

Research Article

Drivers of Student Entrepreneurial Intention and the Moderating Role of Entrepreneurship Education: Evidence from an Indian University

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This study is an effort for measuring the entrepreneurial orientation of the students and its linkage with their entrepreneurial intention. The study is based on entrepreneurial dimensions such as innovativeness, need for achievements, opportunity recognition, risk-taking propensities, and entrepreneurship education. The study also used entrepreneurship education and gender as moderating variables. A 5-point Likert-type scale was designed by adapting the Individual Entrepreneurial Orientation measurement scale and Entrepreneurial Intention Questionnaire (EIQ). The authors postulated 7 hypotheses. Data analysis confirmed that underlying entrepreneurial dimensions have a positive correlation with students' entrepreneurial intention. This paper concludes that entrepreneurial dimensions and proper delivery of entrepreneurship education will help the students in transforming their entrepreneurial intention into actual entrepreneurial action.

1. Introduction

The study is an attempt to present entrepreneurial orientation (EO) of the students and its linkage with their entrepreneurial intention (EI) by using some of the most important and widely accepted entrepreneurial dimensions (EDs) [1], namely, innovativeness (INV), need for achievements (NFA), opportunity recognition (OR), risk-taking propensities (RTP), and entrepreneurship education (EE). The study also used the entrepreneurship education and gender (GEN) to find out whether these factors moderate the relationships of entrepreneurial dimensions and entrepreneurial intention of the students (Figure 1) [2].

It is a well-established fact that the economies of almost all countries are experiencing different levels of economic slowdown. People are losing their jobs and businesses and

the employment rate is touching its new bottom in many developing and developed countries [3]. In this situation, when the new jobs are not there in the market for the students who are graduating from their universities, it becomes imperative to understand the entrepreneurial orientation and intent of the students. Entrepreneurship and entrepreneurial intention among the younger generation have always been the subject of great interest. But, lately, the researchers are also exploring different angles and scenarios involving young potential entrepreneurs [4].

Entrepreneurs are the stewards who primarily actively participate in the economic development of the country by employing and executing the plans of their entrepreneurial ventures [2]. With the growth in entrepreneurship, prosperity in the form of newly generated employment, innovative products, and businesses are also achieved. However,

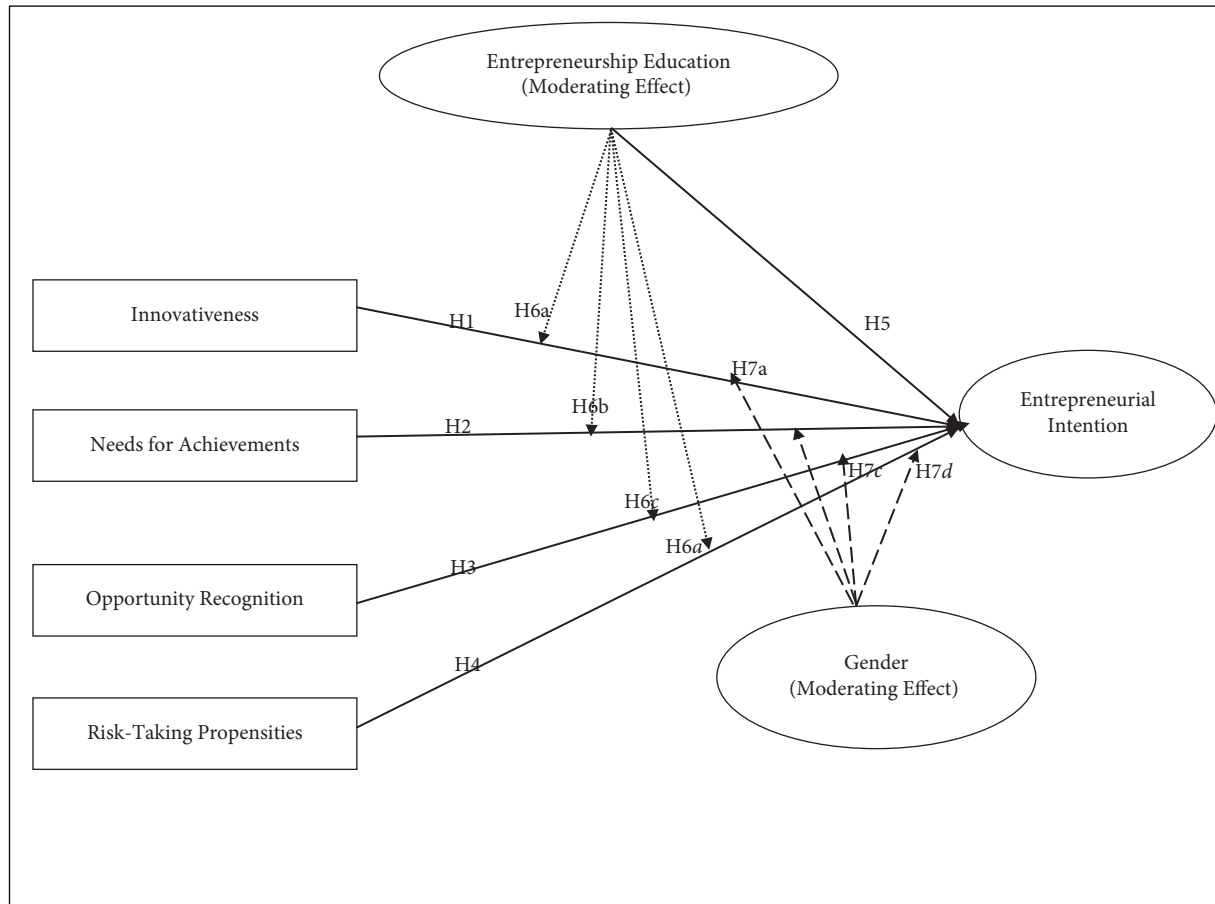


FIGURE 1: Conceptual framework. Source: prepared by authors.

despite achieving significant entrepreneurial growth, the current employment situation in India does not look very promising. A report from the Centre for Monitoring Indian Economy (CMIE) in April 2021 reveals the adverse situation of unemployment in India. According to this report (CMIE, 2021), 45 million or more people are unemployed in India, and out of the 29 million people (mostly youth) are in the active pursuit of a job. Thus, the current unemployment rate in India (10% in April 2021) presents an alarming situation for the Indian economy. As such India requires more entrepreneurs as well as promotion of entrepreneurship, entrepreneurial education, and skills [5, 6].

