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Nexus between Entrepreneurial Education, Entrepreneurial Mindset, and Entrepreneurial Passion on Entrepreneurial Intentions: Mediating Role of Self-efficacy

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Abstract

This study examines the complex dynamics of factors affecting self-efficacy (SE) and entrepreneurial intentions (EIs) among engineering students in India. It investigates the mediating role of SE in the relationships between entrepreneurial education (EE), entrepreneurial mindset (EM), entrepreneurial passion (EP), and EIs. The research reveals that SE remains stable across various personal characteristics, highlighting it as a robust individual trait less influenced by external factors. Gender significantly impacts EIs, underscoring its pivotal role in shaping entrepreneurial intentions, while other personal characteristics show limited influence. Passion and mindset appear to be consistent across demographics, suggesting they are intrinsic qualities. SE serves as a mediator in the connections between entrepreneurial mindset, passion, and intentions, elucidating its pivotal role in the entrepreneurial process. EE indirectly affects EIs and SE through other factors in the research model. Entrepreneurial passion directly influences both EIs and SE, emphasizing its role as a driving force for entrepreneurship. An entrepreneurial mindset doesn't directly affect intentions but significantly influences SE, indicating its importance in shaping self-efficacy, which in turn influences intentions. The findings can guide the development of educational programs and initiatives designed to promote entrepreneurship among engineering students in India while considering the impact of self-efficacy and gender-related factors.

Keywords: Entrepreneurial Education, Entrepreneurial Mindset, Entrepreneurial Passion on Entrepreneurial Intentions, Self-efficacy.

Introduction

The world of entrepreneurship has witnessed remarkable growth and transformation in recent years, with countless individuals aspiring to break free from traditional career paths and embark on their entrepreneurial journeys. As entrepreneurship becomes an increasingly attractive option for many, it has sparked a surge of interest in understanding the factors influencing entrepreneurial intentions—the precursor to entrepreneurial action. In this pursuit of unravelling the entrepreneurial mindset, passion, and self-efficacy that fuel intentions, scholars and researchers have turned their focus on entrepreneurial education. Entrepreneurial education refers to a specialized form of learning and training that is intended to provide individuals with the talents required to identify, create, develop, and manage entrepreneurial opportunities. The human capital theory serves as the foundation for entrepreneurial education. It mainly emphasizes capturing opportunities and offers a basis for instruction on the growth and expansion of entrepreneurial success (1). Entrepreneurial intentions indicate an individual's resolve and commitment to engage in entrepreneurial activities. These intentions are a precursor to actual entrepreneurial action and represent an individual's conscious decision to be an entrepreneur. Entrepreneurial passion is an intense emotional commitment and enthusiasm that individuals experience in the pursuit of their entrepreneurial endeavors. The theory of planned behavior is the framework for entrepreneurial intentions (2). The theory aids in analyzing the entrepreneurial behavior process in the context of entrepreneurship education (2). Entrepreneurial education has the tendency to alter entrepreneurial intention by influencing entrepreneurial knowledge, abilities, and spirit (3). An entrepreneurial mindset is a set of cognitive and behavioural characteristics, attitude and thought patterns that distinguish individuals

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with entrepreneurial orientation. It involves a particular way of thinking and approaching opportunities and challenges often associated with entrepreneurship. The theory of mindset, commonly referred to as fixed and growth theory describes how a person reacts to environmental difficulties that affect his attitude. This effect explains how a person responds to challenges, effort, and achievement (4). The term "entrepreneurial self-efficacy" describes a person's confidence in their capacity to carry out entrepreneurial duties and endeavors. In this study, it can be noted that entrepreneurial self-efficacy acts upon the theory of planned behavior, which promotes identifying the perceived behavior of an individual, which is prominent for inducing entrepreneurial intention (2). Although both self-efficacy and entrepreneurial enthusiasm are essential for success in entrepreneurship, their areas of emphasis are different. Passion for entrepreneurship is essentially emotional and motivating, inspiring people to connect deeply and personally with their work and endeavors. Cardon promoted the theory of entrepreneurial passion. According to this view, entrepreneurs are motivated by something that connects to a significant and meaningful aspect of their self-identity rather than because they are naturally inclined to feel this way (5). Passion is at the core of the entrepreneurial experience, together with other affective and emotional components (6). Conversely, entrepreneurial self-efficacy focuses more on the mental side of having confidence in one's capacity to carry out duties and responsibilities as assigned. Entrepreneurial education, characterized by programs, courses, and initiatives aimed at cultivating entrepreneurial skills and knowledge, has emerged as a prominent force in determining the intentions of budding businesspersons. However, entrepreneurial education and entrepreneurial intentions have complex relations. The intricate relationship between entrepreneurial education and entrepreneurial intents may be further complicated by the impact of an individual's entrepreneurial mentality, enthusiasm, and self-efficacy in pursuing entrepreneurial pursuits. Comprehending the interplay between these components is crucial for academic institutions looking to improve their entrepreneurial programs as well as aspiring business owners trying to figure out where to start. Entrepreneurship is a cornerstone for fostering innovation, creating jobs, and driving a nation's economic growth (7). It has a profound impact on shaping a country's economic landscape (8). Particularly in developing nations, entrepreneurship plays a pivotal role in bolstering their economic well-being (9). Entrepreneurship education has evolved into a significant area of study over an extended period. The growing enthusiasm and demand for entrepreneurship research are closely linked to its profound influence on economic development. Entrepreneurship contributes to economic growth by fostering innovation, introducing new inventions, generating employment opportunities, reinvigorating stagnant economies, and impacting various other facets of the economy (10). The formation of entrepreneurial intentions is significantly influenced by entrepreneurship education (11). The difference in men's and women's entrepreneurial self-efficacy and, eventually, intentions will be reduced through entrepreneurship education (11). Entrepreneurial intention is often considered a fundamental basis for behavior, as described by Ajzen in his work from 1991. It suggests that one's intentions or plans to perform a certain action can strongly influence one's actual behavior. This concept is widely used in the field of psychology and social sciences to understand and envisage the behaviors of humans (2). The various elements of entrepreneurship education are positively correlated with students' propensity to pursue entrepreneurship (12). There is an insignificant but positive correlation between entrepreneurial intention and entrepreneurship education (13). Indeed, offering entrepreneurship and business development programs can be promising, as these programs have the potential to generate intentions among participants. These intentions, in turn, can cultivate the skills, knowledge, and enthusiasm to begin the journey of entrepreneurship. Such programs serve as a valuable foundation for aspiring entrepreneurs, equipping them to pursue their entrepreneurial ambitions (14, 15). Entrepreneurial education develops self-efficacy Indeed, the confidence or belief in one's capacity to succeed in life can be described as self-efficacy (SE). This self-assurance is essential for many facets of both professional and personal growth

