreneurial development programs can effectively develop students' entrepreneurial activities

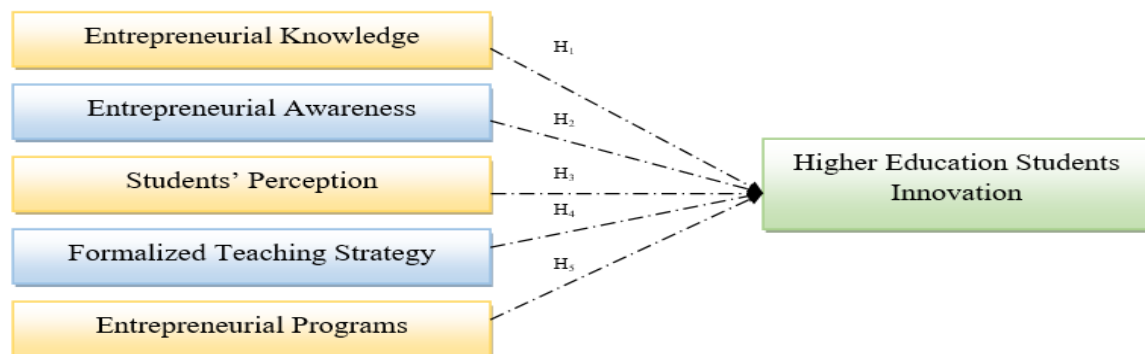


Figure 1: Proposed Research Hypothesis Framework

3.5 Research Approach

This research work used a survey approach to test the above hypotheses. Details of the survey, including the data collection and measurement of variables, are provided below.

3.5.1 Data collection and sample

A quantitative research method is performed and data is collected employing a questionnaire. The two research variables, students' innovation, and entrepreneurial activities in higher education are validated experimentally. The purpose of our study is to evaluate the entrepreneurial skills of MBA and final-year engineering graduates. From eight management and ten engineering colleges spread across the state of Punjab, a selection of 350 business undergraduates and 269 engineering graduates in their final year were chosen. Only 367 of the chosen pupils answered the questionnaires. The survey was carried out throughout the 2021–2022 scholastic year. Multi-stage sampling was used to identify the sample colleges.

To get the necessary accurate information, a systematic questionnaire with a five-point Likert scale measuring all questions from "1 = strongly agree" to "5 = strongly disagree" was created to gather data. In keeping with past research, we conducted the final questionnaire in English. By gathering quantitative data for social science studies, the survey research approach is useful for analyzing opinions and trends. As a result, the survey is an appropriate data-gathering approach for the current research based on previous research findings. 619 questionnaires were given out in this study, and 367 were returned.

3.5.2 Research design

SPSS 26 was used for performing frequency analysis, validity analysis, f-test analysis, and correlation analysis. Frequency analysis is performed to find the demographic characteristics of the respondents and to find the percentage of respondents who responded to the questions. Validity analysis is performed to find how valid the data are to perform the analysis. F-test analysis is used to test the hypothesis and correlation analysis is performed to find the relationship between the variables. In addition, SEM analysis is performed to find the model's fitness.

RESULTS AND DISCUSSIONS

IBM SPSS 26 was used to perform statistical analysis for this research paper. Basic descriptive analysis was performed to obtain scores for the prepared questions and descriptive statistics (minimum, maximum, mean, and standard deviation) were calculated. SEM is a multivariate approach that uses a regression equation and conceptual model. The SEM is a thorough statistical technique for evaluating hypotheses on the correlation between actual and prospective variables. The SEM analyses a theoretical model's measurement and structure by combining the traits of multiple regression and component analysis. The internal consistency and outer model are the different pairs of linear equations that formally define the SEM. The outer model defines the link between the possible variables and their related observed or exhibit variables, whereas the internal consistency describes the connection between two undeclared or potential variables.

4.1 Examination of the demographic information

From the data collected from both the male and the female, it was found that 58.6% of responders were male, while the remaining 41.4% were female, according to the research. Additionally, roughly 25.1% of individuals were under the age of 20, 17.7% were between the ages of 20 and 25, 40.3% were between the ages of 26 and 30 years old, and 16.9% were 30 years of age or older. By examining the applicants' educational backgrounds, we discovered that 18.8% of respondents had PhDs, 13.2% had other degrees, 34.1% had undergraduate degrees, 33.2% had graduate degrees, and 34.1% had postgraduate degrees. There is a reference to the examination of the respondent's demographic profile in table 1.

