

Understanding the relationship between entrepreneurship education, entrepreneurial attitudes, and entrepreneurial intentions among engineering graduates: the moderating role of gender

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Abstract

Purpose – The current study assesses the contribution of entrepreneurship education (EE) in strengthening entrepreneurial attitudes (EAs) and entrepreneurial intentions (EIs) among engineering graduates in India.

Design/methodology/approach – Cross-sectional data were collected through an electronic questionnaire from 340 engineering students. Structural equation modeling was performed for hypothesis testing through SmartPLS4 software.

Findings – The findings demonstrated that EE, EA and EI are positively and significantly correlated. However, the moderation effect of gender on EE–EI linkage was found to be insignificant.

Research limitations/implications – The study provides comprehensive insights to understand EE effectiveness on students' EI and further opens the path for future researchers to investigate how the inclusion of other constructs in theory of planned behavior and human capital theory can raise the EI among students. Future research should target a larger sample size comprising students from diverse educational streams.

Practical implications – The findings of this research offer various practical contributions for educational establishments, policymakers and the government in formulating constructive educational interventions that fully trigger the student's EIs.

Originality/value – This study adds to the scarce theoretical examination of EE–EI using the human capital approach in developing countries. In addition, this study is highly relevant to the scarce theoretical and empirical support for investigating the contribution of EE in HEIs in India.

Keywords Entrepreneurship education, Entrepreneurial attitude, Entrepreneurial intention, Gender

Paper type Research paper

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Corrigendum: It has come to the attention of the publisher of the *Journal of Work-Applied Management* that the following article by Kaur, M. and Chawla, S. (2023), "Understanding the relationship between entrepreneurship education, entrepreneurial attitudes, and entrepreneurial intentions among engineering graduates: the moderating role of gender", *Journal of Work-Applied Management*, Vol. 15 No. 2. <https://doi.org/10.1108/JWAM-05-2023-0039>, included an incorrect layout in Figure 2 which made the data difficult to interpret. The correct Figure 2 has now been published in the article. The authors sincerely apologise to the readers for any inconvenience caused.

Declaration of interest: There is no conflict of interest between the authors.



1. Introduction

Entrepreneurs have invariably been acknowledged as the backbone of society for their enormous efforts to augment the standard of living embraced with innovativeness (Nowiński *et al.*, 2019; Ratten and Jones, 2020; Sergi *et al.*, 2019). In view of this, entrepreneurship education (EE) has now become the crucial educational intervention (Sánchez, 2013; Walter and Block, 2016), resulting in a radical growth in EE programs across HEIs along with an increase in scholarly work on the outcomes of EE (Bischoff *et al.*, 2018; Hoang *et al.*, 2021). EE enhances an individual's stock of knowledge, skills and competencies, thereby raising the entrepreneurial attitudes (EAs) and entrepreneurial intentions (EIs) among university graduates (Carpenter and Wilson, 2022; Uddin *et al.*, 2022). It has also been asserted that a knowledge base is crucial to develop the entrepreneurial potential of an individual, and thus, EE can create more and more able entrepreneurs (Katz, 2007; Pittaway and Cope, 2007). Numerous studies have advocated a positive and significant EE–EI association (Pisoni, 2019; Saptono *et al.*, 2020), while others found a negative linkage (Oosterbeek *et al.*, 2010) and others reported no association (Huber *et al.*, 2014; Varamaki *et al.*, 2015). These divergent outcomes showed significant gaps in the literature, which motivated the present study. Owing to the dynamic and interdisciplinary nature of EE, the field is still emerging and needs more inquiry (Ratten and Jones, 2020).

EE context differs due to geographical, regional and cultural differences across nations worldwide, and consequently, the country's entrepreneurial activities and outcomes vary due to differences in the local system, culture and resources (Sergi *et al.*, 2019). Thus, it calls for more exploration into socioeconomic development resulting from EE–EI association in developing economies such as the Philippines, India, Peru, Argentina, etc. (Morris *et al.*, 2020; Santos *et al.*, 2019). Thus, theoretical evidence provides much support to investigate the problem in the Indian context along with the fact that the infusion of EE into university education is relatively a young phenomenon in Indian HEIs (Chhabra *et al.*, 2021; Mukesh *et al.*, 2018). Statistics also support that India has the most favorable entrepreneurial ecosystem among developing economies along with a substantial increase in total early stage entrepreneurial activity from 5.30% in 2020–2021 to 14.4% in 2021–22 (*Global Entrepreneurship Monitor India Report 2021/22*, 2022). Hence, HEIs hold an immense role in sustaining a favorable entrepreneurial context by providing an inclusive entrepreneurial education framework in the country (Kennedy and Drennan, 2001; Roy *et al.*, 2017).