(16). Self-efficacy (SE) is a significant factor that influences entrepreneurship. SE has a crucial part in helping the persons overcome the obstacles and challenges they encounter in their entrepreneurial ventures. A strong self-efficacy empowers individuals to navigate and persevere through the various challenges that come with entrepreneurship (17). The relationship between entrepreneurial intention and entrepreneurial self-efficacy (18). The relationship between students' self-efficacy beliefs and entrepreneurial intentions appears to be moderated by the course design. In 'theoretically oriented' courses, this relationship is negative, suggesting that students' self-efficacy beliefs may be less conducive to entrepreneurial intentions in such courses. On the other hand, in 'practically oriented' courses, the relationship is positive, indicating that students' self-efficacy beliefs are more aligned with entrepreneurial intentions in these practical and applied settings. This finding implies that the approach and content of the course influence how students' self-efficacy and entrepreneurial intentions relate to one another (19). Passion is central to entrepreneurship, as it has the potential to stimulate creativity and the identification of novel information patterns that are crucial for recognizing and seizing promising opportunities (6). The theory of entrepreneurial passion, as proposed by Cardon in 2009, suggests that passion is not solely driven by an interest in entrepreneurial activities but instead by engagement in meaningful activities that bring uniqueness to the individual. In this context, entrepreneurial passion (EP) is described as a strong excitement that a person experiences while engaging in entrepreneurial work. Cardon's work also highlights that passion is a crucial feature of the entrepreneurial experience, intertwined with emotions and affection, as indicated in his 2013 study. This theory emphasizes the significance of finding meaning and enthusiasm in one's entrepreneurial pursuits (17). Passion is impacted in the beginning by entrepreneurial experiences. Student's passion for entrepreneurship significantly influences the curriculum of entrepreneurship education. Another element influencing students' enthusiasm is their level of education (20). It is claimed that students who receive entrepreneurial education become self-assured and passionate about launching their own businesses (21). Students in a Chinese higher vocational college exhibit relationships between their perceptions of entrepreneurial education, policies, self-efficacy, and intentions (22). It was found that the following factors significantly influence entrepreneurial intentions: gender, self-efficacy, creativity, and entrepreneurship education (18). A mindset is a mental state that encourages creative and critical thinking (15). It has been revealed that an entrepreneurial mindset affects an entrepreneurial person's intentions, attitudes, and behaviors (23). In general, research to date has shown that self-efficacy (SE) is a strong predictor of entrepreneurial intentions (EIs). This emphasizes how a person's self-efficacy and mindset influence their entrepreneurial goals and behaviours. It's clear from existing research that entrepreneurial education is a significant factor influencing entrepreneurial intentions (EIs). Nonetheless, the contributions of an entrepreneurial mindset and passion to the explanation of EIs have not received much attention in past research. By examining the mediating function of self-efficacy in the connections between entrepreneurial education, entrepreneurial passion, entrepreneurial mindset, and entrepreneurial intentions, this study seeks to close this gap. Through investigating these relationships and the possible mediating role of self-efficacy, the research seeks to offer a more thorough comprehension of how diverse elements influence people's aspirations to pursue entrepreneurship. This research work seeks to examine the nexus between entrepreneurial education, entrepreneurial mindset, entrepreneurial passion, and self-efficacy to reveal the intricate dynamics that lead to entrepreneurial intentions. This study aims to provide a comprehensive perspective on how entrepreneurial education impacts the intentions of aspiring entrepreneurs. The findings would inform educational institutions, policymakers, and aspiring entrepreneurs themselves, shedding light on the mechanisms through which entrepreneurial education can enhance or hinder the development of entrepreneurial intentions. In a time when entrepreneurial ventures play a pivotal role in economic growth and innovation, understanding the interplay of these factors becomes not only academically intriguing but also economically imperative. There is still a lacuna in the research,