Table 1: Examination of the Demographic Information

		Frequency	Valid Percent
Gender of respondents	Male	215	58.6
	Female	152	41.4
	Total	367	100.0
Age	Below 20yrs	92	25.1
	20-25yrs	65	17.7
	26-30yrs	148	40.3
	Above 30yrs	62	16.9
	Total	367	100.0
Educational level	UG	125	34.1
	PG	122	33.2
	PhD	69	18.8
	others	51	13.9
	Total	367	100.0

4.2 Test for Reliability and Validity Check

The reliability of the questionnaire was assessed using Cronbach's alpha value. Cronbach's alpha has a range of 0 to 1. Cronbach's alpha is normally regarded as satisfactory when it exceeds 0.7. The test items have a substantial relationship when the level of alpha is high. Table 2 shows that the information utilized in this study has a dependability value better than 0.725. Therefore, the information offered is correct and acceptable.

Table 2: Test for Reliability Check

Cronbach's Alpha	No of Items
.725	36

The validity of convergence is frequently evaluated using the extracted average variance (AVE). This is described as "the difference in average among a structure and its measurements". The constant AVE cut-off value is 0.5. The AVE results for the study are lower as mentioned in table 3, but the model is in an acceptable range.

Table 3: AVE construct analysis

Metrics	AVE
Students' innovation	0.3505
Entrepreneurial knowledge	0.3371
Entrepreneurial Awareness	0.1992
Entrepreneurial education	0.2988
Formalized teaching strategies	0.2561
Entrepreneurial programs	0.2218

Discriminant validity research assesses the unavailability of a correlation between the formation of parameters underlying impulse and the formation of other measurements whose development is unconnected to it conceptually. The HTMT is used to assess a construct's dependability for this objective. For discriminant validity to be deemed confirmed, the HTMT must be lower than one. Table 4 shows the HTMT analysis correlations.

Table 4: HTMT- Discriminant Analysis

Student innovation-SI, Entrepreneurial programs-EP, Formalized teaching strategies-FTS, Entrepreneurial Awareness-EA, Entrepreneurial education-EE, Entrepreneurial knowledge-EK						
	SI	EK	EA	EE	FTS	EP
SI	0	0	0	0	0	0
EK	0.6846	0	0	0	0	0
EA	1.2606	1.4508	0	0	0	0
EE	0.3533	0.7024	0.5952	0	0	0
FTS	0.2601	0.2778	0.539	0.3462	0	0

EP	0.716	1.2509	1.0392	0.7209	0.2202	0
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4.3 Descriptive Analysis

Table 5 shows the descriptive analysis of each variable utilizing minimum, mean, maximum, and standard deviation measures. The entrepreneurial activities (entrepreneurial knowledge, entrepreneurial awareness, entrepreneurship education, formalized teaching, and entrepreneurial development program) mean score is in the range between (2.4354-2.2300) and a standard deviation (0.60684-0.49970) that suggests a successful deployment of entrepreneurial activities enhances the higher education students' innovation process. The results also show that each variable has a positive relationship with the others.

Table 5: Descriptive Variable Analysis

	Min	Max	Mean	Std. Dev
Students' innovation	1.20	3.80	2.35	.540
Entrepreneurial knowledge	1.00	4.00	2.43	.606
Entrepreneurial Awareness	1.40	3.80	2.42	.433
Entrepreneurial education	1.20	4.40	2.32	.650
Formalized teaching strategies	1.40	4.40	2.72	.574
Entrepreneurial programs	1.00	3.60	2.23	.499

4.6 Analysis of Model Likelihood

The Structural model employed structural equation modeling (SEM) to evaluate the assumptions using AMOS 24. The suggested model includes mediation; hence all of the routes were concurrently analyzed using the SEM approach. The fit indices of structural models, as displayed in Table 6, satisfy the requirements for approval.