The enhanced level of entrepreneurial education in the economy not only increases the level of self-employment (entrepreneurship level) but also the employment rate. Anwar and Saleem [7] in their study found that a majority of the population in India still prefers to be employed and work on salary, rather than being an employer. Although India's rank has improved over the years (31st in 2018, 22nd in 2019, and 13th in 2020) on early-stage entrepreneurial activity rate (TEA) published by Global Entrepreneurship Monitor. There is also a favorable change in the Ease of doing business ranking of India in the last few years. India ranked 63rd out of 190 participating countries in 2019. Yet Indians are far behind when it comes to the ranking of entrepreneurial dimensions like perceived level of opportunity recognition

(20th out of 50 countries) and self-efficacy (20th out of 50 countries) and they failed to be entrepreneurially intent [8, 9]. It is revealed during the review of the literature [10, 11] that entrepreneurship education helps in promoting entrepreneurship and its allied dimensions among the younger generation and students. A significant number of the students especially those graduating from business schools in India are expected to be future entrepreneurs. As such, student entrepreneurship programs should be encouraged and promoted. Studies have been conducted in the past, using students' sample data from different countries, cultures, scenarios, or contexts in different periods to assess the relationships of EDs with the EI of the students [12, 13]. Researches are available which show that sample data of students may also be used as a reliable proxy to speculate or estimate the level of potential entrepreneurs in the future [14].

1.1. Purpose of the Study. Considering the underlying discussion over the previous literature available on the subjects like student entrepreneurship, entrepreneurship education, entrepreneurial dimensions, orientation, and intention, the ultimate aim of this study is to analyze the relationships of EDs with the EI of the students (RQ1), to assess the moderating role of EE (RQ2) and GEN (RQ3).

- (i) *RQ1*. How do the entrepreneurial dimensions (EDs) namely, innovativeness (INV), need for achievements (NFA), opportunity recognition (OR), and risk-taking propensities (RTP) affect the entrepreneurial intention (EI) of students?
- (ii) *RQ2*. How do moderating characteristics of entrepreneurship education (EE) affects the relationship of students' entrepreneurial dimensions (EDs) and their entrepreneurial intention (EI)?
- (iii) *RQ3*. How do moderating characteristics of gender (GEN) affects the relationship of students' entrepreneurial dimensions (EDs) and their entrepreneurial intention (EI)?

Present work is the result of the data collected from Business and Management students at the graduate and post-graduate level in Jamia Millia Islamia (JMI), a central university, situated in Delhi, the capital of India.

The study is further divided into 6 more sections. Section 2 is named as "Review of Literature and Development of Hypotheses", while Section 3 is Research Methodology and Section 4 is "Data Analysis and Results". Section 5 is devoted to "Discussion and Conclusion," while Section 6 shows the "Practical and Academic Implications of the Study" and Section 7 is dedicated to the "Limitations of the Study and Scope of the Future Research."

2. Review of Literature and Development of Hypotheses

2.1. Entrepreneurial Orientation and Its Dimensions

2.1.1. Innovativeness [INV]. INV is an ability to create, adapt and/or implement ideas that further enhance the overall value. INV in the form of creativity may reflect in the actions of passionate individuals. The work of Cardon et al. [15] showed that EI or passion is positively correlated with INV and an individual may pursue their commitment innovatively if they are intent or passionate. INV which is considered as a precursor to entrepreneurship [16], has a very important component named creativity that plays a crucial role in the process of establishment of new ventures. It helps in recognizing new opportunities in the market and generating new ideas [17]. Past studies also provide empirical evidence that successful entrepreneurs share innovativeness as a common trait. Select few studies are considered to portray INV as a component/dimension of an individual's EO [18]. This was also exhibited that the students opting for entrepreneurship subject/discipline as their major tend to be more innovative than the students opting for business administration or any other discipline. A study of large organizations revealed that entrepreneurs scored higher than the managers while comparing them on [19] scale of innovation adaptation. Goldsmith et al. [20] used the sample of people from America and Finland and concluded that those whose objective is to earn profit and to achieve growth, scored high on Jackson's scale of Innovativeness comparing those who have the objective just to earn income to cover family expenses [21]. It is found that potential entrepreneurs

have an intention to earn profit so they try to introduce innovative combinations. Based on the underlying discussion, the authors derived their first hypothesis as:

H1: Students' Innovativeness [INV] significantly affects their Entrepreneurial Intention [EI]

2.1.2. Needs for Achievements [NFA]. NFA is considered as a kind of strength that drives the basic psychological process of any individual who wants to go with the value of achievement behavior [22]. NFA helps entrepreneurs engage in activities required to develop ultimate EI [23]. Reference [24] see it as a driving force that helps entrepreneurs motivate themselves to get success and be able to develop a competitive advantage in their businesses. A high level of NFA as a personality trait distinguishes the entrepreneurs from other professionals by translating their NFA into achievement behavior [25]. NFA has a crucial role in the emergence of EI among students [26]. McClelland et. al. [27] describe that needs are not determined biologically but learned culturally. It has been experienced that some cultures produce a large number of entrepreneurs than others because of their cultural socialization process that enhances NFA among individuals. In another study, it was also found that NFA is strongly correlated with EI and ultimately entrepreneurial success. Achievement motivation was found to be one of the strongest characteristics of EI among the sample set of students. A positive correlation between NFA and EI has been found in many other studies in different countries and cultures. Apart from these studies, many other secondary data-based types of researches show a strong positive linkage between NFA and EI through meta-analysis. However, Fineman [28] and Mazur [29] have criticized the importance of NFA and disapprove of any positive relationship between NFA and EI. Thus, based on the literature reviewed, the authors postulated a second hypothesis (H2) as

H2: students' need for achievements (NFA) significantly affects their entrepreneurial intention (EI).

2.1.3. Opportunity Recognition (OR). Under the phenomena of entrepreneurship, OR is considered as a dimension of the overall EO of an individual. It is considered as a process of identifying ideas that may further be converted into some successful businesses [30]. Singh [31] opines that OR is the ability of an individual to discover, recognize and make the concepts clear about any idea of venturing into a new business. OR is a cognitive phenomenon of the personality of any entrepreneur which helps him/her and plays an important role in his/her entrepreneurial decisions.

Various sources of information make things easy for entrepreneurs in the whole process of OR [32] yet entrepreneurs must have access to suitable and reliable sources of information to further their skills of execution. Recognizing the entrepreneurial opportunities is a crucial initial step of entrepreneurship and it becomes more important for students and young executives who want to be an entrepreneur in the early stage of their careers. OR lays down the foundation of new entrepreneurial ventures by identifying the potential opportunity [33] and the required skill set for

the execution of that opportunity. Based on the literature review, authors have positioned that individuals or students who have better ability to recognize the potential new business opportunities, are likely to be an entrepreneur and therefore the authors have proposed the hypothesis H3.

H3: students' power of opportunity recognition (OR) significantly affects their entrepreneurial intention (EI).