especially in India, on how education, mindset, passion, and self-efficacy influence students' entrepreneurial intention, despite many studies examining these factors in the context of entrepreneurship. This research study intends to illuminate the complex paths that individuals navigate as they venture into the world of entrepreneurship. This research gap is being addressed by the current study with self-efficacy acting as a mediator; it especially aims to analyze the impact of entrepreneurial education, mindset, and passion on engineering students in India. In relation to the objective of the study, hypotheses are formulated. Hypothesis 1: entrepreneurial education, mindset, and passion have a significant impact on entrepreneurial self-efficacy. Hypothesis 2: entrepreneurial education, entrepreneurial mindset, and entrepreneurial passion have a significant impact on entrepreneurial intentions Hypothesis 3: entrepreneurial self-efficacy is a significant mediator in the relationship between entrepreneurial education, entrepreneurial passion, entrepreneurial mindset, and entrepreneurial intention. To evaluate the hypothesis, the structural Equation Modelling Path Method was employed to measure the mediating effect of entrepreneurial self-efficacy on the impact of entrepreneurial education, entrepreneurial mindset, and entrepreneurial passion on the entrepreneurial intentions of engineering students.

Methodology

Research Framework

The research methodology follows a descriptive research design with a causal type of investigation. This descriptive study examines the cause and effect of entrepreneurial education, entrepreneurial passion, entrepreneurial mindset, and entrepreneurial self-efficacy on entrepreneurial intentions. The research uses a survey as the primary data collection method, focusing on students pursuing engineering programs in Bangalore, India, as the unit of analysis. It should be noted that this study is cross-sectional, meaning it collects data at a stretch. Cross-sectional study is a type of empirical research design that gathers participant data at one particular moment. Cross-sectional studies offer an overview of a population at a particular point in time, as opposed to longitudinal studies, which collect data over a prolonged period of time. This methodology provides a solid framework for exploring the relationships between the specified constructs and understanding their impact on the EIs of engineering students in Bangalore.

Sample Design

The sample design for this study focuses on students pursuing engineering programs in Bangalore, India, due to its reputation as a startup hub and the presence of prestigious educational institutions. The target population comprises undergraduate and graduate engineering students in Bangalore. Given the large population of over 5 lakh engineering students in Bangalore, the sample size has been determined using Krejice and Morgon's (1970) formula. According to this formula, for a population above five lakhs, a sample size of 382 is needed at a 95% level of significance. Given the accessibility and approachability of engineering students for data collection, the study has chosen to use a non-probability sample using the judgmental sampling method in conjunction with purposeful sampling. Using the judgmental sampling technique, the researcher selects the sampling units based on his understanding of the population and the analysis. The researcher concentrates on the engineering students as participants to accomplish the study's goal. This approach allows for selecting specific participants who are likely to provide valuable insights, ensuring that the survey remains manageable and feasible with the determined sample size.

Data and Methods

The research is conducted using a survey as the primary data focusing on students pursuing engineering programs in Bangalore, India, as the unit analysis. The structured questionnaire is designed to gather information from the participants. The closed-ended questions on the administered questionnaire were thoughtfully constructed and phrased. The research instrument consists of two sections. The first section deals with the demographic features of the respondents, while a thorough explanation of engineering students' entrepreneurial education, mentality, self-efficacy, enthusiasm, and intentions is included in the second section. The questionnaire's questions are developed and constructed in accordance with the previously researched literature and the data that will be gathered from

study participants. A five-point Likert scale, with 1 denoting “strongly agrees" and 5 denoting "strongly disagree," is used to record the answers to the questions.

Measurement of the Variables

It's important to have well-defined measurement scales for the study's variables. The study operationalizes its constructs through the utilization of established measurement scales. Entrepreneurial education: Entrepreneurial education is a learning activity that is associated with the improvement of knowledge, abilities, skills, and personal character regarding entrepreneurship education. Entrepreneurial passion: Entrepreneurial passion is a joy an individual derives by engaging in activities associated with the role of an entrepreneur. Entrepreneurial mindset: Entrepreneurial mindset refers to an individual commitment toward entrepreneurial activities. Entrepreneurial intention: Entrepreneurial intention refers to the willingness of an individual to express entrepreneurial behavior or engage in entrepreneurial activities associated with self-employment initiatives or new business start-ups. Entrepreneurial self-efficacy: Self-efficacy is defined as the self-belief and inclination of individuals to achieve their personal goals. These scales are crucial for gathering information and evaluating how these factors relate to one another throughout the study. To validate the study's findings, it is essential to use adequate and validated scales. Wardana developed and validated the Entrepreneurial Mindset (EM) scale, Zhao developed and measured the Self-Efficacy (SE) scale, Wardana developed and validated the Entrepreneurial Education (EE) scale, the Cardon scale quantifies Entrepreneurial Passion (EP), and the Linan scale is used to measure the Entrepreneurial Intentions (EIs) of engineering students. Table 1 displays the tables that contain the data sources**.**

Table 1: Scales Employed

Construct	Name of the Scale	Author (s) and Year	No of Items
EE	EE Scale	(23)	6
EM	EM scale	(23)	6
EP	EP scale	(6)	13
SE	Self-efficacy scale	(24)	4
EIs	EIs scale	(25)	6

Note: EE Represents Entrepreneurial Education, EM is Entrepreneurial Mindset, EP Denotes Entrepreneurial Passion, SE Shows Self-Efficacy, and Eis Denote Entrepreneurial Intentions

Pilot Study

Conducting a pilot study to assess the reliability of the scales and the questionnaire is essential for reliable research. The alpha scores for the various constructs, such as “entrepreneurial education, self-efficacy, entrepreneurial intentions, passion, and entrepreneurial mindset”, have been calculated and found to be satisfactory. Alpha scores for the constructs such as “entrepreneurial education, self-efficacy, entrepreneurial intentions, passion, and entrepreneurial mindset” are 0.735, 0.779, 0.913, 0.900, and 0.710, respectively. High alpha scores generally indicate good internal consistency and reliability of the measurement scales. With reliable scales and a well-constructed questionnaire, you can proceed with confidence to conduct the main study, which will provide valuable insights into the relationships between these variables among engineering students in Bangalore.