Table 6: Analysis of Model Likelihood

Category of Fit	Index	Values Acceptable	Analysis Value
Parsimonious	Df/ Chi-square	3.310	Less than 5
Absolute	RMSEA	0.076	Less than 0.08
Incremental	CFI	0.992	Greater than or equal to 0.9

4.7 Hypothesis Analysis- F-test

F-test is a statistical technique for testing the hypothesis by comparing the values of the mean for more than highlighting the significant relation or difference among other constructs. Table 7 shows the SS (sum of the squares) between both the variables knowledge of entrepreneurs and students' inventive process is 29.596 and the estimated residual error is 105.183. The f-test considers the F ratio as well as the degree of freedom which is considered as df as $F(1, 17) = 7.640$. The significance threshold for f-tests is thus set at 0.05. When the

value of probability attained is less than the significance, the hypothesis is considered accepted. For the suggested hypothesis (H1), the computed probability (p) is .023, which is less than the calculated probability. As a result, we may conclude that entrepreneurial expertise has a big impact on how inventive higher education students are.

The student's inventive process and entrepreneurial awareness have a SS of 12.389, and 56.280 is the determined residual error. The f-test takes the F ratio into account and df as F (1, 17) = 5.977. The significance threshold for f-tests is thus set at 0.05. In contrast to the stated value, the probability found for the suggested H2 is .006, which is smaller than the value. As a result, research concludes that entrepreneurial consciousness has a big impact on how inventive higher education students are.

The student's inventive process and entrepreneurial education have a SS of 28.482, and the computed Error is 126.512. The f-test considers the F ratio and df as F (1, 17) = 6.113. The significance threshold for f-tests is thus set at 0.05. The p-value for the hypothesis (H3) is 0.106. As a result, we may conclude that entrepreneurial education has a big impact on how inventive higher education students are.

The estimated residual error is 112.188, and the SS between the variables of structured instructional tactics and students' inventive process is 8.663. The f-test considers the F ratio and df as F (1, 17) = 2.097. The significance threshold for f-tests is thus set at 0.05. The p-value for hypothesis (H4) is 0.01. As a result, we may conclude that organized teaching methods have little impact on how inventive higher education students are.

The student's inventive process and the entrepreneurship development program's variables have a square sum (SS) of 24.659, and the estimated residual error is 66.732. The f-test accounts for the F-ratio and df as F (1, 17) = 10.034. The significance threshold for f-tests is thus set at 0.05. The recommended hypothesis (H5) has a probability (p) of .179, which is greater than the present value. As a result, we may conclude that the inventive process of higher education students is not considerably influenced by entrepreneurial development programs.

Table 7: Summary of hypothesis test

ANOVA						
		SS	df	MS	F	Sig.
Entrepreneurial knowledge	Between Groups	29.596	13	2.277	7.640	.023
	Within Groups	105.183	353	.298		
	Total	134.780	366			
Entrepreneurial Awareness	Between Groups	12.389	13	.953	5.977	.006
	Within Groups	56.280	353	.159		
	Total	68.669	366			
Entrepreneurial education	Between Groups	28.482	13	2.191	6.113	.106
	Within Groups	126.512	353	.358		
	Total	154.993	366			

Formalized teaching strategies	Between Groups	8.663	13	.666	2.097	.014
	Within Groups	112.188	353	.318		
	Total	120.851	366			
Entrepreneurial programs	Between Groups	24.659	13	1.897	10.034	.179
	Within Groups	66.732	353	.189		
	Total	91.390	366			

4.5 Regression

The model summary stated in table 8 includes the regression models' correlation coefficient and coefficients (r^2). The association between students enrolled in higher education's entrepreneurial activities and creative processes is highly good. and $r^2 = .141$ indicates that entrepreneurial activities can represent 11% of the variance in students' innovation process. In other ways, the innovative process of higher education students can be significantly predicted by entrepreneurial programs, formalized teaching strategies, entrepreneurial awareness, entrepreneurial education, and entrepreneurial knowledge.

Table 8: Analysis of Model Summary

Model Summary				
Model	R	R ²	Adjusted R ²	Std. Error of the Estimate
1	.375 ^a	.141	.129	.50459
a. Predictors: (Constant), Entrepreneurial programs, Formalized teaching strategies, Entrepreneurial Awareness, Entrepreneurial education, Entrepreneurial knowledge				

Table 9 examines the model's statistical significance to evaluate if it can accurately predict the outcome. Usually, 5% or the 95% probability value is used as the study's significance level. Therefore, the p-value must be less than 0.05. The hypothesis tested has a value of 0.000. The finding is significant as a result. The F-ratio shows how effectively the parameters can be anticipated by the model calibration after allowing for the model's inherent inaccuracy. With a value larger than 1, the F-ratio yield appropriate technique is used. The value of 11.808 in the table shown is in the range of acceptance.

