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Entrepreneurial intentions and the role of educational and social support: do the self-efficacy and the theory of planned behavior variables matter?

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Abstract

Purpose – The study aims to ascertain whether educational and social support for entrepreneurs significantly affects university students' intentions to become successful entrepreneurs. This study examines the mediating role of the Theory of Planned Behavior (TPB) variables (e.g. entrepreneurial personal attitude, subjective norms and entrepreneurial perceived behavioral control) and entrepreneurial self-efficacy in encouraging young entrepreneurs.

Design/methodology/approach – An online survey with a structured questionnaire collected data from different university students in Bangladesh; subsequently, it was analyzed through the structural equation model.

Findings – The results suggested that educational support has a direct positive relationship with the three variables of TPB. Moreover, the findings indicated that social support positively influences the variables of

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TPB, entrepreneurial self-efficacy and entrepreneurial intentions. The variables of TPB and entrepreneurial self-efficacy were found to have a significant direct impact on entrepreneurial intentions and also exhibited favorable mediating effects of educational and social support on entrepreneurial intentions.

Research limitations/implications – First, the study is only generalized to some sectors of entrepreneurship activities because the researchers used samples from university students across Bangladesh. Second, the implicit limitation of survey-based research is that respondents need to know more ways of understanding the questionnaires accurately, and some participants need to be taught how to answer the question items.

Practical implications – The main practical implication for the relationship between entrepreneurial intentions and educational support involves different entrepreneurial educational programs, which give rise to attitude, behavior, self-efficacy and intentions and enhance the student's awareness of advancing a successful entrepreneurial career.

Social implications – This study demonstrated that universities and social communities should promote the improvement of innovative thoughts for entrepreneurs and offer essential information about entrepreneurship.

Originality/value – Because entrepreneurial educational support is a crucial factor in entrepreneurial intentions, universities need to develop a practical education system that can help improve the skills required to start new ventures. The results will improve a new route to developing students' entrepreneurial intentions using the variables of TPB and entrepreneurial self-efficacy. Subsequently, these research findings will help to achieve governmental goals and increase the number of startups in the future.

Keywords Educational and social support, TPB, Entrepreneurial self-efficacy, Entrepreneurial intentions

Paper type Research paper

1. Introduction

Entrepreneurship is the strength of the country's economic system, and its primary function is to contribute to economic development by implementing reindustrialization policies, applying innovations and supporting the global economy (Smirnov, Semenov, Zakharova, & Dulina, 2020). Around the world, entrepreneurship is an increasingly popular field for practitioners' research, and entrepreneurship education is deemed imperative for increasing employment possibilities and facilitating enterprise development by generating profits resulting from the country's economic growth (Anwar, Jamal, Saleem, & Thoudam, 2021). Regarding social aspects, the Global Entrepreneurship Monitor Research (GEMR) reviews that there are connections between a country's GDP and entrepreneurial performance (Urbano, Aparicio, & Audretsch, 2018). In the 21st century, achieving the Sustainable Development Goals (SDGs) is seen as the most important issue for governments, and entrepreneurship plays an essential role in achieving the SDGs by the deadline of 2030 (Luc, 2020).

Many countries have taken initiatives for the educational and social improvement of entrepreneurship, and, at present, the Bangladeshi government is focusing on growing an entrepreneurial environment to cater to the opportunities. To promote entrepreneurship, the government of Bangladesh awarded the 2019 National Youth Award to 22 young entrepreneurs; moreover, the Department of Youth Development and the Ministry of ICT are organizing various agro-entrepreneurship, freelance and self-employment teaching programs for young entrepreneurs in each region (Shahriar, Islam, Zayed, Hasan, & Raisa, 2021). Currently, the young graduates are implicated in structuring their businesses in the ICT field, establishing agro- and dairy-based construction items, restaurants and food carts, and enchanting up freelancing for outsourced employment to meet the stipulated requirements of the engagement financial system (Shahriar et al., 2021).

The unemployment rate in Bangladesh struck an all-time high of 6.91% in November 2023, compared to more tamed rates of 4.2% to 4.5% in the previous two decades (Kashem & Islam, 2023). The employment sector faces several challenges due to the complexity originating from the war between Ukraine and Russia. However, youth forget that

entrepreneurship is a possibility through which a person can overcome the unemployment problem. As mentioned earlier, student unemployment rates suggest the necessity for entrepreneurial educational improvement; therefore, entrepreneurship studies reflect on future career directions. Therefore, our study examines how to become a successful entrepreneur by describing the association among entrepreneurial educational support (EES), entrepreneurial social support (ESS), the variables of the Theory of Planned Behavior (TPB), entrepreneurial self-efficacy (ESE) and entrepreneurial intentions (EI).