Hence, to address the gap and strengthen the literature on EE–EI relationship, the present study provides an inclusive framework that is grounded in the human capital theory (HCT) (Becker, 1964) and theory of planned behavior (TPB) (Ajzen, 1991). While gauging the literature, it was found that EE has got substantial recognition as a pathway to endorse attitudes, mindsets and intentions using the TPB framework (Cassol *et al.*, 2022; Duong, 2022). The human capital approach of entrepreneurship, which is under searched area in EE literature especially in developing countries, is based on the belief that skills, knowledge and competencies make an individual efficient in starting and managing a business (Fayolle *et al.*, 2006). Given this, EE is regarded as the most pervasive component of entrepreneurship specific human capital investment (Unger *et al.*, 2011; Martin *et al.*, 2013). In addition, entrepreneurship is a planned activity that needs some kind of attitudinal preparation or mindset towards entrepreneurship, considering it the most robust dimension of TPB (Arshad *et al.*, 2016; Kautonen *et al.*, 2013). Against this backdrop, the current study investigated the effect of two exogenous variables, i.e. EE and EA, on EIs. The selection of these exogenous variables endorses the casual connection considering EE as a starting point that transforms EA, which eventually leads to EI formation.

Furthermore, studies articulated that EI among males and females may be different (Pelegri and Moraes, 2022; Taneja *et al.*, 2023). Considering the gender-wise perspective, this study also explores how gender moderates EE–EI linkage. This gender issue is crucial as females are the underrepresented population in India, i.e. only 14% constitutes women's

entrepreneurial population (Taneja *et al.*, 2023); hence, this becomes a potential area to explore in the Indian scenario. Furthermore, it has also been observed that with the fast diffusion of EE across the world, the scope of EE has widened from merely a business school course to other educational streams (Karlsson and Moberg, 2013). It has been reported that engineering students are always interested in the creation of innovative and powerful companies in comparison to students from other streams (Roberts, 1991). They are primarily involved in technology-based startups that contribute substantially to new job creation and hence reduce the unemployment rates in the country (Barba-Sánchez and Atienza-Sahuquillo, 2018). The extant literature also noted the paucity of studies exploring students EI among engineering studies as the majority of the prior studies were conducted on business students or undefined population (Maresch *et al.*, 2016; Martin *et al.*, 2013). Furthermore, Rauch and Hulsink (2015) also stated the need for more academic inquiry into EE–EI across students from diverse disciplines specifically from science and engineering background. The integration of EE into engineering curriculum is relatively a new endeavor across technical institutions, and the literature on the outcomes of EE among engineering graduates is very thin (Mukta, 2018; Nair *et al.*, 2020). This also calls for investigating the EE and EI connect among the engineering students in India.

In light of this discussion, the current study seeks to address the following research questions:

- RQ1. How does entrepreneurship education influence students' EA and EIs across engineering students?
- RQ2. Does gender strengthen the relationship between entrepreneurship education and EIs?

The study outcomes provide valuable insights for policymakers, the government and institution administrators in formulating constructive educational interventions that help to build EI among students. The paper has been organized into five sections. Following the introduction, the second section describes the theoretical framework and hypothesis formulation for empirical testing. Then, the research methodology is presented in the third section. The results of the statistical analysis are presented in the fourth section. Finally, this fifth section culminates with implications, limitations and future research agendas.