2.1.4. Risk-Taking Propensities (RTP). RTP is generally considered as a personality trait of any individual [23] and the level of this trait may change over time depending on the situation. Individuals' behavior towards taking or avoiding risk is majorly controlled by their RTP. It was argued in many studies that RTP is linked with rewards and probability of success of a planned event/venture while RTP is one of the measures of ability to take risks. Risk-taking is a defining trait of entrepreneurs as such any new entrepreneurial venture is generally considered to be risky. Entrepreneurs may face financial, social, or psychological risks even before starting a new venture [34]. RTP of individuals may affect their decisions at any stage of creation and running a new venture. That is why risk-taking orientation is assumed as a characteristic of the development process of entrepreneurship and as an inbuilt trait of entrepreneurs' personalities. People generally hate to take risks but these can be categorized into two categories, the first one is less risk-averse, and the second is more risk-averse. Less risk-averse people become an entrepreneur and more risk-averse become employees. Thus, this is understood that situational factors play a crucial role in the transition of RTP into the risk-taking behavior of entrepreneurs [35]. Despite all these facts, entrepreneurs are considered moderate risk-takers by most researchers. Considering the literature under discussion, the authors wrote the fourth hypothesis as follows:

H4: students' risk-taking propensities (RTP) significantly affect their entrepreneurial intention (EI).

2.1.5. Entrepreneurship Education (EE). Entrepreneurship is a dimension of students' EO that helps in shaping/developing students' EI [36]. Fayolle et al. [37] explain EE as "any pedagogical program or process of education for entrepreneurial attitudes and skills." Linan, and Fayolle [38] states that EI is considered as the direct result of the EE. It also improves the entrepreneurial attitude and the perceptions of the students. They further describe that EE has a positive influence on students' EI. Effective education of entrepreneurship attracts and enhances the interest of individuals toward an entrepreneurial career. EE may further help the students in stimulating and uncovering their hidden entrepreneurial potential. Some of the earlier studies shed light on the issues coming with EE. Bae et al. [39] in their meta-analytic review, deal with a larger sample and find that EE and EI have a significant yet very low correlation. In another study, researchers come to know that, without proper support, the impact of the EE on the EI of students may be short term and entrepreneurial sustainability cannot be achieved merely by just providing entrepreneurial education if the other supports are not available for the students. Based

on the literature discussed, the authors found that EE may influence individuals' EI positively by enhancing their OR, RTP, and other EDs. Thus, authors have proposed the fifth (H5) hypothesis as follows:

H5: entrepreneurship education (EE) of students significantly affects their entrepreneurial intention (EI).

2.2. Moderation Effect

2.2.1. Moderation Effect of Entrepreneurship Education (EE) (H6). EE remains a matter of conflict for the scholars of two different schools of thoughts. The disagreement is concerning the issue of whether EE moderates the relationships of EDs with EI positively or not. Those scholars who support the personality trait theory of entrepreneurship (TTE) go with the generalized fact that EDs are the personality traits of individuals. They understand that EDs are inborn/inherited characteristics (traits) of entrepreneurs that may not be developed by using EE or through training programs [40]. On the other hand, some scholars oppose TTE and go with the fact that an adequate level of EE may improve the EDs or entrepreneurial personality traits of the entrepreneurs [41]. More studies supporting EE as a driver of EI among University students ([42, 43] are available. While some studies also provided proof that EE dampens the positive relationship of EDs with EI [16, 44].

Considering the conflicting nature of the discussed literature about the moderating role of EE towards EDs, the authors decided to go with the fact that EE positively moderates the relationships of EDs with EI and proposed the sixth (H6) hypothesis as:

H6: students' entrepreneurship education significantly affects the relationship of their entrepreneurial dimensions and entrepreneurial intention.

It is to be noted that the authors have accepted four important entrepreneurial dimensions into consideration to check the moderation effect of EE. Therefore hypothesis six (H6) has further been subdivided into four hypotheses which are as follows:

- (i) H6a: students' entrepreneurship education (EE) significantly affects the relationship of their innovativeness (INV) and entrepreneurial intention (EI)
- (ii) H6b: students' entrepreneurship education (EE) significantly affects the relationship of their need for achievements (NAF) and entrepreneurial intention (EI)
- (iii) H6c: students' entrepreneurship education (EE) significantly affects the relationship of their opportunity recognition (OR) and entrepreneurial intention (EI)
- (iv) H6d: students' entrepreneurship education (EE) significantly affects the relationship of their risk-taking propensity (RTP) and entrepreneurial intention (EI)

2.2.2. Moderation Effect of Gender (GEN) (H7). Various gender-based empirical studies in the past have shown that women are not as intent as men when it comes to

entrepreneurship (Anwar and Saleem, 2019; [45]. Confirming the role of gender in the research dealing with EE, EDs, and EI, Robledo et al., [46] state that the relationships among various predictors (predicting variables or independent variables) and EI (as dependent variable or criterion) are stronger among men than women.

Verheul [47] has also studied gender-based studies and revealed that males are found better in searching, recognizing, and adapting new opportunities to convert them finally into real entrepreneurial ventures but females did not prefer entrepreneurship comparatively. Thus, considering the interaction effect between predictors (EDs) and criterion (EI), which is stronger among males than females, authors have postulated the seventh (H7) hypothesis as follows:

H7: moderation effect of gender (GEN) negatively affects the relationships of students' entrepreneurial dimensions (EDs) and their entrepreneurial intention (EI).

Hypothesis 7 (H7) has further been subdivided into four new hypotheses to check the moderation effect of GEN on the relationships of underlying EDs with EI.

- (i) H7a: moderation effect of gender (GEN) negatively affects the relationship of students' innovativeness (INV) and their entrepreneurial intention (EI).
- (ii) H7b: moderation effect of gender (GEN) negatively affects the relationship of students' need for achievements (NAF) and their entrepreneurial intention.
- (iii) H7c: moderation effect of gender (GEN) negatively affects the relationship of students' opportunity recognition (OR) and their entrepreneurial intention (EI)
- (iv) H7d: moderation effect of gender (GEN) negatively affects the relationship of students' risk-taking propensities (RTP) and their entrepreneurial intention (EI)

3. Research Methodology

In the present study, the authors used some of the important entrepreneurial dimensions (EDs), namely, innovativeness (INV), need for achievements (NFA), opportunity recognition (OR), and risk-taking propensities (RTP) as an independent variable (IV). Entrepreneurship education (EE) was used, both as IV and moderating variable (MV), while gender (GEN) was used only as an MV. Entrepreneurial intention (EI) was used as a dependent variable (DV) (Figure 1).

Cross-sectional data were collected through the convenience sampling method [48]. 489 students of the Business stream from Jamia Millia Islamia University were selected to fill out the questionnaire. Out of the 489 students, 330 were graduate-level students and 159 were postgraduate level students. Out of 489, only 373 filled questionnaires (255 from graduate-level students and 118 from postgraduate level students) were found to be complete in all respect. Further, only 347 filled questionnaires (244 from graduate-level students and 103 from postgraduate level students) were found to be suitable for further analyses of the data and

as such were the final sample size of the study. Out of 347, a total of 217 male and 126 female students were there. A population of over 2000 students can be presented by a final sample size of 347 [49]. The sample size was acceptable as there are approximately 1200 students of Business and Management courses in Jamia Millia Islamia.