Many authors have found that various approaches to the TPB model have succeeded in making an essential numerical and theoretical contribution to the existing literature on EI (Younis et al., 2021; Anwar et al., 2021). Additionally, Kisubi, Korir, and Bonuke (2021) provided a comprehensive analysis in their report, highlighting the crucial role of entrepreneurial creativity and attitudes towards entrepreneurship as mediators in the relationship between ESE and EI. Moreover, the authors emphasized that entrepreneurial education is vital in enhancing entrepreneurial creativity, enabling individuals to manage their EI effectively (Lu, Song, & Pan, 2021). The results of Wach, Kruse, Costa, and Antonio Moriano (2023) also indicated that TPB has limited predictive power for social support and EI. There is a lack of literature examining how TPB and ESE can predict the student's EI, as this ultimately encourages the would-be entrepreneurs to explore the different motivations (social or commercial) for engaging in entrepreneurial activity. Therefore, this study conceptualizes that TPB variables (entrepreneurial personal attitude, EPA, subjective norms, SN, entrepreneurial perceived behavioral control, EPBC) and ESE can mediate the association between EES, ESS and EI to become successful entrepreneurs. In addition, this research will validate the adoption of EI as a strategic choice in forming successful entrepreneurs. Accordingly, our research addresses the following research questions:

RQ1. Does EES and ESS affect university students' EI in forming successful entrepreneurs?

RQ2. Do TPB variables (e.g. EPA, SN and EPBC) and ESE affect university students' EI in their becoming successful entrepreneurs?

RQ3. Does TPB variables (e.g. EPA, SN and EPBC) and ESE mediate the relationship between EES and EI in forming successful entrepreneurs?

RQ4. Does TPB variables (e.g. EPA, SN and EPBC) and ESE mediate the relationship between ESS and EI in forming successful entrepreneurs?

2. Hypotheses development

The EES is an effective academic education system that provides the necessary information for a practical business situation and assembles self-confidence to increase abilities for a successful business enterprise (Ratten & Jones, 2021). Researchers have found that EES significantly enhances EI, particularly in the university education system, which plays an essential function in the development of students (Aga, 2023; Anjum, Heidler, Amoozegar, & Anees, 2021). In addition, the impacts of EES on EI in some examinations indicate a positive result, but some other studies show that they negatively influence students' EI (Rocha, Moraes, & Fischer, 2021). The study by Lu et al. (2021) assessed the impact of Chinese universities' EES on the EI of students, and the findings indicate that students are dissatisfied with their EES. Based on this discussion, it is hypothesized that:

H1. EES positively influences EI in forming successful entrepreneurs.

Student entrepreneurial attitudes and behavior can encourage intentions to instigate innovative business ventures in the future; Wardana et al. (2020) proved that EES positively influences entrepreneurial attitudes. Previous researchers have proposed the link between EES, perceptions of ESE and EPA; they also suggested a link between the EES programs and the development of student attitudes and intentions (Sunanto, Hady, & Purba, 2023; Hussain, Hashmi, & Gilani, 2018). Successful EES has always had an essential influence on students' EPA, and EI could guide students to pay more attention to the social advantages of entrepreneurship than the financial ones (Boldureanu, Ionescu, Bercu, Bedrule-Grigorut, & Boldureanu, 2020). Thus, the following hypothesis was proposed:

H1a. EES positively influences EPA in forming successful entrepreneurs.

In general, university students are more likely to start innovative business enterprises when they realize that the university atmosphere supports them in accomplishing the university and society's expectations (Lu et al., 2021). Furthermore, Aprilia and Ardana (2021) showed that SN has an essential impact on EI, and Bhat and Singh (2018) described the interaction between EES and SN that shapes perceptions and attitudes toward entrepreneurship. Based on the above discussion, EES for SN could be expected to influence EI to become successful entrepreneurs. Accordingly, we formulated this hypothesis:

H1b. EES positively influences SN in forming successful entrepreneurs.

In researching the antecedents of EI, Aga (2023) showed that the EPBC has an essential influence on individuals who have participated in an entrepreneurship education program. Similarly, another study (Ahmed, Chandran, Klobas, Liñán, & Kokkalis, 2020) pointed out an important association between EPBC and EI and examined the fact that EES is relevant for creating a good relationship with EPBC among university graduates in Pakistan. Therefore, to identify whether this antecedent of intentions affects the relationship with EES, EPBC and EI, the following hypothesis was built:

H1c. EES positively influences EPBC in forming successful entrepreneurs.

A survey of Wang and Huang (2019) on intentions has discovered that ESE is significantly connected with the EES system. In entrepreneurial courses, students can carry out practical projects and enhance their self-efficacy through concrete achievement. Moreover, Kisubi et al. (2021) stated that EES strongly influences ESE, and the research findings show that advanced self-efficacy leads students to have more positive beliefs about their ability to succeed as entrepreneurs. The present study accepts this evidence and proposes that:

H1d. EES positively influences ESE in forming successful entrepreneurs.

The research of Younis et al. (2021) analyzed that the ESS develops daily as the higher attitude, social norms and intentions to generate students' business awareness in the community and increase the opportunity to produce an innovative industry. In terms of entrepreneurial success, family and friends can provide a potential entrepreneur with ESS that will cooperate as a crucial part in improving their EI (Nowiński & Haddoud, 2019). A recent study found that ESS effectively improves student's EI (Molino, Dolce, Cortese, & Ghislieri, 2018). Schlaegel and Koenig (2014) encountered a little favorable impact of SN on EI; however, it was not statistically significant. Therefore, this study proposes the following hypothesis:

H2. ESS positively influences EI in forming successful entrepreneurs.