2. Theoretical framework for hypothesis development

2.1 Underpinning theories

The conceptual model (Figure 1) of this study was based on assumptions of two theories, i.e. TPB and HCT. TPB is the most acclaimed theory that describes that entrepreneurial actions are largely influenced by intentions, where intentions are preceded by a personal EA, subjective norms and perceived behavioral control (Ajzen, 2011), whereas HCT assumes that competencies and knowledge can raise an individual's cognitive skills to perform tasks

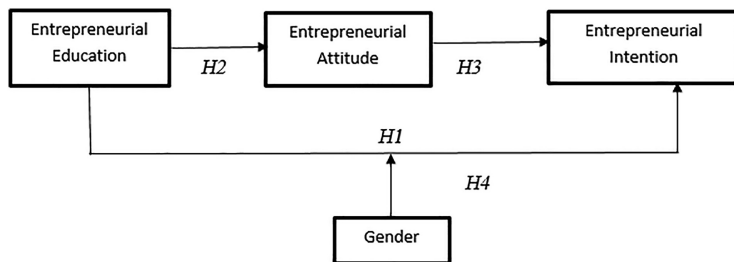


Figure 1.
The research
framework

Source(s): Authors' own work

constructively (Schultz, 1980; Becker, 2009). Human capital associated with entrepreneurship influences various stages of the entrepreneurial journey, such as opportunity recognition, business creation and business success (Marvel *et al.*, 2016). Researchers affirm that individuals with solid cognitive aptitude can perform entrepreneurial activities more efficiently than individuals with weak cognitive abilities (Schenkel *et al.*, 2012).

Education and its interventions constitute an essential element of human capital formation and are certainly a significant path for acquiring new competencies and knowledge (Martin *et al.*, 2013). Hence, when a person desires to commence a new venture, EE forms an important part of how that business will function (Douglas and Shepherd, 2002; Zhao *et al.*, 2005) as well as building one's entrepreneurial interests. It is noted that TPB concentrates on personality attributes such as attitude, self-efficacy and subjective norms as the potential predictors of EI (Krueger *et al.*, 2000), where the human capital approach was used to comprehend entrepreneurship where people deliberately allot their resources as a response to dynamic economic situations (Schultz, 1980), implying that entrepreneurial potential can be raised through human capital.

2.2 Hypothesis formulation

2.2.1 Entrepreneurial education and entrepreneurial intentions. EE refers to the process of developing theoretical foundations, skills and competencies to recognize opportunities that others are unable to notice (Mwasalwiba, 2010). A plethora of studies have reported EE as a mechanism to stimulate an individual's intention to start their own venture and promote economic development and business ventures (Nabi *et al.*, 2018; Sherkat and Chenari, 2020). EE programs help to reinforce mindsets, attributes and business competencies in students (Bae *et al.*, 2014; Nabi and Holden, 2008). Studies revealed that individuals who have gone through any EE program are better inclined toward venture creation than those who not have gone through any entrepreneurship course (Fitri Ayuni, 2018; Wardana *et al.*, 2020). Concurrently, the study exhibited negative findings indicating that the acquisition of formal education decreases the probability of the creation of new establishments (Abdullahi *et al.*, 2017).

In addition, the linkage between EE and EI was verified based on entrepreneurial HCT (Saptono *et al.*, 2020). According to HCT, education forms a part of intellectual capital that significantly influences the EI of an individual (Jogaratnam, 2017). In addition, limited studies exist in the Indian context that advocate the linkage between these two constructs (Biswas and Verma, 2022; Rajan and Panicker, 2020). Thus, the following hypothesis was formulated from this discussion:

H1. EE and EI are positively and significantly related.

2.2.2 Entrepreneurship education and entrepreneurial attitude. EA is a crucial force behind the creation of new ventures (Amofah and Saladrignes, 2022; Yarimoglu and Gunay, 2020), and the educational process involved in developing this attitude is known as entrepreneurial education (Li and Wu, 2019). This education has received acknowledgment from researchers and has become an important point of discussion in the entrepreneurship field. HEIs enable students to build their knowledge and abilities and nurture the opportunities to choose entrepreneurship as an alternative occupation (Ratten and Jones, 2021). The EE phenomenon provides several interpretations that can affect EAs including innovation, risk-taking capacity, independence, creativity and venture creation (Ratten and Jones, 2020). Moreover, the attitude is a crucial aspect in EI analysis as the emotional element is implicitly involved in entrepreneurial actions. Students who are exposed to EE have a better entrepreneurial disposition than those who did not (Heuer and Kolvereid, 2014). From these arguments, the following hypothesis is proposed:

H2. EE and EA are positively and significantly related.