Results

Analysis of the normality of the variables reveals that the variables considered are not normally distributed. This suggests that these variables may not follow a typical Gaussian distribution, which can impact the choice of statistical tests and methods for further analysis. Demographic characteristics of the sample units are provided below. Most of the respondents are male students who pursue engineering programs (70.9%), and 29.1% of the respondents are female students. 57% of the students are in the age group of 17 years to 20 years, and the remaining students are in the age group of more than 20 years. 45.3% of the sample students study Computer Science Engineering, 14.1% of the students study Civil Engineering, 12.5% study Mechanical Engineering, and 12.5% pursue Electronics and Communication Engineering. 15.6% of the sample students belong to other engineering branches such as Instrumentation Engineering, Mechatronics

Engineering, Chemical Engineering, and Automobile Engineering. 95.8% of the sample students study in private Engineering institutions and 4.2% study in government-aided Engineering institutions. All the sample units of the study come from engineering institutions located in urban areas. Further, the Mann-Whitney U and Kruskal Wallis tests are employed to analyze the variations in perceptions of "self-efficacy, entrepreneurial intentions, passion, entrepreneurial mindset, and entrepreneurial education" are measured and discussed here.

Table 2: Self-Efficacy

Factors	P-Value	Result
Gender	0.312	NS
Age	0.884	NS
Field of the study	0.266	NS
Nature of educational institution	0.443	NS
Locality	0.696	NS

Note: NS Represents Not Significant, and S Represents Significant.

Table 3: Entrepreneurial Intentions

Factors	P-Value	Result
Gender	0.003	S
Age	0.652	NS
Field of the study	0.555	NS
Nature of educational institution	0.103	NS
Locality	0.455	NS

It's interesting to note that based on the p-values provided in Table 2, the self-efficacy of the sample students does not vary significantly with their characteristics. When p-values are more significant than 0.05 (usually a significance level), it suggests that there is no statistically significant difference in self-efficacy based on these personal characteristics. According to the information presented in Table 3, the sample students' intentions to pursue entrepreneurship differ according to their gender. This indicates that gender is a factor that accounts for differences in entrepreneurial intentions in the sample. However, it can be observed that entrepreneurial intentions do not vary significantly based on other personal characteristics. This suggests that these factors may not have a substantial impact on the students' entrepreneurial intentions.

Table 4: Passion

Factors	P-Value	Result
Gender	0.991	NS
Age	0.264	NS
Field of the study	0.362	NS
Nature of educational institution	0.904	NS
Locality	0.984	NS

It is shown in Table 4 that the passion of the sample students does not significantly vary based on their characteristics. This suggests that these personal factors may not be strong determinants of the level of passion for entrepreneurship among the sample students. This finding indicates that passion for entrepreneurship appears to be relatively consistent across different demographic and contextual variables within the sample. It may imply that factors other than these personal characteristics play a significant role in modelling entrepreneurial passion among the students surveyed. Knowing the determinants of entrepreneurial passion is crucial for fostering and supporting entrepreneurship among students and aspiring entrepreneurs.

Table 5: Entrepreneurial Mindset

Factors	P-Value	Result
Gender	0.309	NS
Age	0.819	NS

Field of the study	0.326	NS
Nature of educational institution	0.636	NS
Locality	0.759	NS

Table 6: Entrepreneurial Education

Factors	P-Value	Result
Gender	0.001	S
Age	0.455	NS
Field of the study	0.023	S
Nature of educational institution	0.000	S
Locality	0.247	NS

According to the information presented in Table 5, the entrepreneurial mindset of the sample students does not exhibit significant variations based on their characteristics. This suggests that these demographic and contextual factors do not significantly impact the students' entrepreneurial mindset. Table 6 indicates that entrepreneurial education perceptions of the sample units differ according to gender, the field of study, and the nature of educational institutions. Further, age and locality do not provide any difference in the entrepreneurial education perceptions of the sample units. From Tables 2 to 6, it is noted that engineering students have different yet important opinions about entrepreneurial education depending on their gender. Compared to male students, female students receive superior instruction in entrepreneurship. Depending on their age, engineering students have different yet noteworthy opinions about an entrepreneurial mindset. The entrepreneurial mindset of engineering students increases with age; sample respondents over 20 years old have a stronger entrepreneurial mindset than those between the ages of 17 and 20. Depending on their field of study, engineering students have diverse but noteworthy opinions about entrepreneurial education, entrepreneurial attitude, entrepreneurial self-efficacy, entrepreneurial enthusiasm, and entrepreneurial intentions. Compared to computer science students, those pursuing engineering specialties like instrumentation, mechatronics, chemical, and automotive engineering have higher levels of entrepreneurial education, entrepreneurial mindset, entrepreneurial self-efficacy, entrepreneurial passion, and entrepreneurial intentions. Depending on their college, engineering students' opinions on entrepreneurial education are diverse but important. Compared to private institutions, government-aided schools provide more effective entrepreneurship education. Students' entrepreneurial education, entrepreneurial attitude, entrepreneurial self-efficacy, entrepreneurial enthusiasm, and entrepreneurial ambitions vary but are consistent across all student location groups. The mediating role of self-efficacy in the relationships between entrepreneurial education, entrepreneurial passion, entrepreneurial mindset, and entrepreneurial intentions is analyzed using SEM Path analysis, which is exhibited in Figure 1. SEM was used to test the hypothesis in the innovative PLS program. It is also considered a second-generation statistical technique created as a suggested model for analyzing multiple variables and their relationships. Software SPSS V.20 (statistical package for social sciences) and smart PLS V.20 are used for all statistical analyses. There are various development sequences for SEM. These comprise factor analysis, trajectory analysis, structural equations, and the regression model. The path model uses a regression method and correlation coefficient to create more intricate models between the observed variables of the study.