Many contextual factors include ESS as a moderating variable in the association between work standards and work-related attitudes. Attitudes extensively influence people's intentions, and in entrepreneurship, the EPA has an essential impact on EI (Liguori, Winkler, Vanevenhoven, Winkel, & James, 2019). Shiri, Mohammadi, and Hosseini (2012) explained that ESS directly influences perceived entrepreneurial attitudes, which later positively impacts EI. When a person in entrepreneurship has a significant attitude toward self-employment, the aspiration is higher to become a successful entrepreneur (Noor, Yaacob, & Omar, 2021). Hence, this research posits the following hypothesis:

H2a. ESS positively influences EPA to form successful entrepreneurs.

H3a. EPA positively influences EI to form successful entrepreneurs.

Doekhie, Buljac-Samardzic, Strating, and Paauwe (2020) conducted a mixed-method investigation of SN and ESS, where TPB disregards that SN is essential in improving EI and entrepreneurial behavior (Noor et al., 2021). Therefore, scientists argued that SN might be essential in promoting entrepreneurial behavior. On the contrary, Ernst (2018) found that SN had no statistically influential impact on the EI. Accordingly, we formulated the following hypotheses:

H2b. ESS positively influences SN in forming successful entrepreneurs.

H3b. SN positively influences EI in forming successful entrepreneurs.

ESS has an essential impact on a person's self-assurance (perceived behavioral control), and researchers have identified a positive impact of EPBC and EI (Ahmed et al., 2020). Based on an empirical study, Farooq (2018) explored the importance of ESS and entrepreneurial skills in determining individuals' entrepreneurial behavior and stated that ESS positively impacts EPBC. Therefore, this study posits that:

H2c. ESS positively influences EPBC in forming successful entrepreneurs.

H3c. EPBC positively influences EI in forming successful entrepreneurs.

The importance of ESE in building confidence in individuals' abilities to perform essential tasks relates to entrepreneurial activities and their positive impact on their EI (Molino et al., 2018). Correspondingly, Sunanto et al. (2023) and Shi, Yao, and Wu (2019) expressed that the students' ESE directly influences the EI of their dimensions of investigation. Although ESS can amplify the significant impact of ESE on EI (Neneh, 2020), sometimes EI's strength might be secondary to favorable circumstances of entrepreneurial activities. However, this research proposed the following hypotheses:

H2d. ESS positively influences ESE in forming successful entrepreneurs.

H4a. ESE positively influences EI in forming successful entrepreneurs.

The TPB model developed by Ajzen (1991) is a well-acknowledged theory to measure an individual's behavioral intentions toward entrepreneurship depending on three antecedents, namely, the EPA, SN and EPBC (Wach & Bilan, 2021). The study by Eagle, Hybels, and Proeschold-Bell (2019) examined how ESS can be a possible determinant of EI; hence, this research extended the TPB model by mediating the relationship between ESS and EI. The findings of Aga (2023) additionally described that EPBC partially mediated the connection between EES and EI. On the contrary, Lu et al. (2021) indicated a weak connection between EES and EI, which are mediated through TPB models' dimensions (EPA, SN and EPBC).

Furthermore, Kisubi (2020) explores how the EPA mediates the connection between EES and EI and says that if entrepreneurship is more attractive to the students, their EI effort will be higher. Therefore, the following hypotheses are also presented:

H5a. TPB (EPA, SN and EPBC) mediates the relationship between ESS and EI.

H5b. TPB (EPA, SN and EPBC) mediates the relationship between EES and EI.

The development of ESE is affected by the person's entrepreneurial evaluation and can influence their future performance. Using ESE as a mediating variable, a few studies have established that EES impacts EI and ESE (Ciuchta & Finch, 2019) in undertaking entrepreneurial activities. In addition, Hoang, Thi Le, Thi Tran, and Du (2020) examined the fact that ESE, EES and EI have a connection, namely ESE as a mediating association between EES and EI. If entrepreneurs have full support in ESS and confidence in their abilities, then entrepreneurial behavior can lead to high business performance, and entrepreneurs can show high EI. Combining the arguments of Hypotheses *H1d*, *H2d*, and the above analysis, we believe that the ESE not only directly affects ESS, EES and EI but also has positive indirect effects. Based on this, the following hypotheses were proposed:

H5c. ESE mediates the relationship between ESS and EI.

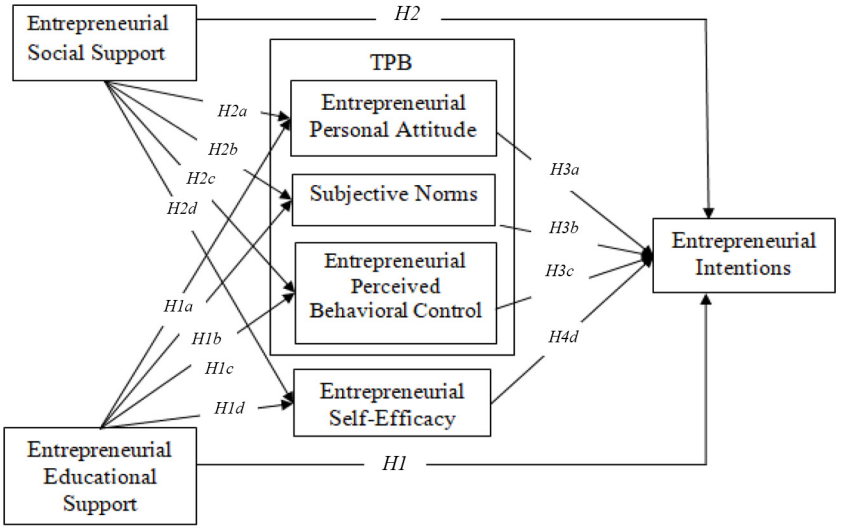
H5d. ESE mediates the relationship between EES and EI.

