Predicting Entrepreneurial Attitude among University Students in National Capital Region of India

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Abstract

The study aims to predict entrepreneurial attitude by examining the effect of entrepreneurial traits like Internal locus of control, Innovativeness and Risk-taking propensity on the Entrepreneurial attitude among the university students in National Capital Region (NCR) of India. Further, the resultant relationships were tested across gender and undergraduate and postgraduate students using Multi group analysis. The primary data was collected through online questionnaire from 371 students and was analyzed using Partial Least Square-Structural Equation Modeling (PLS-SEM) in SmartPLS. The findings confirmed the positive direct significant effect of innovativeness and Internal locus of control on entrepreneurship attitudes except for risk-taking propensity among university students in the NCR (India).

Keywords: Entrepreneurial attitude; entrepreneur traits; Risk-taking Propensity; Innovativeness; Internal locus of control; Partial Least Square-Structural Equation Modeling (PLS-SEM).

Introduction

The role of entrepreneurship is pivotal in driving economic growth, fostering job creation, spurring innovation, and facilitating the holistic development of nations (Kanoi, 2011; Audretsch, 2012). Entrepreneurship is acknowledged as a fundamental catalyst for economic advancement in both developed and developing countries (Kanoi, 2011). By providing opportunities for self-employment and driving industrialization, entrepreneurship addresses various economic challenges such as underutilized capital, regional disparities, technological stagnation, and unemployment (Kumar, 2019). Recently, entrepreneurship has gained attention in research due to its positive impact on economic development (Cardella, Hernández-Sánchez, & Sanchez Garcia, 2020). Self-employment, closely linked with entrepreneurship, is particularly important for youth employment (Koe & Majid, 2014). Therefore, understanding university students'

entrepreneurial attitudes is crucial for shaping future entrepreneurs, as they are more likely to pursue self-employment compared to older individuals (Fernandez et al., 2009). However, most studies on student perceptions of entrepreneurship focus on developed countries, with limited research in developing countries (Saygili, Ture, & Özkan, 2022; Manoj Kumar et al., 2022; Carvalho, Costa, & Mares, 2015; Räty et al., 2019).

Developing-country entrepreneurs face unique challenges, as they often lack access to government funding and face barriers associated with less mature education systems (Bosma et al., 2007). Understanding domain-specific attitudes among university students is crucial for predicting future entrepreneurial behavior (Liguori, Bendickson, & McDowell, 2018; Bar-Lev, Beimel, &Rechavi, 2019). While acknowledging the importance of entrepreneurship in economic progress, existing research has primarily concentrated on Western nations. This underscores the necessity for further empirical investigations into entrepreneurial attitudes within developing countries. (Liguori et al., 2018; Bar-Lev et al., 2019). This study seeks to forecast entrepreneurial attitudes among university students in India's National Capital Region (NCR) by examining the influence of entrepreneurial traits such as internal locus of control, innovativeness, and risk-taking propensity. This will be achieved through the utilization of Partial Least Square-Structural Equation Modeling (PLS-SEM).Additionally, gender and educational level differences will be examined using multi-group analysis in SmartPLS.

Theoretical framework and Research Hypotheses

Entrepreneurs possess distinct characteristics that set them apart from non-entrepreneurs, as noted by Mueller and Thomas (2001). Anwar and Saleem (2019) offered empirical substantiation for this idea, demonstrating that students with an inclination towards entrepreneurship demonstrate elevated levels of innovativeness, locus of control, risk-taking propensity, tolerance of ambiguity, and need for achievement, in contrast to their counterparts lacking such inclinations. Gurol and Atsan (2006) identified several personality traits among university students in Turkey, including the need for achievement, locus of control, risk-taking, inventiveness, tolerance for ambiguity, and self-confidence. This study focuses on three key personality traits—innovativeness, internal locus of control, and risk-taking propensity—and examines their impact on the attitude towards entrepreneurship (ATE) based on prior research. Additionally, it employs multigroup analysis to explore the structural relationships among these traits and ATE across gender and among undergraduate and postgraduate students.