Table 9: Test of ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.032	5	3.006	11.808	.000 ^b
	Residual	91.915	361	.255		
	Total	106.947	366			

The only quantity that matters throughout the interpretation process is the signature value. The outcome must fall below the minimum criterion of relevance for the investigation, which for this research is much less than 0.05 for the 95% probability value. As shown in table 10 all the constructs have significance values that are less than 0.05 (5% Confidence).

Consequently, entrepreneurial activities like entrepreneurial programs, formalized teaching strategies, entrepreneurial awareness, entrepreneurial education, and entrepreneurial knowledge of higher education students' innovative processes are highly related to each other.

Table 10: Coefficients Value

Variables		Unstandardized Coefficients		Standardized Coefficients	t- value	Significance
		B	Std. Error	Beta		
1	(Constant)	1.290	.218		5.904	.000
	Entrepreneurial knowledge	.144	.054	.162	2.674	.008
	Entrepreneurial Awareness	.270	.067	.217	4.032	.000
	Entrepreneurial education	.020	.044	.024	.461	.645
	Formalized teaching strategies	-.074	.047	-.078	-1.554	.121
	Entrepreneurial programs	.097	.060	.090	1.624	.105

a. Dependent Variable: students' innovation

CONCLUSION AND LIMITATIONS

5.1 Conclusion

Surprisingly limited study has been done on entrepreneurship education despite its significance. In particular, minimal attention has been paid to the impact of entrepreneurial activities on students' capacity for entrepreneurship in previous studies. This paper gives a thorough overview of earlier research on the effects of entrepreneurial activity on students in higher education. The research study explored (i) the impact of entrepreneurial knowledge and awareness on higher education students' innovation, (ii) the relationship between students' perception towards entrepreneurial education and students' innovation, (iii) the impact of formalized teaching strategies on students' innovation process, and (iv) the impact of entrepreneurship development programs on students' innovation. With the collected data from 367 higher education institution students' statistical analysis were performed. From the results, it was found that entrepreneurial knowledge ($p=0.023$), entrepreneurial awareness ($p=0.006$), and formalized teaching strategies ($p=0.014$) significantly impact the higher education students' innovative process. Also, entrepreneurial education ($p=0.106$) and entrepreneurial development program ($p=0.179$) does not significantly impact the higher education students' innovative process.

5.2 Limitations

In terms of research samples, this study only evaluates entrepreneurship education from the perspective of higher education students due to the restrictions of the research objects, and it neglects to gather the necessary information on the managers of entrepreneurship education. Second, future studies may consider dynamic monitoring from the standpoint of organizational management; research approaches are similarly oriented toward static analysis and are characterized by a lack of dynamic tracking. Perception at various times has distinct influences on students' behavior. Additionally, many other ways perceived entrepreneurial education affects creativity. Future studies can broaden the scope of the research factors in entrepreneurship education as well as further expand and refine the research models and findings. Only the relationship between entrepreneurial education and students' creativity is considered in this study. Therefore, intermediaries and regulatory issues should be included in the study framework for future studies.

REFERENCES

1. Aboobaker, N. and Renjini, D., 2020. Human capital and entrepreneurial intentions: do entrepreneurship education and training provided by universities add value?. On the Horizon.
2. Carey, C. and Matlay, H., 2010. Creative disciplines education: a model for assessing ideas in entrepreneurship education?. *Education+ Training*.
3. Cui, J., Sun, J. and Bell, R., 2021. The impact of entrepreneurship education on the entrepreneurial mindset of college students in China: The mediating role of inspiration and the role of educational attributes. *The International Journal of Management Education*, 19(1), p.100296.
4. Hahn, D., Minola, T., Bosio, G. and Cassia, L., 2020. The impact of entrepreneurship education on university students' entrepreneurial skills: a family embeddedness perspective. *Small Business Economics*, 55(1), pp.257-282.
5. Hameed, I. and Irfan, Z., 2019. Entrepreneurship education: a review of challenges, characteristics and opportunities. *Entrepreneurship Education*, 2(3), pp.135-148.
6. Hamidi, D.Y., Wennberg, K. and Berglund, H., 2008. Creativity in entrepreneurship education. *Journal of small business and enterprise development*, 15(2), pp.304-320.
7. Hassan, A., Saleem, I., Anwar, I. and Hussain, S.A., 2020. Entrepreneurial intention of Indian university students: the role of opportunity recognition and entrepreneurship education. *Education+ Training*.
8. Hua, J., Zheng, K. and Fan, S., 2022. The Impact of Entrepreneurial Activities and College Students' Entrepreneurial Abilities in Higher Education——A Meta-Analytic Path. *Frontiers in Psychology*, p.4233.