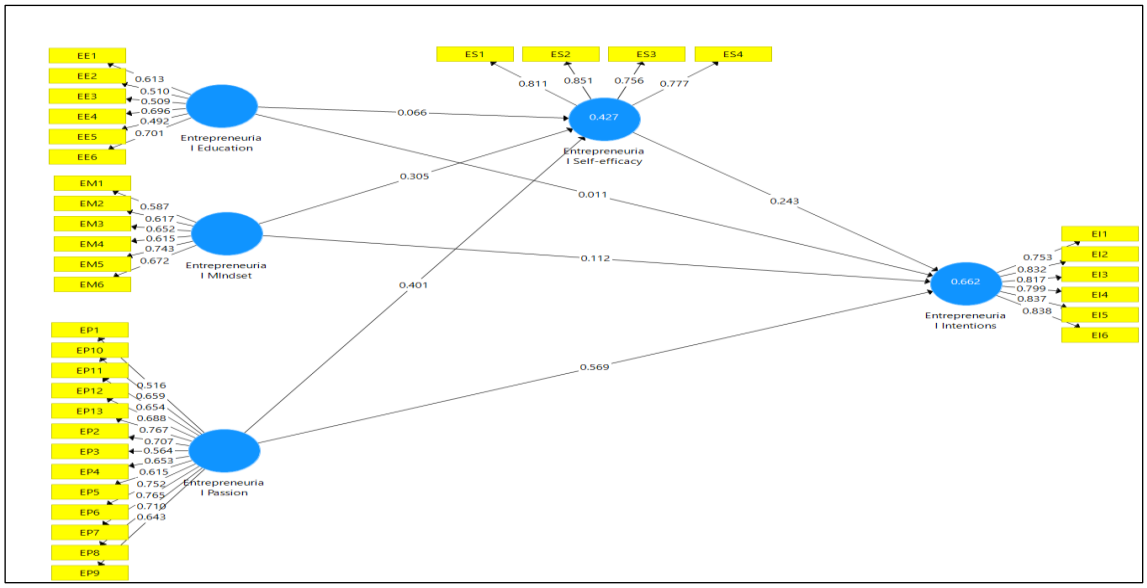

Figure 1: Analysis of Research Model

Table 7: Construct Reliability and Validity

Construct	Composite Reliability	AVE	α
EE	0.761	0.653	0.765
EM	0.813	0.672	0.737
EP	0.914	0.663	0.898
SE	0.876	0.639	0.813
EIs	0.921	0.661	0.897

Table 8: Direct Effects

Particulars	Direct Effects	P-Value
EE ➡ EIs	0.011	0.897
EE ➡ SE	0.066	0.500
EM ➡ EIS	0.112	0.138
EM ➡ SE	0.305	0.006
EP ➡ EIs	0.569	0.000
EP ➡ SE	0.401	0.000
SE ➡ EIs	0.243	0.002

The reliability and Validity of the constructs are presented in Table 7. Composite reliability (CR) and Cronbach's α score are much above the expected scores of 0.700. The high CR, α scores, and satisfactory AVE scores indicate that the measurement scales and constructs used in the study are reliable and valid. This ensures that the data reflects the underlying variables intended to be measured, increasing the trustworthiness of the research findings. Table 8 presents the direct effects of the model, specifically how various factors impact entrepreneurial intentions (EIs), self-efficacy (SE), and each other. Entrepreneurial Education (EE) insignificantly affects both EIs and SEs. In other words, in the model, there is no statistically significant direct effect of EE on these two variables. EM insignificantly affects EIs. However, it significantly affects SE to the extent of 30.5%. This means that while an entrepreneurial mindset does not have a direct impact on EIs, it does influence self-efficacy significantly. Entrepreneurial passion significantly affects entrepreneurial intentions to the extent of 56.9%. It also significantly affects SE to the extent of 40.1%. This implies that having a strong entrepreneurial passion (EP) has a substantial direct impact on both intentions and SE. SE significantly affects entrepreneurial intentions to the extent of 24.3%. In other words, a major factor influencing the formation of entrepreneurial intentions is SE. These results offer insightful information about the connections between these important research model components. EP and SE seem to be important predictors of EIs, even

though EE and EM may not directly affect them. Furthermore, SE is significantly impacted by EM and may indirectly influence entrepreneurial intentions. The use of the bootstrapping method to assess the level of mediation is a common and reliable approach in statistical analysis. Table 9 provides the indirect effects of SE.