Figure 1 illustrates the research model described in the following section.

3. Methodology

3.1 Survey procedures and data collection

The primary data were collected by an online survey using a structured questionnaire with the support of the Google Docs Form. This questionnaire applied the five-point Likert scale,



Source: The authors

Figure 1 Proposed research model

which ranged from *strongly disagree* to *strongly agree*. Additionally, this questionnaire was accumulated online (e.g. through email and social networking sites), and the targeted population was students from different universities in Bangladesh. Furthermore, a pilot test with 21 respondents was conducted earlier in the data collection process to evaluate the data's clarity. The survey was conducted for approximately four weeks in October 2021. A database of 307 responses was collected, followed by initial data screening and successive data cleaning. Eventually, 278 responses were validated for analysis.

3.2 Data analysis

The component analysis was tested as an integral part of the scale to examine the measurement and structural model equally using SPSS 25.0 and AMOS 24.0 software. Moreover, structure equation modeling (SEM) was applied to validate the research model. We applied Harman's Single Factor Test for common method bias to examine the nonresponse bias. The first aspect of the study explained 27% of the variance. If the variance percentage is less than 50% and some other factors of eigenvalues are higher than 1 (see Table 1), then it is perfect for the next step of the analysis (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

4. Empirical results

To analyze the proposed research model, we used exploratory factor analysis (EFA) and confirmatory factor analysis simultaneously to receive better parameter accuracy from the measurement model suggested by Civelek (2018).

4.1 Demographic results

The demographic information is also enclosed in the questionnaire. As seen from the demographic result, the numbers of male and female participants were 170 and 124, which correspond to 55.4% and 44.6%, respectively. Approximately 73.4% of the total participants were bachelors, 25.5% were master's students and 1.1% were PhD or other levels of study.

4.2 Exploratory factor analysis

In the EFA, factors are good communalities if higher than 0.3 (Field, 2009), and the reliability is excellent. Subsequently, the variable's internal consistency reliability was measured using Cronbach's alpha, which was higher than 0.70 (Cortina, 1993) (see Table 1), a trusted implement. It is implicit that the items on the Likert scale estimate the same construct and are extremely interrelated.

4.3 Reliability and validity measurements

Table 2 provides the measurement element targets with the measurement model's reliability and validity statistics, composite reliability (CR) and average variance extracted (AVE). The results of AVE values exceed 0.50 (Bagozzi & Yi, 1988), and all values of CR are higher than 0.70 (Hair, Hult, Ringle, & Sarstedt, 2014). It is evidence of the appropriate interior consistency in the reliability and validity statistics of the measurement model. Furthermore, Appendix 1 displays the measurement questions, factor loadings and associated states and the consequence of heterotrait–monotrait (HTMT) is illustrated in Appendix 2. All the values are lower than 0.85, which indicates excellent HTMT results (Kline, 2011).

Table 1 Results of analyzing components

Item	Construct	Component 1	2	3	4	5	6	7	Cronbach's alpha
EI3	Entrepreneurial intentions	*0.783*	0.129	0.123	0.026	0.305	0.166	−0.015	0.898
EI4		*0.748*	0.280	0.076	0.030	0.134	0.262	0.066	
EI1		*0.740*	0.105	0.053	0.019	0.289	0.193	0.161	
EI2		*0.725*	0.178	0.137	−0.004	0.100	0.321	0.126	
EI6		*0.697*	0.237	0.018	0.041	0.163	0.091	0.292	
EI5		*0.681*	0.107	−0.017	0.006	0.313	0.017	−0.009	
EPBC3	Entrepreneurial perceived behavioral control	0.050	*0.802*	0.077	−0.032	0.146	0.243	0.092	0.876
EPBC2		0.181	*0.745*	0.060	0.127	0.116	0.229	0.124	
EPBC4		0.134	*0.740*	0.042	−0.015	0.066	0.344	0.002	
EPBC5		0.226	*0.650*	0.181	0.138	0.117	0.095	0.132	
EPBC1		0.199	*0.600*	0.146	0.164	0.130	0.346	0.210	
EPBC6		0.301	*0.588*	0.063	0.207	−0.007	0.126	0.256	
EES3	Entrepreneurial educational support	−0.001	0.144	*0.822*	0.142	−0.045	−0.025	0.051	0.840
EES2		0.034	0.021	*0.817*	0.093	0.086	0.135	0.097	
EES4		−0.025	0.098	*0.815*	0.147	0.041	−0.036	0.024	
EES6		0.125	−0.065	*0.698*	0.122	0.049	0.234	0.192	
EES1		0.180	0.196	*0.642*	0.050	0.136	−0.024	−0.106	
ESS3	Entrepreneurial social support	0.063	0.090	0.101	*0.793*	−0.098	0.091	0.153	0.827
ESS4		0.006	0.065	0.089	*0.781*	−0.056	0.160	0.115	
ESS1		0.007	0.011	0.153	*0.770*	0.129	−0.009	0.139	
ESS2		−0.049	0.113	0.165	*0.748*	0.196	0.024	0.085	
EPA4	Entrepreneurial personal attitude	0.231	0.095	0.080	0.015	*0.752*	0.096	0.162	0.775
EPA2		0.265	0.133	0.140	0.082	*0.698*	0.109	0.120	
EPA3		0.147	0.078	0.041	−0.074	*0.673*	0.136	0.233	
EPA1		0.216	0.010	0.007	0.128	*0.655*	0.173	0.059	
EPA5		0.256	0.297	0.022	0.115	*0.502*	−0.151	−0.131	