2.2.3 Entrepreneurial attitude and entrepreneurial intentions. EA refers to the combination of psychological attributes that determine intentions that are likely to be transformed into entrepreneurial actions (Ajzen, 2011). EA communicates an individual's intention to create a new venture (Ayalew and Zeleke, 2018; Nguyen *et al.*, 2019). Education offered by academic institutions cultivates students' attitudes, which eventually affect their career decisions. Previous researchers investigated attitude for scrutinizing the human behavior that modifies an individual's knowledge, competencies, perception, experience, etc. and differentiates him or her from other community members. Studies have advocated the positive linkage between EA and EI among university graduates (Karimi, 2020; Shah *et al.*, 2020; Yirimoglu and Gunay, 2020). Considering these arguments, the following hypothesis is proposed:

H3. EA and EI are significantly correlated.

2.2.4 Entrepreneurial education, entrepreneurial intentions and gender. Considering the socio-cultural context, EI can be significantly influenced by gender. Even though women's entrepreneurship is constantly surging across the world, studies have confirmed that females have comparatively less probability of starting their venture than men (Mwobobia, 2012). There are various reasons that discourage females to enter into an entrepreneurial career, such as fewer opportunities existing for women in places where entrepreneurship is affected by gender-based rules considering entrepreneurship as a men's job (Verheul *et al.*, 2012). In addition, Bardasi *et al.* (2011) stated that several institutional and cultural limitations can also hinder the business fortunes in the case of women. Favoritism in the workplace may further discourage females to commence their business (Dana and Dana, 2005). Additionally, women entrepreneurs have to face many challenges such as seeking funds from banks, seeking men's approval, procuring knowledge, maintaining a safe distance from other females, etc. (Bird and Brush, 2002). Correspondingly, some scholars have reported that women's EI is much less than men's EI (Langowitz and Minniti, 2007). On the contrary, other academics have revealed that gender does not have any impact on EI (Indarti and Rokhima, 2008; Yao *et al.*, 2016). This might be because of the diverse results of individual business goals, beliefs and attitudes (Koellinger *et al.*, 2013). Hence, these divergent outcomes highlighted that gender has yet to be accepted as a determinant of EI. Therefore, the aforementioned reviews lead to the following hypothesis:

H4. Gender significantly moderates EE–EI relationship where men have a stronger relationship than women.

3. Research methodology

3.1 Data collection

Cross-sectional data were used to predict the relationship between entrepreneurial education, EA and gender to describe students' EI among technical institutions in India. Data were collected from final-year engineering students from top five engineering institutions across Northern India according to National Institute Ranking Framework NIRF List (2021). Purposive sampling was used as it ensures that data were collected from individuals having the same knowledge or experience and participation is deliberate that provides genuine responses (Rajak *et al.*, 2021). A pilot survey among 45 students was conducted to test the questionnaire, and necessary changes were incorporated into the survey instrument. A structured questionnaire via Google Forms was created and shared with final-year engineering students who had studied any entrepreneurship course as an elective or compulsory subject. Only final-year students were chosen as they were clearer about their professional choices.

For data collection, the authors first visited the academic department maintaining the records of students to whom the purpose of data collection was communicated. The authors further assured them of the confidentiality of data and anonymity of the respondents (Podsakoff *et al.*, 2003). The research advisory committee formed by the authors' institution has

approved this research work. To reach out to final-year students who had undergone any EE program, faculties taking entrepreneurship classes were approached to contact the participants. Furthermore, the faculty was requested to circulate the Google Forms with their students in the WhatsApp group of final-year students. In addition to this, a forced choice question was posited in the questionnaire asking the students to fill their year of B. Tech. The survey link was sent to 486 students. Several follow-up reminders to the concerned faculty members were also made to attain the maximum responses. Finally, out of 486 contacted students, only 365 students filled the survey. Since all the survey items were marked as compulsory that resulted in no missing values. 17 unengaged responses were removed from the dataset. To identify the data outliers, Cook's distance method was applied (Stevens, 2012), resulting in 8 outliers in the dataset, which were then removed. Finally, the useable data of 340 respondents were left with a valid response rate of 69.9%, i.e. an average of 68 responses were collected from each selected institution.