Table 9: Indirect Effect of SE

Particulars	Specific Indirect Effects	P-Value
EE➡SE➡EIs	0.016	0.505
EM➡SE➡EIs	0.074	0.043
EP➡SE➡EIs	0.097	0.014

Table 10: Total Effects

Particulars	EE	EMS	EP	SE	EI
EE	-	-	-	0.066 (0.738)	0.207 (0.512)
EM	-	-	-	0.305 (0.011)	0.186 (0.022)
EP	-	-	-	0.666 (0.000)	0.401 (0.000)
SE	-	-	-	-	0.243 (0.004)
EI	-	-	-	-	-

Note: P-value is given in the parenthesis

Entrepreneurial Education and Entrepreneurial Intentions

The indirect effect of SE in the relationship between EE and EIs is insignificant. This shows that self-efficacy does not mediate the relationship between entrepreneurial education and intentions in the model.

Entrepreneurial Mindset and Entrepreneurial Intentions

It is reported that there is a significant indirect relationship between entrepreneurial self-efficacy and the mindset and intentions of entrepreneurs. This suggests that the impact of mindset on intentions is influenced by self-efficacy, which acts as a mediator in the relationship between entrepreneurial mindset and intentions.

Entrepreneurial Passion and Entrepreneurial Intentions

It is reported that entrepreneurial self-efficacy has a significant indirect impact on the relationship between entrepreneurial passion and intentions. This suggests that self-efficacy influences how passion influences intentions in the relationship between entrepreneurial passion and intentions, serving as a mediator between the two. The total effects of the model are shown in Table 10. Total effects are the sum of the direct and indirect effects. There is insignificant evidence that EE has a significant overall impact on SE and EIs. SE and EIs are significantly impacted by the EM overall, to the tune of 30.5% and 18.6%, respectively. To the tune of 40.1% and 66.6%, respectively, the overall impact of EP on SE and EIs is significant. There is a significant 24.3% overall impact of SE on EIs. Table 10 provides information about the total effects in your model, which include both direct and indirect effects.

Entrepreneurial Education

The total effects of EE on both SE and EIs are insignificant. This suggests that in the context of EE, SE and EIs are not significantly impacted by the direct and indirect effects taken together.

Entrepreneurial Mindset

The total effect of EM on both SE and EIs is significant. It accounts for 30.5% of the effect on self-efficacy and 18.6% of the effect on intentions. This suggests that EM has a significant overall impact on SE and EIs, considering both direct and indirect influences.

Entrepreneurial Passion

The total effect of EP on both SE and EIs is also significant. It accounts for 66.6% of the effect on self-efficacy and 40.1% of the effect on intentions. This implies that EP has a substantial overall impact on SE and EIs, considering both direct and indirect influences.

Entrepreneurial Self-Efficacy

The total effect of SE on EIs is significant and accounts for 24.3% of the effect. This suggests that SE plays a significant role in shaping EIs when considering both direct and indirect influences. These results offer a comprehensive view of how these factors collectively influence self-efficacy and intentions in the model.

Table 11: Overall Impact Analysis

Model	Predictors	Dependant	R^2	Adjusted R^2
1	EED, EMS, and EP	ESE	0.662	0.647
2	EED, EMS, and EP	EI	0.427	0.409

Table 11 summarizes the overall "impact of entrepreneurial education, entrepreneurial mindset, and entrepreneurial passion" on both entrepreneurial efficacy and entrepreneurial intentions in the model.

Impact on Entrepreneurial Efficacy

When considering the combined effects of EE, EM, and EP, these factors have a substantial effect on SE, accounting for 66.2% of the variance. This indicates that these elements collectively play a significant role in shaping SE.

Impact on Entrepreneurial Intentions

Similarly, when looking at the combined effects of EE, EM, and EP, these factors significantly impact EIs, accounting for 40.9% of the variance. This suggests that these factors, as a group, play a substantial role in influencing the intentions of individuals to do entrepreneurship. Thus, the results of the mediating role of SE in the impact of EE, EM, and EP on EI in view of the SEM model reveal that EE and EM insignificantly affect EI, ES, and EM. EP significantly impacts entrepreneurial self-efficacy. It should be noted here that EM significantly affects the EI of the students when EM is a lone predictor of EI. However, EM becomes insignificant when it becomes one of the predictors and other predictors such as EE and EP. Like the previous results, EE insignificantly affects the EI of the students. Mediation analysis results further convey that SE significantly affects entrepreneurial intentions. As far as indirect effects are concerned, the indirect effect of entrepreneurial self-efficacy in entrepreneurial education and entrepreneurial intentions relation is insignificant, and the indirect effect of entrepreneurial self-efficacy in entrepreneurial mindset and entrepreneurial intentions relation and entrepreneurial passion and entrepreneurial intentions relation are significant. Regarding indirect effect, these results shed light on the function of self-efficacy as a mediator in the connections between the factors under investigation. The relationship between an entrepreneurial mindset and intentions, as well as the relationship between an entrepreneurial passion and intentions, seem to be mediated by self-efficacy. However, the relationship between entrepreneurial education and intentions is not mediated by self-efficacy. As far as total effects are concerned, entrepreneurial education does not show significant effects; entrepreneurial mindset, entrepreneurial passion, and self-efficacy have notable overall impacts when their direct and indirect effects are combined. The mediating role of entrepreneurial self-efficacy in the impact of entrepreneurial education, entrepreneurial mindset, and entrepreneurial passion on entrepreneurial intentions showcases that entrepreneurial education does not contribute to entrepreneurial self-efficacy and entrepreneurial intentions of the sample students both directly and indirectly. Further, the entrepreneurial mindset does not contribute to the entrepreneurial intentions of the sample students directly, but it contributes indirectly. Entrepreneurial passion contributes to the entrepreneurial intentions of the sample students both directly and indirectly.