(*continued*)

Table 1 Continued

Item	Construct	Component 1	2	3	4	5	6	7	Cronbach's alpha
ESE3	Entrepreneurial self-efficacy	0.183	0.326	0.062	0.038	0.114	*0.776*	0.067	0.852
ESE5		0.224	0.318	0.090	0.092	0.124	*0.709*	0.094	
ESE4		0.245	0.290	0.029	0.205	0.102	*0.709*	0.021	
ESE2		0.231	0.322	0.078	0.061	0.139	*0.573*	0.119	
SN2	Subjective norms	0.037	0.091	0.067	0.130	0.129	0.093	*0.747*	0.735
SN1		0.132	0.235	0.068	0.257	0.076	0.138	*0.673*	
SN3		0.237	0.142	0.059	0.243	0.266	−0.044	*0.563*	
SN4		0.160	0.219	0.101	0.449	0.133	0.087	*0.435*	
Eigen value		10.113	3.421	2.424	2.222	1.335	1.143	1.089	
Variance explained		29.744	10.062	7.130	6.535	3.928	3.363	3.203	
Variance cumulative		29.744	39.806	46.936	53.471	57.399	60.762	63.964	

Source: The authors

Table 2 Results of the reliability and validity assessment

Factor	CR	AVE	EPBC	EI	EES	EPA	ESS	ESE	SN
EPBC	0.841	0.572	0.756						
EI	0.896	0.632	0.587***	0.795					
EES	0.843	0.575	0.298***	0.193**	0.758				
EPA	0.765	0.522	0.475***	0.664***	0.224**	0.722			
ESS	0.801	0.579	0.299***	0.143*	0.330***	0.112	0.761		
ESE	0.855	0.597	0.742***	0.633***	0.211**	0.432***	0.278***	0.773	
SN	0.711	0.452	0.585	0.509	0.311	0.518	0.626	0.486	0.672

Notes: ***$p < 0.001$; **$p < 0.01$; *$p < 0.05$
Source: The authors

4.4 Measurement model

To calculate a good model fit for the measurement model, we established the value of the CMIN/DF as lower than 3, and GFI, CFI, IFI and TLI equal to or more than 0.9 (Bentler, 1990). Moreover, the standardized root mean square residual (SRMR) and root mean square error of approximation (RMSEA) should be equal to or less than 0.08, and the AGFI should be equal to or more than 0.85 (Hu & Bentler, 1998). This study model's outcome indices (CMIN/DF = 1.452; GFI = 0.912; AGFI = 0.881; SRMR = 0.043; CFI = 0.967; IFI = 0.968; TLI = 0.959; and RMSEA = 0.040) reveal a good model fit (see Table 3).

4.5 Structural model assessment

After proving the reliability and validity of the measurement model, this research ran a structural model. In the structural model, the outcomes of the model fit indices were CMIN/DF = 1.315 (<3), GFI = 0.908, AGFI = 0.879, SRMR = 0.039, CFI = 0.974 (≥0.90), IFI = 0.975 (≥0.90), TLI = 0.968 (≥0.90) and RMSEA = 0.034 (≤0.08). These values fulfilled the respective thresholds (see Table 3), making the model fit acceptable.

Table 3. Results of model fit indices

Model fit indices	Recommended value	Measurement model	Structural model
CMIN/DF	<3	1.452	1.315
GFI	≥0.90	0.912	0.908
AGFI	≥0.85	0.881	0.879
SRMR	≤0.08	0.043	0.039
CFI	≥0.90	0.967	0.974
IFI	≥0.90	0.968	0.975
TLI	≥0.90	0.959	0.968
RMSEA	≤0.08	0.040	0.034

Notes: CMIN/DF = Ratio of Chi-square / Degrees of Freedom; GFI = Goodness-of-fit Index; AGFI = adjusted GFI; Standardized Root Mean Square Residual =SRMR; CFI = Comparative Fit Index; IFI = Incremental Fit Index; TLI = Tucker–Lewis Index; RMSEA = Root Mean Square Error of Approximation
Source: The authors

4.6 Hypotheses testing

From Table 4, and using the structural equation model, we identified that 16 out of 18 of our hypotheses were validated. The hypotheses results indicated that EES is significantly connected with EPA ($\beta = 0.110$, $p < 0.001$), SN ($\beta = 0.159$, $p < 0.01$) and EPBC ($\beta = 0.139$, $p < 0.001$), and, as a result, *H1a*, *H1b* and *H1c* are supported. However, EES does not affect EI ($\beta = 0.058$, $p < 0.355$) and ESE ($\beta = 0.059$, $p < 0.350$); thus, *H1* and H1d are not supported. In the case of ESS, it extensively affects EI ($\beta = 0.704$, $p < 0.001$), EPA ($\beta = 0.600$, $p < 0.001$), SN ($\beta = 0.741$, $p < 0.001$), EPBC ($\beta = 0.811$, $p < 0.001$) and ESE ($\beta = 0.776$, $p < 0.001$), which supports *H2*, *H2a*, *H2b*, *H2c* and *H2d*. In addition, the direct paths of *H3a*, *H3b*, *H3c* and *H4a* are significant by providing the positive estimates and standardized coefficient values of EPA ($\beta = 0.536$, $p < 0.001$), SN ($\beta = 0.118$, $p < 0.01$), EPBC ($\beta = 0.189$, $p < 0.001$) and ESE ($\beta = 0.354$, $p < 0.001$).