Authors found it rationale to collect the data only from one university as the syllabi of different universities may be different and that may create some biases in the data [50]. Target respondents were only from Business and Management courses to explore the research questions under this study [51–53].

3.1. Questionnaire Development. A scale was developed by the authors after adapting the constructs EE and EI from a well-known, widely accepted measurement scale “Entrepreneurial Intention Questionnaire” (EIQ) of Linen and Chan [48]; Construct OR was adapted from the study of Ozgen and Baron [54]; INV, and RTP were adapted from Bolton and Lane's [55] Individual Entrepreneurial Orientation questionnaire while NFA as a variable was supported by Zaffane [56]; Ryan et al. [57]; and S. Wu et al. [58].

Gender [GEN] was also used as a construct (Moderating variable) in the study. All constructs (except GEN) are measured on a 5-point Likert type scale where 1 stands for strongly disagree and 5 for strongly agree. For establishing the reliability and validity of the content of the questionnaire, it was circulated among experts including university professors engaged in entrepreneurship academia and research before sharing it with targeted students. Finally constructs INV, NFA, OR, RTP and EI were measured on three items scale (three observed items for each construct) while construct EE was measured on four items scale. These six constructs collectively made a total of nineteen items (observed statements) (Table 1). Six items, namely, “Gender,” “Qualification,” “Age,” “Current Status of Education,” “Daily Time spent on Internet,” and “Online Activities,” were also part of the questionnaire.

3.2. Data Screening. Before moving to statistical analyses, a proper check of missing values and outliers was carried out through data screening. After removing the missing value responses, a total of 347 responses were found suitable for further statistical analyses [59, 60]. Dataset also met the adequacy level [61] of the minimum sample of 190 (as per the recommended no of responses for each item observed is 10 [60]). Kurtosis and Skewness that are generally checked to assess the Normality of the data set, were not measured due to the use of the Likert-type scale. Normality is also not required to be checked for studies using Smart PLS 3.0 for the analysis of data [62].

The data for the independent (predictor) variables and dependent (criterion) variables were collected simultaneously which was not according to the recommendations of [63]. But to reduce the common method biases (influence), target respondents were well informed about the purpose and the variables being used in the study. Furthermore, considering that partial least square-based software

TABLE 1: Scale of measurement.

Latent variable (construct name)	The scale of measurement (observed variable)	Sources	
Risk-taking propensities	RTP-1 I Prefer to go with bold actions to venture into the unknown	Adapted from Boltan and lane's individual entrepreneurial orientation questionnaire (IEO)	
	RTP-2 I like to invest my money and time on projects that might provide a higher return		
	RTP-3 I take bold steps in risky conditions		
Innovativeness	INV-1 I often prefer to go for new and uncommon events which are not certainly risky		
	INV-2 I generally focus on unique projects which target unique approaches, instead of focusing on the tried and tested approaches used earlier.		
	INV-3 I Prefer experiments and new approaches to problem-solving		
Opportunity recognition	OR-1 I observe a lot of opportunities for starting and growing a business		Adapted from Ozgen and Baron [54]
	OR-2 I have a good sense of new business ideas		
	OR-3 During my daily activities, I find many potential new venture ideas		
Need for achievement	NFA-1 I Consider myself an achiever who always dreams to achieve something big in business		Based on Zaffane [56]; Ryan et al. [57], S. Wu et. al [58]
	NFA-2 I like to set the targets to achieve them.		
	NFA-3 I generally care about the deadlines of the projects		
Entrepreneurial education	EE-1 University education can help me in recognizing the entrepreneurial opportunities	Based on Linen and Chan's entrepreneurial intention questionnaire (EIQ), (2009) [48]	
	EE-2 University education courses can help me prefer to be an entrepreneur		
	EE-3 University education can help me in developing the required skills and abilities to be an entrepreneur		
	EE-4 University education may help in improving my entrepreneurial intention		
Entrepreneurial intention	EI-1 I Can do everything for becoming an E-entrepreneur		
	EI-2 My life's ultimate goal is to be an E-entrepreneur		
	EI-4 I have a determination to start an E-venture in future		

“SmartPLS” cannot use Harman’s one-factor test (of common method biases), researchers used a full collinearity approach to confirm the biases of data. According to this approach, if a full collinearity test provides the values of all VIFs equal or less than 3.3 [64], the model can be considered free from common method bias. In the present study, all the values of inner VIFs are found under the acceptable range as they appeared in the green color in SmartPLS.

4. Data Analyses and Results

The data analyses were performed using SmartPLS 3.0 software. Structural Equation Modelling (SEM) was performed to evaluate the measurement model [65] by checking out the validity, reliability, and other important fit indices in Section 4.1. Path Analysis was conducted in the Structural Model in Section 4.2 to test the direction and significance level of the paths for underlying hypotheses, Figure 2 (Figure 3).

4.1. Measurement Model: Validity, Reliability, and Fit Indices. A Path Model was prepared in the initial stage of analyses to evaluate the measurement model without considering the moderation effect of EE and GEN (Figure 2) and a PLS Algorithm was run to get the values of different indicators of the measurement model as discussed below.

- (i) Reliability: all the underlying constructs were found reliable as the values of their Cronbach’s Alpha and composite reliability (CR) are higher than their minimum value required, i.e., 0.70 (refer to Table 2) [66].
- (ii) Convergent validity: average variance extracted (AVE) of every construct was found more than its threshold limit of 0.5 and the average of factor loadings of every construct was higher than its minimum value required, i.e., 0.708.
- (iii) Source: extracted from SmartPLS calculations. Both of these indicators confirmed the convergence of