Discussion

The purpose of this study is to assess how self-efficacy mediates the relationships between engineering students in India's "entrepreneurial education, entrepreneurial mindset, entrepreneurial passion, and entrepreneurial intentions". The presented results offer a comprehensive view of the various factors and their interactions within the research model. The results convey that the SE of the sample students does not significantly vary with personal characteristics such as gender, age, field of study, nature of educational institution, and locality of the institution, which suggests that SE is fairly consistent across these demographic and contextual factors. This underscores the stability of self-efficacy as a personal trait. The results depict that entrepreneurial intentions vary based on gender, indicating that gender is a significant factor in accounting for differences in entrepreneurial intentions. This highlights the importance of considering gender-related factors when addressing entrepreneurial intentions. It is notable that while gender affects entrepreneurial intentions, other personal characteristics like age, field of study, nature of the educational institution,

and locality do not significantly provide variance in intentions. This suggests that these other factors may not be as prominent in shaping entrepreneurial intentions within your sample. Further, passion and mindset do not significantly vary with personal characteristics, suggesting that these aspects of an individual's entrepreneurial orientation are stable across demographic and contextual variables. This stability may indicate that passion and mindset are intrinsic factors that transcend external influences. Entrepreneurial education does not have a significant direct effect on EIS or SE. This implies that the impact of EE on these variables is mediated by other factors in the model. The impact of EM on SE is significant, suggesting that mindset plays a significant role in shaping SE, even though it doesn't have a direct impact on intentions. EP has a substantial direct impact on both EIs and SE. This underscores the importance of cultivating and harnessing passion as a driver for entrepreneurial activities. Self-efficacy significantly affects entrepreneurial intentions, confirming its role as a key factor in shaping individuals' intentions to engage in entrepreneurship. The results on the mediating role of self-efficacy indicate that self-efficacy acts as a mediator in the relationships between EM, EP, and EIs. This suggests that SE partially explains how EM and EP influence intentions. The combined total effects of EE, EM, and EP on SE and EIs highlight the overall impact of these factors. While EE may not have a significant direct effect, it's evident that EM and EP collectively have a substantial influence on these aspects of entrepreneurial orientation. In summary, these findings provide valuable insights into the complex relationship of factors that influence SE and EIs in the context of entrepreneurship. The results emphasize the importance of considering gender in entrepreneurial intentions and emphasize the substantial role of passion, mindset, and self-efficacy in shaping these entrepreneurial attributes.

Conclusion

The study focused on assessing the mediating role of self-efficacy in the relationships between "entrepreneurial education, entrepreneurial mindset, entrepreneurial passion, and entrepreneurial intentions" of engineering students in India. The study found that SE remains relatively consistent across various personal characteristics, such as gender, age, field of study, the nature of the educational institution, and locality. This underscores SE as a stable personal trait that is not strongly influenced by external factors. The research revealed that gender significantly causes variances in entrepreneurial intentions, indicating that gender-related factors are critical in determining individuals' intentions to engage in entrepreneurial activities. While gender has a significant effect on intentions, the study showed that other personal characteristics, including age, field of study, the nature of the educational institution, and location, do not have a substantial impact on EIs in the sample. Passion and mindset were found to be relatively stable across various personal characteristics, suggesting that they are intrinsic factors that persist regardless of demographic or contextual influences. SE was identified as a mediator between entrepreneurial mindset, entrepreneurial passion, and entrepreneurial intentions. This implies that self-efficacy partially explains how mindset and passion influence intentions, highlighting the position of SE in the entrepreneurial process. The study showed that EE does not have a significant direct effect on EIs or SE. Instead, the impact of EE on these variables is mediated by other factors in the research model. Entrepreneurial passion had a substantial direct effect on both EIs and SE, emphasizing the significance of cultivating and harnessing passion as a driver for entrepreneurial activities. An entrepreneurial mindset, while not directly impacting intentions, significantly influences self-efficacy. This suggests that mindset plays a crucial role in shaping SE, which, in turn, affects intentions. When considering the total effects, EE, EM, and EP collectively have a significant effect on self-efficacy and intentions. These factors, when combined, shape the overall entrepreneurial orientation of individuals in the sample. This study provides valuable insights into the complex relationships between various factors that influence SE and EIs in the context of entrepreneurship. The findings underscore the role of gender in EIs and highlight the substantial influence of passion, mindset, and self-efficacy in shaping entrepreneurial attributes. These insights can inform educational programs and initiatives to foster entrepreneurship among engineering students in India, considering the mediating role of

self-efficacy and the importance of gender-related considerations.

Abbreviations

SE: Self-efficacy, Eis: Entrepreneurial Intentions, EE: Entrepreneurial Education, EM: Entrepreneurial Mindset, EP: Entrepreneurial passion.

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Author Contributions

Monica J: Conceptualization, Formal analysis, Investigation, Methodology, Resources, Software, Validation, Visualization, Writing – original draft, Anuradha P S: Conceptualization, Formal analysis, Investigation, Methodology, Resources, Software, Supervision Validation, Visualization, Writing – original draft.

Conflict of Interest

The authors have no conflicts of interest to declare.