9. Karimi, S., Biemans, H.J., Lans, T., Chizari, M. and Mulder, M., 2016. The impact of entrepreneurship education: A study of Iranian students' entrepreneurial intentions and opportunity identification. *Journal of Small Business Management*, 54(1), pp.187-209.
10. Li, L. and Wu, D., 2019. Entrepreneurial education and students' entrepreneurial intention: does team cooperation matter?. *Journal of Global Entrepreneurship Research*, 9(1), pp.1-13.
11. Maresch, D., Harms, R., Kailer, N. and Wimmer-Wurm, B., 2016. The impact of entrepreneurship education on the entrepreneurial intention of students in science and engineering versus business studies university programs. *Technological forecasting and social change*, 104, pp.172-179.
12. Martin, B.C., McNally, J.J. and Kay, M.J., 2013. Examining the formation of human capital in entrepreneurship: A meta-analysis of entrepreneurship education outcomes. *Journal of business venturing*, 28(2), pp.211-224.
13. Norris F. Krueger JR; Michael D. Reilly; Alan L. Carsrud (2000). Competing models of entrepreneurial intentions. pp. 15(5-6), 0-432.
14. Piperopoulos, P. and Dimov, D., 2015. Burst bubbles or build steam? Entrepreneurship education, entrepreneurial self- efficacy, and entrepreneurial intentions. *Journal of small business management*, 53(4), pp.970-985.
15. Pruett, M., 2012. Entrepreneurship education: Workshops and entrepreneurial intentions. *Journal of Education for Business*, 87(2), pp.94-101.
16. Rashid, L., 2019. Entrepreneurship education and sustainable development goals: A literature review and a closer look at fragile states and technology-enabled approaches. *Sustainability*, 11(19), p.5343.
17. Shah, I.A., Amjed, S. and Jaboob, S., 2020. The moderating role of entrepreneurship education in shaping entrepreneurial intentions. *Journal of Economic Structures*, 9(1), pp.1-15.
18. Shekhar, P. and Huang-Saad, A., 2021. Examining engineering students' participation in entrepreneurship education programs: implications for practice. *International Journal of STEM Education*, 8(1), pp.1-15.
19. Smith, A.J., Collins, L.A. and Hannon, P.D., 2006. Embedding new entrepreneurship programmes in UK higher education institutions: challenges and considerations. *Education+ training*.
20. Souitaris, V., Zerbinati, S. and Al-Laham, A., 2007. Do entrepreneurship programmes raise entrepreneurial intention of science and engineering students? The effect of learning, inspiration and resources. *Journal of Business venturing*, 22(4), pp.566-591.
21. Tang, Z. and Hull, C., 2012. An investigation of entrepreneurial orientation, perceived environmental hostility, and strategy application among Chinese SMEs. *Journal of Small Business Management*, 50(1), pp.132-158.

22. Tantawy, M., Herbert, K., McNally, J.J., Mengel, T., Piperopoulos, P. and Foord, D., 2021. Bringing creativity back to entrepreneurship education: Creative self-efficacy, creative process engagement, and entrepreneurial intentions. *Journal of Business Venturing Insights*, 15, p.e00239.
23. Wardana, L.W., Narmaditya, B.S., Wibowo, A., Mahendra, A.M., Wibowo, N.A., Harwida, G. and Rohman, A.N., 2020. The impact of entrepreneurship education and students' entrepreneurial mindset: the mediating role of attitude and self-efficacy. *Heliyon*, 6(9), p.e04922.
24. Zhang, Y., Duysters, G. and Cloudt, M., 2014. The role of entrepreneurship education as a predictor of university students' entrepreneurial intention. *International entrepreneurship and management journal*, 10(3), pp.623-641.
25. Zhao, L., Li, H. and Chen, L., 2022. Factors influencing Chinese college students' innovation and entrepreneurship ability: The moderating effect test based on entrepreneurial atmosphere. *Sustainability*, 14(20), p.13020.