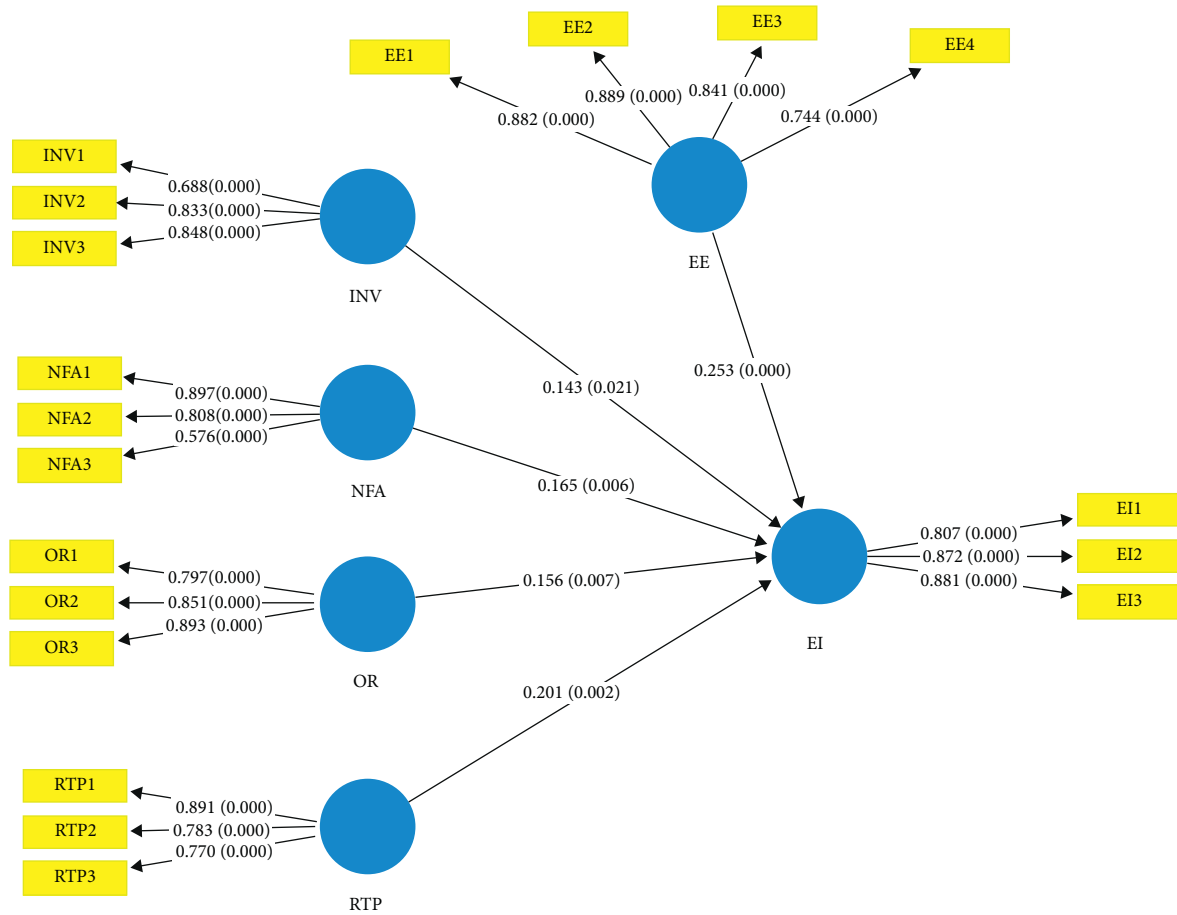


FIGURE 2: Graphical presentation of the Entrepreneurial Intention model understudy. Source: extracted from SmartPLS.

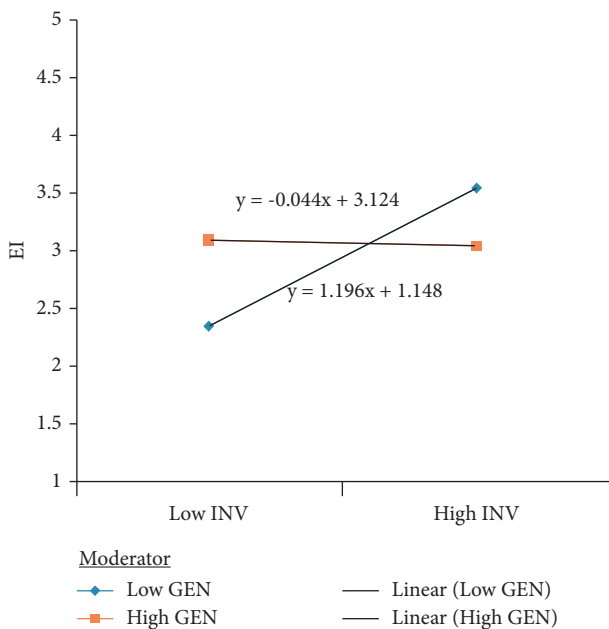


FIGURE 3: (Graphical presentation of moderation effect of GEN on INV). GEN diminishes the positive relationship between INV and EI.

individual items with their respective construct (Refer to Table 2) [66].

- (iv) Discriminant validity: authors used Fornell–Larcker criterion (refer to Table 3), cross-loading values (refer to Table 4), and Heterotrait Monotrait Ratio (HTMT, refer to Table 5) to assess the discriminant validity. It was found that these three indicators approved and established the discriminant validity of the constructs in the present model of the study as follows.

Table 3 presents the square root of “average variance extracted” (AVE) for every construct (given in bold and italic in Table 3) is higher than its correlation with another construct while Table 4 shows that correlation of measurement items with their associated latent variable (shown in the bolds in Table 4) is greater than the correlation with another latent variable.

The HTMT ratio is close to 1 which represents a lack of discriminant validity and the threshold values of the HTMT ratio to establish discriminant validity are 0.85 according to Kline [60] and 0.90 according to Gold et al. [67]. HTMT ratio also approves the discriminant validity of all the constructs in the present study as values in Table 5 are far below its threshold value of 0.85.

TABLE 2: Reliability and convergent validity.

Constructs	Average of CFA factor loadings	Cronbach's alpha	Composite reliability	Average variance extracted (AVE)
Entrepreneurship education	0.839	0.860	0.906	0.701
Entrepreneurial intention	0.853	0.709	0.826	0.561
Innovativeness	0.789	0.708	0.834	0.628
Need for the achievements	0.760	0.709	0.804	0.587
Opportunity recognition	0.846	0.807	0.884	0.718
Risk-taking propensities	0.814	0.763	0.858	0.670

TABLE 3: Fornell-Larcker criterion

	EE	EI	INV	NFA	OR	RTP
EE	0.841					
EI	0.381	0.854				
INV	0.193	0.378	0.793			
NFA	0.163	0.382	0.384	0.772		
OR	0.291	0.393	0.412	0.336	0.848	
RTP	0.139	0.372	0.289	0.339	0.24	0.817

Source: extracted from SmartPLS calculations.

TABLE 4: Cross loadings.