4.7 Mediation analysis

To test the mediation impacts, we applied a total of 278 valid samples and used AMOS-24 to perform bootstrapping. The method was repeated more than 2,000 times. The results (Table 5) exhibit that both the bias-corrected 95% CI and percentile 95% CI associated with the indirect impact do not encompass zero, indicating a widespread mediating function of TPB and ESE, therefore supporting the hypotheses H5a, H5b, H5c and H5d.

5. Discussion and implications

The study findings are shown in Tables 4 and 5. Concerning educational support, the research results showed that hypotheses *H1a*, *H1b* and *H1c* are related to EES, EPA, SN and EPBC, which display a significant positive correlation. Similarly, Wardana et al. (2020), Boldureanu et al. (2020) and Hussain et al. (2018) discovered that EES and EPA (*H1a*) are positively associated. In addition, EES has an essential influence on SN (*H1b*) and EPBC (*H1c*), which supports the previous studies of Bhat and Singh (2018) and Ahmed et al. (2020).

Table 4. Hypotheses results

Hypothesized paths		Estimate	SE.	CR.	*p*-value	Decision
H1	EES → EI	0.058	0.051	0.926	0.355	Reject
H1a	EES → EPA	0.110	0.048	1.561	***	Accept
H1b	EES → SN	0.159	0.061	2.183	**	Accept
H1c	EES → EPBC	0.139	0.056	2.192	***	Accept
H1d	EES → ESE	0.059	0.057	0.934	0.350	Reject
H2	ESS → EI	0.704	0.213	5.630	***	Accept
H2a	ESS → EPA	0.600	0.169	5.057	***	Accept
H2b	ESS → SN	0.741	0.249	5.178	***	Accept
H2c	ESS → EPBC	0.811	0.268	5.627	***	Accept
H2d	ESS → ESE	0.776	0.252	5.719	***	Accept
H3a	EPA→EI	0.536	0.128	6.892	***	Accept
H3b	SN → EI	0.118	0.060	1.900	**	Accept
H3c	EPBC → EI	0.189	0.079	3.308	***	Accept
H4a	ESE → EI	0.354	0.046	5.510	***	Accept

Notes: Squared multiple correlations: R squared value EPA = 0.372, SN = 0.574, EPBC = 0.676, ESE = 0.606, EI = 0.498; ***$p < 0.001$; **$p < 0.01$; *$p < 0.5$; SEM-AMOS output
Source: The authors

Table 5. Results of mediation analysis

Variables			Bootstrapping					
			Bias-corrected 95% CI			Percentile 95% CI		
Indirect effect	Estimate	SE	Lower	Upper	*p*-value	Lower	Upper	*p*-value
ESS → TPB → EI (*H5a*)	0.214	0.557	0.042	1.772	***	0.044	1.853	***
EES → TPB → EI (*H5b*)	0.170	0.083	0.028	0.356	***	0.028	0.356	***
ESS → ESE → EI (*H5c*)	0.088	0.139	0.023	0.528	***	0.021	0.456	***
EES → ESE → EI (*H5d*)	0.058	0.040	0.001	0.170	**	−0.012	0.148	**

Notes: ***$p < 0.001$; **$p < 0.01$; CI = confidence interval, the process repeated 2,000 times
Source: The authors

From the perspective of social support, this study has shown that the ESS system is essential in developing EI and hypothesized that ESS is significantly connected to EI (*H2*) among university students. Some prior research (e.g. Nowiński & Haddoud, 2019; Molino et al., 2018) supports this result, which has shown an essential connection between ESS and EI. On the other hand, García-Rodríguez, Gil-Soto, Ruiz-Rosa, and Gutiérrez-Taño (2017) and Schlaegel and Koenig (2014) findings illustrate that the social context exerts an indirect impact on the EI, which is not supported by this study hypothesis (*H2*). Subsequently, this research revealed that *H2a*, *H2b*, *H2c* and *H2d* are related to ESS, TPB (EPA, SN, EPBC) and EI, demonstrating a positive connection. All results are supported by the recent studies of Noor et al. (2021), Doekhie et al. (2020) and Neneh (2020), which yielded a positive connection.

Regarding the intentions, the EI suggested that the TPB (EPA, SN and EPBC) and ESE had meaningful relationships with each other (*H3a*, *H3b*, *H3c* and *H4a*). This result positively connects with the previous research of Sunanto et al. (2023) and Shi et al. (2019). The relevancy of the TPB to EI had received comprehensive empirical support in the past, though some exceptions, e.g. the relationship between EI and SN (*H3b*) from this analysis, did not support Ernst's (2018) analysis result.