3.2 Instrumentation

The questionnaire was prepared using the items adopted primarily from the extant literature on entrepreneurship because of their proven reliability and validity in previous studies. Minor modifications were made to make it suitable for the present study. A five-item scale for EE was derived from Hasan *et al.* (2017). EI was determined using five items acquired from prior scholars (Linan and Chen, 2009; Thompson, 2009). The survey items for EA were derived from Liao *et al.* (2022). All the survey items were measured using a five-point Likert scale ranging from "1 = strongly disagree" to "5 = strongly agree".

3.3 Method

The present study has taken EI as an endogenous variable, EE and EA as exogenous variables and gender as a moderating variable. Data analysis was carried out using Partial least square-Structural equation modeling (PLS-SEM) with Smart PLS 4. Nearly 95% of the entrepreneurship studies used SmartPLS for analysis in the last five years (Manley *et al.*, 2021). This technique is applied in two steps to analyze the results (Siyal *et al.*, 2019). The first step deals with the measurement model that assesses the reliability, convergent validity and discriminant validity. Subsequently, structural model analysis (Figure 2) for hypothesis testing was carried out in the second step (Schuberth *et al.*, 2022).

4. Results

The sample demographics indicated that of 340 respondents, 79% were found to be male and 31% were female. The likely reason for this gender imbalance can be associated with a lesser number of female enrollments in engineering institutions in India. Furthermore, the age of almost all the respondents lies between 18 and 23 years. It was reported that 31% of participants belong to an entrepreneurial family background, while 69% belong to a non-entrepreneurial background.

PLS-SEM via SmartPLS4 was used for testing the direct and indirect associations among the latent variables (Anjum *et al.*, 2022; Farrukh *et al.*, 2019). First, the measurement model was mapped out in which the construct reliability and validity were assessed. For reliability, Cronbach's alpha and composite reliability (CR) were assessed. For validity, convergent validity and discriminant validity were assessed. Table 2 presents Cronbach's alpha and CR values which are more than 0.70, i.e. the acceptable limit, as suggested by Henseler *et al.* (2014). For convergent validity, the average variance extracted (AVE) value was checked, which should be more than 0.50, as reflected in Table 2 (Hair *et al.*, 2017).

To ensure discriminant validity, the Hetrotrait-Monotrait (HTMT), ratio, Fornell and Larcker (1981) criterion and cross-loadings were calculated. The cross-loadings of all the items, as presented in Table 1, were above 0.7, i.e. the acceptable threshold limit. As suggested by Fornell and Larcker (1981), the correlation value of the construct should be less than the

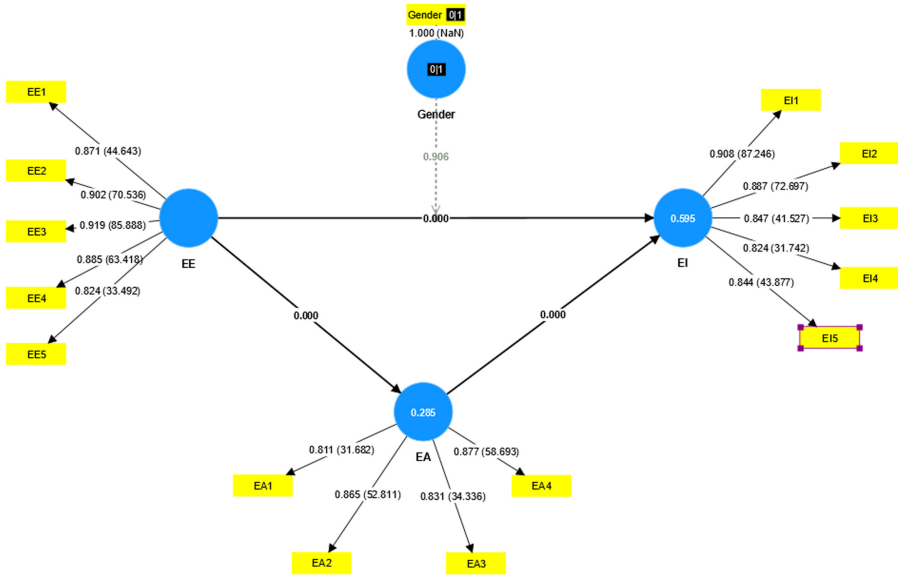


Figure 2.
Structural modeling
analysis

Source(s): Authors' own work

Construct	Items	Loadings	Alpha	CR	AVE
EE	EE1	0.871	0.927	0.945	0.775
	EE2	0.902			
	EE 3	0.919			
	EE4	0.885			
	EE5	0.824			
EA	EA1	0.811	0.868	0.910	0.716
	EA2	0.865			
	EA3	0.831			
	EA4	0.877			
EI	EI1	0.908	0.914	0.936	0.744
	EI2	0.887			
	EI3	0.847			
	EI4	0.824			
	EI5	0.844			