	EE	EI	INV	NFA	OR	RTP
EE1	0.882	0.32	0.185	0.098	0.259	0.131
EE2	0.889	0.358	0.195	0.139	0.303	0.1
EE3	0.841	0.315	0.138	0.154	0.231	0.096
EE4	0.745	0.282	0.123	0.163	0.174	0.147
EI1	0.353	0.805	0.283	0.27	0.302	0.204
EI2	0.302	0.871	0.266	0.345	0.312	0.338
EI3	0.326	0.883	0.404	0.355	0.382	0.389
INV1	0.106	0.28	0.688	0.343	0.291	0.237
INV2	0.198	0.271	0.833	0.318	0.348	0.259
INV3	0.156	0.34	0.848	0.262	0.34	0.2
NFA1	0.14	0.409	0.303	0.897	0.322	0.322
NFA2	0.141	0.247	0.37	0.808	0.239	0.252
NFA3	0.1	0.1	0.246	0.576	0.191	0.173
OR1	0.241	0.25	0.399	0.346	0.797	0.166
OR2	0.269	0.333	0.301	0.218	0.850	0.156
OR3	0.236	0.391	0.365	0.309	0.893	0.271
RTP1	0.11	0.403	0.274	0.368	0.245	0.891
RTP2	0.046	0.24	0.163	0.165	0.106	0.783
RTP3	0.206	0.207	0.266	0.248	0.22	0.770

Source: extracted from SmartPLS calculations.

TABLE 5: Heterotrait monotrait ratio (HTMT).

	EE	EI	INV	NFA	OR	RTP
EE						
EI	0.456					
INV	0.248	0.489				
NFA	0.207	0.413	0.557			
OR	0.347	0.467	0.557	0.426		
RTP	0.184	0.426	0.394	0.404	0.286	

Source: extracted from SmartPLS calculations.

TABLE 6: Model fit indices.

	SRMR	d_G	NFI	d_ULS	Chi-square
Study values	0.079	0.309	0.655	0.843	473.311
Recommended value	<0.08	<1	<1	<1	Valid

Source: extracted from SmartPLS calculations.

TABLE 7: Hypotheses testing of H1, H2, H3, H4, and H5.

Hypothesis	Hypothesized relation	Standardized estimates	T statistics	Hypothesis decision
H1	INV → EI	0.143	2.309	Accepted **
H2	NFA → EI	0.165	2.747	Accepted *
H3	OR → EI	0.156	2.694	Accepted *
H4	RTP → EI	0.201	3.151	Accepted *
H5	EE → EI	0.354	4.233	Accepted *

* 1% significance level, ** 5% significance level. Source: extracted from SmartPLS calculations.

TABLE 8: Moderation effect (hypotheses testing of H6, and H7).

Hypothesis	Hypothesized relation	Standardized estimates	Hypothesis decision
H6a	INV * EE → EI	0.069	Accepted **
H6b	NFA * EE → EI	-0.161	Rejected
H6c	OR * EE → EI	0.081	Accepted **
H6d	RTP * EE → EI	0.088	Accepted **
H7a	INV * GEN → EI	-0.31	Accepted **
H7b	NFA * GEN → EI	0.30	RejectedNS
H7c	OR * GEN → EI	-0.091	Accepted **
H7d	RTP * GEN → EI	0.083	RejectedNS

Source: extracted from SmartPLS calculations.

4.1.1. *Model Fit Indices in SmartPLS 3.0.* SmartPLS 3.0 software uses a different set of model fit indicators to show whether the data is fit to the model. It uses SRMR (0.079), d_G (0.309), NFI (0.655), d_ULS (0.843), and Chi-Square as model fit indicators. Based on the values of underlying indices (Table 6), it was referred that data were adequately fit to the model to conduct the study. No threshold value is provided for the Chi-square indicator, as the value of this indicator is always based on the degree of freedom and it is 473.11 for this study which is acceptable for this study as it was shown in green color in SmartPLS.

4.2. *Hypotheses Testing.* The study uses Path Analysis using Structural Equation Modelling for testing the proposed hypotheses in two stages. In the first stage, hypotheses H1, H2, H3, H4, and H5 respectively showing the relationship of INV, NFA, OR, RTP with EI, were tested (Figure 2 and Table 7). In the second stage, hypotheses underlying the moderation effects of EE on INV (H6a), NFA (H6b), OR (H6c), RTP (H6d), and the moderation effect of GEN on INV (H7a), NFA (H7b), OR (H7c), and RTP (H7d) were tested [68].

4.2.1. *Testing of Hypotheses H1, H2, H3, H4, and H5.* Standardized beta coefficient (standardized estimates) of all 5 hypotheses (H1 to H5) are found positive with a maximum value of 0.354 (beta between EE and EI) and a minimum

value of 0.143 (beta between INV and EI). The minimum value of T statistics (2.309) is found between INV and EE that supports the path at a 5% significance level. Values of T statistics for H2, H3, H4, and H5 are 2.747, 2.694, 3.151, and 4.233, respectively, support the path of these hypotheses significant at a 1% significance level (Table 7). Hence, hypotheses H1 to H5, supported by positive beta coefficients and significant paths either at 5% (H1) or 1% significance level, are accepted.

4.3. *Moderation Effect of Entrepreneurship Education as Moderating Variable (H6a, H6b, H6c, and H6d).* After finding the results of testing hypotheses (H1 to H5) defining the relationship between EDs (INV, NFA, OR, RTP, and EE) and EI, researchers moved on to test the moderation (Interaction) effect of two moderating variables, namely, EE and GEN, on the relationships of EDs (INV, NFA, OR, and RTP) with EI as per the underlying hypothesis H6 (H6a, H6b, H6c, and H6d) for EE and H7 (H7a, H7b, H7c, and H7d) for GEN.

Using a two-tailed (test type), bias-corrected and accelerated (BCa) (confidence interval method) and at a significance level of 5%, Bootstrapping technique (in SmartPLS 3.0) at 5000 subsamples were used to check the moderation effect of EE [69]. As reported in Table 8, hypothesis H6b (NFA * EE to EI) was rejected because it has a negative path coefficient (-0.161, standardized estimate/beta) showing the negative correlation between NFA and EI

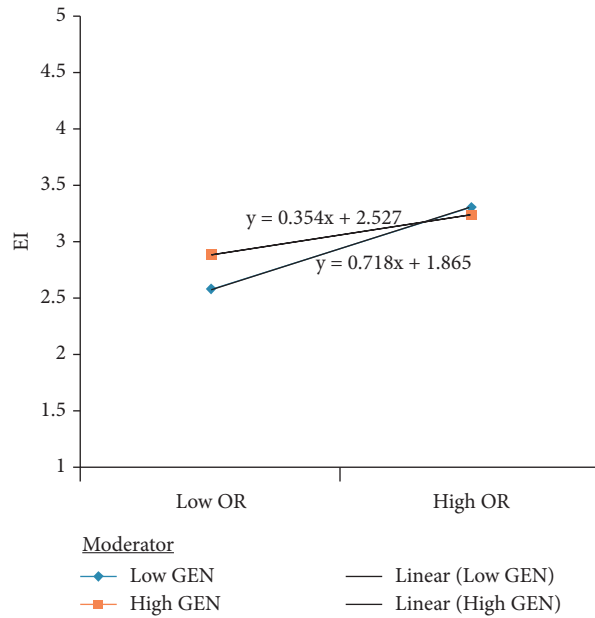


FIGURE 4: (Graphical presentation of moderation effect of GEN on OR). GEN diminishes the positive relationship between OR and EI.