However, the hypotheses *H1* and *H1d* were rejected in this study, allowing for future considerations. Notably, EES has an insignificant impact on both variables of EI and ESE; therefore, the *H1* and *H1d* hypotheses are not supported. On the contrary, some previous research explored that EES has an essential impact on EI (Anjum et al., 2021) and ESE (Kisubi et al., 2021), which do not support our study results. These hypotheses (*H1* and *H1d*) indicate an insignificant relationship between the surrounding situation and educational support, which does not encourage students to become entrepreneurs. However, these results are not the same for every country because they may differ based on institutional characteristics.

Concerning the mediating or indirect effects, this research findings indicated that hypotheses *H5a*, *H5b*, *H5c* and *H5d* are positively supported by the studies of Kisubi (2020), Hoang et al. (2020) and Ciuchta and Finch (2019). On the other hand, Lu et al. (2021) studies did not support hypothesis *H5b*, which yielded a weak association between the EES and EI mediated by the TPB. However, no research has been found in the literature to determine the mediating role of ESE and TPB simultaneously in association with EES, ESS and EI. Therefore, our study can make an additional contribution to the literature.

5.1 Theoretical implications

Entrepreneurship is a strong alternative for strengthening the community in diverse ways and bringing about financial improvement through jobs and investment. First, from a methodological perspective, the study aims to determine whether EES and ESS enhance students' EI by using the TPB and ESE to create successful entrepreneurs. For this reason, the data were collected from diverse university students via a structured questionnaire, and the SEM method was applied to evaluate them. This research has additionally provided greater generalizability and reliability and shown sufficient external validity, which will motivate students and researchers to pursue entrepreneurial studies.

This paper mainly contributes to the literature in the fields of EES, ESS, TPB (EPA, SN and EPBC), ESE and EI, and likewise explores a model that is an essential determinant for their simultaneous impacts. This finding encompasses the three elements of TPB (EPA, SN and EPBC) positively connected with EES, which expresses that EES might assemble students' mindsets, attitudes and behaviors to form realistic entrepreneurs. Moreover, the results ensured that the EES variables had an insignificant effect on EI and ESE. It is noticeable that education will play a crucial role in improving EI and ESE; hence, there is a need to enhance university EES to support the development of the students' EI and ESE.

Second, this study examines the ESS as a potent element in economic growth. This research provides the ESS's positive and significant influence on TPB (EPA, SN and EPBC), ESE and EI. Furthermore, this study has many implications for countries; e.g. people can learn from these results why they need to develop EI and how ESS helps to motivate people's EI, TPB and ESE. Empirically, the results have confirmed that the natures of TPB and ESE play a role in creating a significantly higher mediating intention with EES, ESS and EI to create successful entrepreneurs. This finding is motivating in the theoretical area and a challenge for educators and policymakers.

5.2 Practical implications

In the context of entrepreneurial research, educators and trainers involved with business research could benefit from this research model as a quantitative implementation. An educated person has more potential to choose an entrepreneurial career and develop successful businesses than an illiterate person. Bangladeshi policymakers would benefit by creating better associations among the government, industries and universities, improving students' inner beliefs. Consequently, this study model's strength is its analytical support for originating a well-organized program enlightening entrepreneurial behavior.

Support from the community or society plays an essential role for youth so young entrepreneurs can maintain faith and intentions in their abilities to build enterprises. In addition, some educational institutions and social communities may instigate more vital conferences with entrepreneurs and business plan competitions. With the increase in technological innovations, the ease of accessing information has led to a rise in the number of educated entrepreneurs. Therefore, universities should also design online forums where market members can communicate the knowledge connected to modern market possibilities. Of course, proper educational and social support is needed for would-be entrepreneurs (such as techno-entrepreneurship, female entrepreneurship and family entrepreneurship), which will be accessible and significant components of the structural entrepreneurial climate for students nationwide.

6. Conclusion

The results of the current study are highly compatible with the previous research literature, yet there are some limitations and guidelines for future research. First, the study is only

generalizable to some sectors of entrepreneurship activities because the researchers used samples from university students from Bangladesh. Future studies should analyze cross-cultural studies; depending on the situation, cross-cultural analysis may bring different results from the perspective of various countries' cultures. Furthermore, as mentioned in the preceding section, the variables regulated in this research, including university type, gender, field of study and families' entrepreneurial background, can be incorporated into subsequent studies.

Second, the implicit limitation of survey-based research is that respondents must learn how to understand the questionnaires accurately; some participants even need to be taught how to answer the question items. Third, this research will be capable of examining the sample with a larger population on gender comparison grounds. Through this investigation, the researcher can generalize the outcomes of whether females or males are better instructed to begin a business.

When this paper examined the literature and methodological parts, we found that the essential characteristics of entrepreneurship are generally justified for EES, ESS, TPB, ESE and EI. This research result has exposed that the EES does not directly influence the EI and ESE in the structural model analysis. Therefore, policymakers must believe that the influence of EES on EI and ESE is still undergoing experiential testing, and more research is required to recognize these relationships.

Educational support must develop social support and ecological values to enhance the students' TPB, ESE and EI by understanding the fundamental process of entrepreneurship education. Consequently, this study suggests that all universities in Bangladesh should train instructors who can communicate with the students to teach them about entrepreneurship knowledge to improve their skills in terms of EI and ESE.