Ethics Approval

The authors obtained permission from the engineering colleges to distribute the questionnaires to students.

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References

1. Unger JM, Rauch A, Frese M, Rosenbusch N. Human Capital and entrepreneurial success: A meta-analytical review. Journal of business venturing. 2011;26(3):341–358.
2. Ajzen I. The theory of planned behavior. Organ Behav Hum Decis Process. 1991;50(2):179–211.
3. Lv Y, Chen Y, Wang J, An L, Chen T. How entrepreneurship education at universities influences entrepreneurial intentions: mediation effect based on entrepreneurial competence. Front Psychol. 2021;12:1–12.
4. Kollalou Konan K E, Li Cai, Akolgo I G, Tchamekwen A M. Evolution view of entrepreneurial mindset theory. International Journal of Business and Social Sciences. 2019;10(6):511–532.
5. Cardon M S, Wincent JS, Drnovsek M. The Nature and Experience of Entrepreneurial Passion. Academy of Management Review. 2009;34(3):511–532.
6. Cardon MS, Gregoire DA, Stevens CE, Patel PC. Measuring entrepreneurial passion: Conceptual foundations and scale validation. J Bus Ventur. 2013;28(3):373–396.
7. Anjum T, Amoozegar A, Farrukh M, Heidler P. Entrepreneurial intentions among business students: the mediating role of attitude and the moderating role of university support. Educ Train. 2022;65(4):587–606.
8. Murad M, Li C, Ashraf SF, Arora S. The Influence of Entrepreneurial Passion in the Relationship Between Creativity and Entrepreneurial Intention. Int J Glob Bus Compet. 2021;16(1):51–60.
9. Bignetti B, Santos ACMZ, Hansen PB, Henriqson E. The influence of entrepreneurial passion and creativity on entrepreneurial intentions. Resour Entrep Dev. 2021;22(2):1–32.
10. Boahemaah L, Xin L, Dobge CSK, Pomegbe WWK. The Impact of Entrepreneurship Education on the Entrepreneurial Intention of Students in Tertiary Institutions. Int J Manag Account Econ. 2020;7(4):123–46.
11. Nowinski W, Haddoud MY, Lancaric D, Egerova D, Czegldi C. The impact of entrepreneurship education, entrepreneurial self-efficacy and gender on entrepreneurial intentions of university students in the Visegrad countries. Stud High Educ. 2019;44(2):361–79.
12. Weeransinghe RN. Entrepreneurial education and entrepreneurial intention among ordinary level students in Kelaniya education zone in Sri Lanka. Int J Multidiscip Curr Educ Res. 2020;2(4):122–31.
13. Prajapati B. Entrepreneurial Intention Among Business Students: The Effect of Entrepreneurship Education. Westcliff Int J Appl Res. 2019;3(1):54–67.
14. Ndaghu JT, Gwems JAM, Wajiga H, Augustine MV. Shapero's Model: A Veritable Tool for Explaining Entrepreneurial Intentions and Attitudes among Management Technology Students in Mautech Yola, Adamawa State, Nigeria. Int J Bus Manag Invent. 2016;5(12):19–26.
15. Jiatong W, Murad M, Bajun F, Tufail MS, Mirza F, Rafiq M. Impact of Entrepreneurial Education, Mindset, and Creativity on Entrepreneurial Intention: Mediating Role of Entrepreneurial Self-Efficacy. Frontiers in Psychology. 2021;12:1–12.
16. Gubik AS and Farkas S. Entrepreneurial Intention in the Visegrad Countries. Danube. 2020;10(4):347–68.
17. Cardon MS and Kirk CP. Entrepreneurial Passion as Mediator of the Self-Efficacy to Persistence Relationship. Entrep Theory Pract. 2015;39(5):1027–50.
18. Usman O, Widyanti J. The Impact of Entrepreneurship Education, Entrepreneurial Self-Efficacy, and Gender on Entrepreneurial Intention. SSRN Electronic Journal. 2020: 1–17. http://dx.doi.org/10.2139/ssrn.3644787
19. Piperopoulos P and Dimov D. Burst Bubbles or Build Steam? Entrepreneurship Education, Entrepreneurial Self-Efficacy, and Entrepreneurial Intentions. J Small Bus Manag. 2015;53(4):970–85.
20. Li Z and Islam AYMA. Entrepreneurial Intention in Higher Vocational Education: An Empirically-Based Model With Implications for the Entrepreneurial Community. SAGE Open. 2021;11(4):1–14.
21. Arshad M, Farooq O, Afzal S. The role of entrepreneurship education in developing passion for business. GBOE. 2018;38:15-21.
22. Stroe S, Wincent J, Parida V. Untangling intense engagement in entrepreneurship: Role overload and obsessive passion in early-stage entrepreneurs. Journal of Business Research. 2018;90:59-66.
23. Wardana LW, Narmaditya BS, Wibowo A, Mahendra

AM, Wibowo NA, Harwida G. The impact of entrepreneurship education and students' entrepreneurial mindset: the mediating role of attitude and self-efficacy. Heliyon. 2020;6(9)1–7.
24. Zhao H, Hills GE, Seibert SE. The mediating role of self-efficacy in the development of entrepreneurial intentions. J Appl Psychol. 2005;90(6):1265–72.
25. Linan F, Rodriguez-Cohard JC, Rueda-Cantuche JM. Factors affecting entrepreneurial intention levels: a role for education. Int Entrep Manag J. 2011;7(2):195–218.