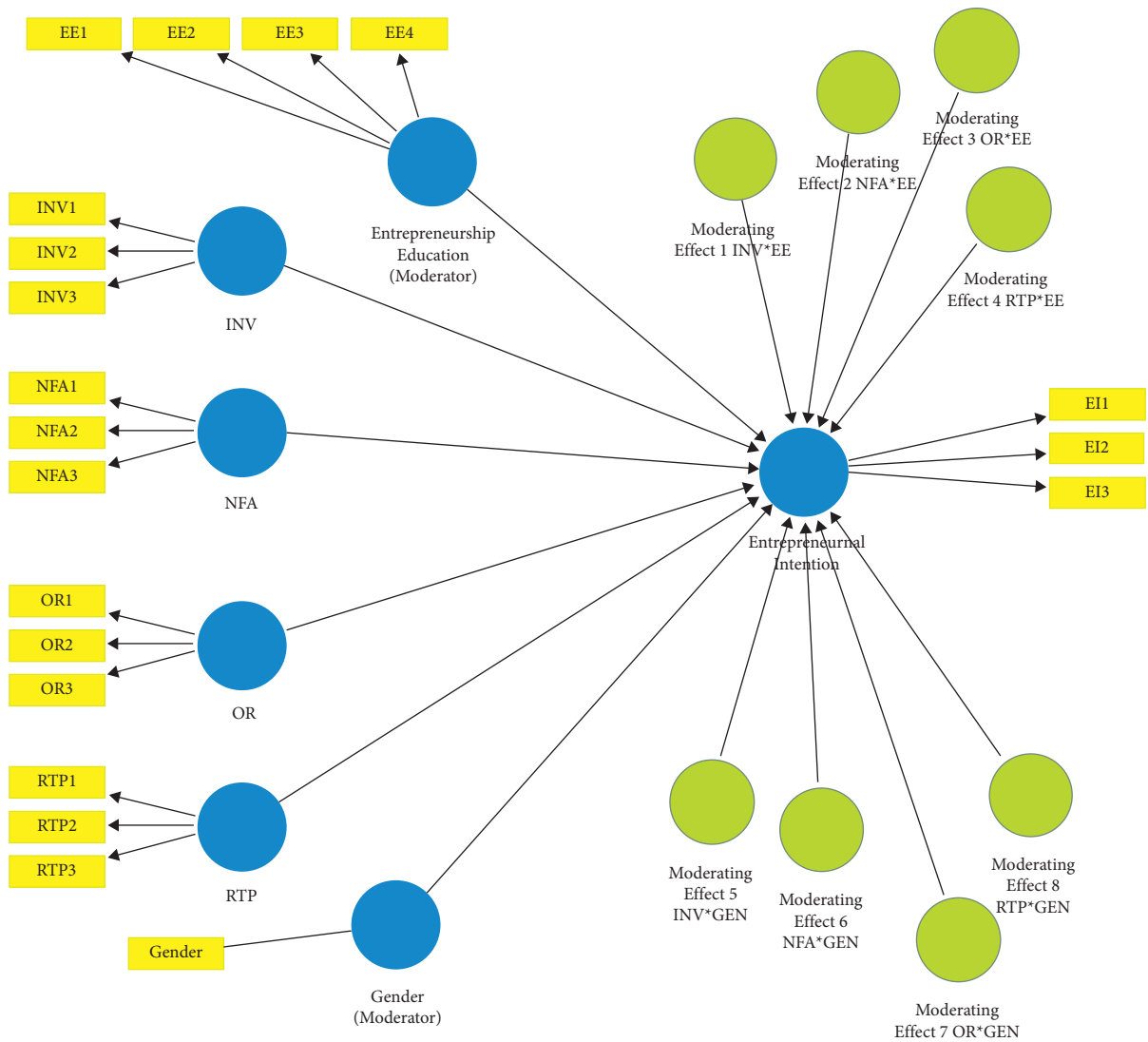


FIGURE 5: Graphical presentation of the model under study, also showing moderation effect of EE and GEN. Source: Extracted from SmartPLS Software after analysis of data.

in the presence of EE. In this case, discussion about the significance level of the path (NFA * EE to EI) becomes irrelevant as hypothesis H6b was rejected on the 1st step of hypothesis testing where the value of the beta (standardized estimate) was assessed and it should be positive to show the positive moderation effect of EE on the NFA to EE path as hypothesized in the hypothesis H6b but it was found negative with a value -0.161 .

Though the values of standardized estimates in case of hypotheses H6a (0.069), H6c (0.081), and H6d (0.088) were very less yet they were found positive showing a positive interaction effect of EE on the relationships of INV to EI, OR to EI and RTP to EI respectively as hypothesized. Having positive values of beta, hypotheses H6a, H6c, and H6d are accepted as their respective paths are found significant at a 5% significant level.

4.4. Moderation Effect of Gender as Moderating Variable (H7a, H7b, H7c, and H7d). The moderation effect of EE and GEN were measured separately because it was required to use a different set of settings in the background to check the moderating (interaction) effect of gender (GEN) in SmartPLS3.0 software as GEN is a categorical variable. When the latent variables (moderating effect 5, 6, 7 and 8: refer to Figures 4 and 5) were created in structural equation model (SEM) to show the moderating effect of GEN (Figure 3), it was advised to use “unstandardized” product term generation in the advanced settings while in case of EE, standardized product term was used [68]. Then, after running a bootstrap for GEN, a one-tailed test type was used instead of two-tailed [69]. The rest of the settings were unchanged.

Beta coefficient (Standardized estimates) of the paths of hypotheses H7b (0.30) and H7d (0.083), reflecting the interaction effect of NFA * GEN to EI and RTP * GEN to EI respectively were found positive which shows that GEN positively moderates the relationships of NFA to EI and RTP to EI hence H7b and H7d were rejected because it was hypothesized that GEN negatively moderates the relationship of NFA to EI (H7b) and RTP to EI (H7d). While hypotheses H7a (INV * GEN to EI) and H7c (OR * GEN to EI) were accepted as their beta values are -0.31 and -0.091 which shows that GEN negatively moderates (Figures 4 and 5) the relationship of INV to EI and OR to EI respectively and paths of both of the hypotheses H7a and H7d were found significant at 5% significance level [70].

5. Discussion and Conclusion

Enhancing the level of Entrepreneurship Intention [EI] among the students is a must-to-do step because when these targeted students come out from their institutions and translate their EI into actual behavior, it ultimately leads to great economic empowerment for the country. A myth will always be there in the air that entrepreneurs are not made but born and some studies also presented the negative correlation between EE and EI [71, 72]. Contrary to this, researchers have also found that many perceived traits of an

entrepreneurial personality can be modified or improved through EE (Ajzen, 1991; [73]). The present study also supports earlier studies. It is found that EE is highly correlated with EI (Figure 2). Many researches have observed the role of the other dimensions of EO by fitting them in EI models taking the aspects like contextual or individual perception into consideration on the one hand and exogenous variables like prior entrepreneurial experience or role models' exposure on the other hand [74, 75].