The benefits of social support involve individual contributions, economic aid and leveraging social networks that promote achievement-oriented education by facilitating behavior, norms, attitudes, self-efficacy and intentions concerning themselves with others. It is recommended that future researchers and entrepreneurial practitioners extend the current model to enhance the study of entrepreneurship in making strategic decisions.

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Appendix 1

Table A1. Results of the measurement model

Construct and item	Source	SL	SE.	CR.	SMC
Entrepreneurial perceived behavioral control (EPBC)					
EPBC1: I am prepared to start a viable business firm.		0.821	N/A	N/A	0.674
EPBC2: I can control the creation process of a new business firm	Youssef, Boubaker, Dedaj, and Carabregu-Vokshi (2021)	0.835	0.061	15.128	0.698
EPBC3: I have the necessary practical knowledge to start a business firm.		0.732	0.070	12.933	0.536
EPBC5: If I tried to start a business firm, I would have a high probability of succeeding		0.616	0.060	10.500	0.380
Entrepreneurial intentions (EI)					
EI1: I am determined to create a business firm in the future	Youssef et al. (2021) and	0.809	N/A	N/A	0.655
EI2: I have thought very seriously about starting a business firm.	Anjum et al. (2021)	0.793	0.064	14.664	0.630
EI3: I will make every effort to start and run my own business firm.		0.813	0.061	15.138	0.661
EI4: I do not have doubts about starting my own business venture		0.828	0.067	15.514	0.685
EI6: I will choose my career as an entrepreneur		0.728	0.063	13.116	0.530
Entrepreneurial educational support (EES)					
EES2: My education at university has encouraged me to develop creative ideas for being an entrepreneur.		0.730	N/A	N/A	0.533
EES3: My university helps me develop my entrepreneurial skills	Youssef et al. (2021) and	0.814	0.093	12.312	0.663
EES4: My university provides the necessary knowledge about entrepreneurship.	Kisubi et al. (2021)	0.828	0.105	12.448	0.686
EES6: The university academic course increases my chances of becoming an entrepreneur.		0.647	0.097	9.974	0.418
Entrepreneurial personal attitude (EPA)					
EPA2: Among various career options, I would become a successful entrepreneur	Youssef et al. (2021) and Anwar et al. (2021)	0.759	N/A	N/A	0.576
EPA3: I find the idea of being an entrepreneur very attractive		0.648	0.090	9.499	0.420
EPA4: The decision to become an entrepreneur would generate great satisfaction.		0.755	0.099	10.638	0.570

(*continued*)

Table A1. Continued

Construct and item	Source	SL	SE.	CR.	SMC
Entrepreneurial social support (ESS)					
ESS1: When I start my own business, society will encourage me and support my decision.	Ip, Wu, Liu, and Liang (2017)	0.584	N/A	N/A	0.342
ESS3: When I encountered business issues, society and relatives helped me to overcome the problem.		0.867	0.153	9.517	0.752
ESS4: When I was faced with business difficulties, society expressed interest in solving my problem.		0.803	0.145	9.417	0.645
Entrepreneurial self-efficacy (ESE)					
ESE2: I can make quick decisions to take advantage of business opportunities	Esfandiar, Sharifi-Tehrani, Pratt, & Altinay (2019)	0.668	N/A	N/A	0.446
ESE3: I can originate new business ideas and products.		0.808	0.124	11.449	0.653
ESE4: I can create products that fulfill customers' needs.		0.816	0.119	11.536	0.666
ESE5: I can develop an excellent entrepreneurial plan for potential business investors.		0.791	0.112	11.260	0.625
Subjective norms (SN)					
SN1: My family prioritizes an entrepreneurial career more than any other	Anwar et al. (2021) and Esfandiar et al. (2019)	0.627	N/A	N/A	0.393
SN3: If I were to start my own business, my parents would be supportive		0.650	0.102	8.298	0.423
SN4: If I were to start my own business, my community would be supportive significantly.		0.735	0.114	8.934	0.541

Notes: SL = bootstrap standardized loadings; SE = standard error; CR = critical ratio; SMC = squared multiple correlation
Source: The authors

Appendix 2

Table A2. Heterotrait–monotrait ratio (HTMT) results

	EPBC	EI	EES	EPA	ESS	ESE	SN
EPBC							
EI	0.604						
EES	0.321	0.227					
EPA	0.487	0.660	0.235				
ESS	0.311	0.156	0.376	0.155			
ESE	0.766	0.642	0.252	0.445	0.277		
SN	0.601	0.526	0.335	0.522	0.640	0.500	

Source: The authors

Author's contribution: Mst. Nirufer Yesmin – Conceptualization (equal), data curation (lead), investigation (lead), methodology (equal), writing – original draft (lead). Md. Alamgir Hossain – Research supervision (lead), formal analysis (support), conceptualization (equal), methodology (equal), writing – original draft and review (support). Md. Saiful Islam – Research supervision (support), methodology (support), validation (support), writing – review and editing (lead). Md. Mostafizur Rahman – Conceptualization (support), methodology (support), validation (support), writing – review and editing (lead). Minho Kim – Methodology (support), validation (lead), research supervision (support), writing – review and editing (support).

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