Table 1.
Construct reliability
and convergent
validity

Source(s): Authors' calculation

square root of AVE; in this study, AVE's square root exceeds the correlation value of each construct, as shown in Table 2. Another measure is the HTMT ratio, as shown in Table 3, which was less than 0.90, as suggested by (Henseler et al., 2015). Hence, there exist no issues of

Table 2.
Discriminant validity
(Fornell-Larcker
criterion)

	EA	EE	EI	Gender
EA	0.846			
EE	0.534	0.881		
EI	0.734	0.583	0.863	
Gender	-0.141	-0.123	-0.182	1.000

Source(s): Authors' calculation

discriminant validity. The collinearity issues were also evaluated by checking the variance inflation factor (VIF) values of each construct; VIF values are less than the threshold value, i.e. 5 for each construct (Hair *et al.*, 2017), so there is no issue of multicollinearity in the present study. Then, the model fit through different measures was assessed. A good model fit requires the standardized root mean square residual (SRMR) to not be greater than 0.08 (Hu and Bentler, 1999); in this case, the SRMR value is 0.053. The normed fit index (NFI) value is another criterion for checking the model fit, which should be near 1. The NFI value is 0.90, so both SRMR and NFI are satisfied, and hence, good model fit has been achieved.

After ensuring the model's reliability and validity, hypothesis testing was performed using structural equation modeling. The *p*-values, *t*-value and path coefficient were measured to ascertain the significance of the research model, as presented in Table 4. The values of the path coefficient suggest the rejection or acceptance of the hypotheses using the bootstrapping process in SmartPLS (Hair *et al.*, 2014). The results demonstrated a positive relationship between EE and EI. Hence, H1 is accepted ($b = 0.266$; $t = 4.186$; $p = 0.000$). The results also advocated a positive link between EE and EA. Thus, H2 is supported ($b = 0.535$; $t = 10.560$; $p = 0.000$). Similarly, EA is positively linked with EE. As a result, H3 is accepted ($b = 0.584$; $t = 11.529$; $p = 0.000$). Furthermore, gender has no significant impact on EE–EI relationship. Hence, H4 is rejected ($b = -0.009$; $t = 0.118$; $p = 0.906$).

5. Discussion

The present study investigated the impact of EE, EA and gender as a moderator on EI across engineering students in India. H1 demonstrated a positive and significant relationship between EE and EI, which is in line with other studies (Ahmed *et al.*, 2020; Ramadani *et al.*, 2022). Education reinforces student intention towards entrepreneurship and makes them more competent to start their own venture than the one who has not undergone any entrepreneurial course (Tung *et al.*, 2020).

H2 results revealed that EE and EA are significantly associated which validates the prior research connecting EE with attitudes (Yousaf *et al.*, 2022). The fundamental logic is that EE equips an individual with the requisite skills and competencies that help in developing constructive attitude and temperament towards new venture creation and makes them concentrate in the professional pathway (Nicolás *et al.*, 2018). H3 results revealed that EA and EI are positively related. This result is aligned with studies that noted significant assertion

	EA	EE	EI	Gender
EA				
EE	0.588			
EI	0.821	0.627		
Gender	0.149	0.128	0.19	
Gender x EE	0.366	0.52	0.356	0.197

Source(s): Authors' calculation

Table 3.
Discriminant validity
(HTMT ratio)

Hypothesis	Relationships	Beta	SD	<i>t</i> -value	<i>p</i> values	Decision
H1	EE – EI	0.266	0.063	4.186	0.000	Supported
H2	EE – EA	0.535	0.051	10.560	0.000	Supported
H3	EA – EI	0.584	0.051	11.529	0.000	Supported
H4	Gender x EE-EI	-0.009	0.078	0.118	0.906	Not supported

Source(s): Authors' calculation

Table 4.
Path analysis

between EA and EI (Cui *et al.*, 2021; Yousaf *et al.*, 2022). It is mentioned that an individual with higher EA tends to have more inclination toward the entrepreneurial process than others having less attitude (Acs *et al.*, 2018).