Adding values in the current literature and setting the foundation of future researches, the present study attempted to show how EDs, likely NFA, INV, RTP, and OR, are related to EI and how EE and GEN moderates the relationships or underlying EDs with EI. All EDs under this study is found positively correlated with EI and significantly improve the EI of students. Out of all these, INV which is considered as one of the most cited, accepted, and important traits of entrepreneurs are also considered as a major predictor of EI.

The relationship of NFA with EI is also found positive as it was also revealed by earlier researchers that a high need for achievement is the common trait of entrepreneurs (McClelland, David C. and [27, 56]). OR which has been taken as an important dimension of students' entrepreneurial orientation in this study, has become part of some of the models in the earlier studies also [54]. Few of the previous studies found contradicting results while studying the relationship between OR and EI. Puni et al. [53] and Mahmood et al. [76] presented OR as an antecedent to predict the EI of individuals while the studies of Asante and Affum-Osei [73] and Jarvis [77] concluded OR as a successor to EI. The present study also contributes to the literature available on OR by taking OR as an ED along with NFA, RTP, and INV to study their relationships with EI while also measuring the moderating effect of EE and GEN on these relationships. This study found that OR has a very high correlation with EI and better OR positioning of an individual student may help in enhancing the overall level of EI [2]. Risk-taking propensities of any individual is an ever-changing capability that may be changed over a while and can be considered situational as it may vary as per the changes in the business environment of the country [78]. In this study also, RTP has been found highly correlated with EI and it helps students further enhance their entrepreneurial intention.

In the second stage of analysis of sample data, researchers went through moderation effects of EE over the relationships and it is found that EE positively moderates the relationships of RTP, OR, and INV with EI but it does not moderate the relationship of NFA with EI positively. Results of the analysis showed that the influence of RTP, OR, and INV on the EI of the students was improved significantly with the level of entrepreneurship education increased by 6.90%, 8.1%, and 8.8% respectively. It is also evident from the study that EE boosts the perceived level of RTP, OR, INV, and EI directly on the one hand and make the relationships of RTP, OR, and INV with EI strong on the other hand. Therefore it can be concluded that EDs may enhance the EI of individual students if the level of EE is proper and adequate. Practically it means that if an individual thinks that

he/she can start a new entrepreneurial venture or if he/she trusts that his/her competencies are enough to start a new business, then entrepreneurial education may increase her EI further to finally start a new venture [79].

Along with the moderating effects of EE, the present study also explores the moderating effects of GEN over the relationships of EDs with EI. The relationships of INV and OR with EI are found weaker for females by 31% and 9.1% respectively than males. Accordingly, it can be concluded that, on the one hand, women are less adaptive while searching for potential entrepreneurial opportunities than men, and on the other hand, show lesser innovativeness because of lack of industrial exposure. Thus the perceived level of OR and INV among female students is very weak. That further leads to a lesser impact on their entrepreneurial intention and supports the earlier studies. While the moderating influence of GEN over the relationships of RTP and NFA with EI went in the opposite direction and showed results that contradicted the earlier studies. It was found that the relationships of RTP and NFA with EI are found stronger for females by 8.3% and 30% respectively than males. Based on the results, it can be concluded that female students performed better than male students when it comes to RTP and NFA. [68, 80].

6. Practical and Academic Implications of the Study

The present study surely adds value on many fronts say in academia, policymaking, entrepreneurial practices. It is found that entrepreneurial intention is linked with cognitive traits like INV, RTP, NFA, and OR along with a direct positive relationship between EE and EI. It is also found that EE serves as a booster and plays an important role in enhancing the relationships of the majority of the cognitive traits with EI. Therefore it is implied here that the systematic use of EE may turn up as a booster to nurture the entrepreneurial intention among students. Existing entrepreneurs may also learn about their strengths and weaknesses and promptly go through some entrepreneurial courses to improve their weaknesses or enhance the level of their strengths further.

It is also found that Gender [GEN] negatively moderates the relationships of Innovativeness [INV] and Opportunity Recognition [OR] with EI. In other words, it can be implied that male students are more entrepreneurially intent and linkage of their innovativeness and power of recognizing the entrepreneurial opportunity with their EI is better than female students. This apparent gap between male and female students is due to many exogenous factors like level of exposure to the outside world, size of the social network, connection, or networking with existing entrepreneurs. Policymakers and the academic sector may work in this direction to fill this gap between female and male students by changing the current form of entrepreneurship courses which may increase the entrepreneurial exposure of the female students, enhance their networking with existing successful male and female entrepreneurs. This study further helps and supports in designing and initiating new educational or entrepreneurship projects for the students.

7. Limitations of the Study and Scope of the Future Research

The present study used the sample data collected from only one Jamia Millia Islamia (JMI) University. Though JMI is a big and renowned central university that has a pool of students coming from different parts of the country presenting the heterogeneity at many levels say it cultural, religious, etc. yet this limitation provides the scope for further studies which may be based on the larger sample size collected from many universities or it creates the scope of comparative studies between two or more universities or regions of the country.

Data that was used in this study comprises the responses only from the students of business and its allied subject. Students of other backgrounds including engineering were left out from the scope of the study. This limitation in itself creates the scope for further research which may be a comparative study of business and nonbusiness students.

The study has used only four traits (namely, INV, NFA, OR, and RTP) as variables among many cognitive traits of entrepreneurial personalities of entrepreneurs to study the relationships with EI. This limitation of the study opens the door for future researchers to take many other cognitive or contextual factors into the consideration to link all these with entrepreneurial intention.

Although this study has shown the results of the moderation effects of entrepreneurial education over the relationships of cognitive traits of entrepreneurs with their EI yet the study has not covered the mediation effect of EE which may be considered its fourth limitation and future researchers may explore these angles also.

Entrepreneurial inclination, an important factor of entrepreneurial orientation of any individual was kept out of the scope of this study. This factor may be used in future studies to check the significant differences between the cognitive traits of the students with high levels and low levels of entrepreneurial inclination [7].

Last but not least limitation is using cross-sectional data/design for the current study. It means that researchers have recorded all the responses at a particular point in time and that leads to the possible differences in estimated and actual entrepreneurial behaviors because the independent variables and dependent variable (EI) may provide different results over the period of time. To deal with this limitation, it is suggested to future researchers to conduct a longitudinal study which may easily deal with this limitation by providing a better understanding of interaction effects among independent variables and entrepreneurial intention (EI)

Data Availability

The quantitative data used to support the findings of this study are available from the corresponding author upon request.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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