H4 results reported that the moderation effect of gender on EE–EI relationship among engineering graduates is negative and insignificant. In simple words, students, i.e. men or women who have participated in any EE course, have an equal inclination to convert their business idea into new venture creation. This outcome corroborates studies (Kumar and Das, 2019; Ramadani *et al.*, 2022; Yao *et al.*, 2016). The results reported that males and females have equal exposure to entrepreneurial initiatives like entrepreneurial lectures, seminars, business practices, etc. irrespective of gender disparity. As a result, individuals are better equipped to face external obstacles like cultural barriers and gender biases at the time of launching their venture.

6. Implications of the study

6.1 Theoretical contribution

The current study enriches the theoretical knowledge on EE by using the inclusive framework that is grounded on the HCT (Becker, 1964) and TPB (Ajzen, 1991) that have been predominantly used in the entrepreneurial education effectiveness literature. In light of this, the present study examined the impact of two exogenous constructs, i.e. EE and EA, underpinned by the human capital approach of entrepreneurship (Martin *et al.*, 2013; Unger *et al.*, 2011) and the attitudinal factor of the TPB framework (Ajzen, 1991), respectively, on EIs. Secondly, this study adds to the scarce literature, confirming the significance of the human capital dimension of EE in developing nations (Aboobaker, 2020; Ramadani *et al.*, 2022). Thirdly, this study also advances our theoretical understanding of the moderating impact of gender on EE–EI relationship, which has received limited scholarly attention in developing countries, specifically in India (Roy and Das, 2020).

6.2 Practical contribution

The study outcomes offer various practical implications for educational establishments, policymakers and the government. The findings reported positive assertion between EE and EI that recommends the further expansion of entrepreneurship-specific subjects incorporating the appropriate theoretical and practical components that can fully trigger the students' entrepreneurial drive. This will further equip students with better entrepreneurial comprehension that transcends a positive EA among students. Furthermore, a significant connection between EE, EA and EI suggests the reinforcement of the compulsory infusion of EE in engineering curriculum. The findings contend that EE contributes to creating competent human capital that propels the entrepreneurial settings in the country. India is engulfed by the graduate unemployment, and hence, creating technology startups as the prime vehicle of employment generation is of utmost importance to cater to this persistent employability crisis in the nation. Moreover, the results revealed that gender does not moderate the EE–EI relationship; this recommends that educational programs should be formulated in such a manner that males and females have equal access to entrepreneurial initiatives like entrepreneurial lectures, seminars, workshops, business plans, expos, other business events, etc., thereby eliminating gender discrimination across HEIs, particularly in Indian technical institutions that are primarily dominated by male enrollments. Lastly, the importance of EE cannot be overemphasized, given the uncertainties faced in the job market caused by the Covid-19 pandemic (Ratten and Jones, 2021). EE can also boost an individual's ability to cultivate innovation, which is crucial to address the challenges caused by the pandemic (Brown and Rocha, 2020).

7. Limitations

Besides contributions, the current study noted various limitations that can be covered in the subsequent research. First, the data size was small, so future studies should gather data from larger respondents to demonstrate a comprehensive view of how EE influences intentions. The sampling frame of this study includes only engineering students; upcoming research should target students from other streams so that cross-comparison investigation can be performed. The study used a quantitative approach, so it is suggested to use the longitudinal or mixed approach to gain a better understanding of the association between these variables.

8. Conclusions

The present study seeks to achieve two objectives, i.e. firstly, it examines the influence of EE on EA and EI among engineering students in India, and secondly, it explores whether gender moderates EE–EI relationship. The findings articulated the significant influence of EE on EA and EI, whereas gender does not strengthen EE–EI relationship. It is expected that this research will be helpful to policymakers and the government in developing economies to better acknowledge the various determinants that are antecedents to students' EI. In light of the instrumental influence of EE on EA and EI, increased attention should be given to EE activities in Indian HEIs as well as in developing counterparts. Furthermore, equal entrepreneurial opportunities should be created for both male and female students.

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