Innovativeness (IN)

Creativity, or innovativeness, plays a crucial role in generating new and valuable ideas by leveraging existing knowledge and expertise (Zhang & Zhang, 2018). It is a key determinant of success for entrepreneurs, as it drives the entrepreneurial process (Melati et al., 2018). Entrepreneurs depend on innovation to tackle challenges, meet market demands, and pioneer the creation of novel products or services (Dimov, 2007; Ward, 2004 as cited in Melati et al., 2018), distinguishing them from managers. Utsch and Rauch (2000) emphasize the intimate connection between a company's performance and its capacity for innovation.. Moreover, Anwar and Saleem (2021) found that students inclined towards entrepreneurship exhibit higher levels of innovativeness. Innovative executives are known for their imaginative thinking, ability to introduce new products, and open up new markets (Wang et al., 2013). Therefore, the study suggests the following hypothesis:

Hypothesis 1 (H1): Innovativeness positively influences students' attitude towards entrepreneurship in the National Capital Region (NCR) of India.

Internal locus of control (IC)

Another personality attribute extensively studied and deemed crucial for entrepreneurs is locus of control. Derived from Rotter's (1966) theory, locus of control pertains to individuals' beliefs regarding their capacity to influence outcomes. Internal locus of control (IC) reflects an individual's perception of their ability, choices, and

efforts to impact outcomes independently of external factors (Okhomina, 2010 as cited in Mahmood et al., 2020). Individuals with a robust internal locus of control often embrace entrepreneurship positively, showing a natural inclination toward entrepreneurial endeavors (Robinson et al., 1991).Individuals with a stronger internal locus of control are adept at managing startup challenges, displaying purpose and confidence (Mahmood et al., 2020).Levine and Rubenstein (2017) observed through longitudinal data analysis that individuals transitioning from being employees to self-employed entrepreneurs typically exhibit weaker internal locus of control initially. Anwar and Saleem (2019) observed that entrepreneurial students often exhibit stronger internal locus of control tendencies.Based on this literature, the following hypothesis is proposed:

Hypothesis 2 (H2): Internal locus of control positively influences students' attitude towards entrepreneurship in the National Capital Region (NCR) of India.

Risk-taking propensity (RP)

Risk-taking propensity (RTP) refers to the proclivity to take chances, trust in the future, and tolerate uncertainty (Ozaralli& Rivenburgh, 2016; Wang et al., 2013). This propensity depends on an individual's capacity to handle risk under challenging or unpredictable circumstances. Mahmood, Al Mamun, and Ibrahim (2020) suggest that business owners tend to be more inclined towards moderate to high-risk taking. Entrepreneurs, distinguished from managers, demonstrate a greater propensity for risk-taking as they confront financial and other uncertainties in volatile business environments (Erdem, 2001; Littunen, 2000). Empirical evidence from various studies supports the notion that entrepreneurs exhibit a greater propensity for risk-taking compared to non-entrepreneurs (Anwar & Saleem, 2019; Cho & Lee, 2018; Thomas & Mueller, 2000). However, the association between risk-taking propensity and attitude towards entrepreneurship varies across studies, with some indicating positive effects while others showing no significant association (Cucculelli and Ermini 2013; Zhuang, Xiong, & Sun, 2022; Nabi and Lián, 2013; Widjaya et al., 2021; Zhao et al., 2010; Surie & Ashley, 2008; Karimi et al., 2012). Therefore, the subsequent hypothesis is proposed:

Hypothesis 3 (H3): Risk-taking propensity positively influences students' attitude towards entrepreneurship in the National Capital Region (NCR) of India.

Gender and Entrepreneurship

Despite the rising participation of women in global entrepreneurship, male entrepreneurs still outnumber them, reflecting persistent gender disparities in career patterns. (Shirokova, Osiyevskyy, &Bogatyreva, 2016; Zhao, Seibert, & Hills, 2005). Research in entrepreneurship aims to understand the factors and decision-making processes that influence males and females differently in their entrepreneurial participation. Kurjono et al. (2022) discovered that men's interest in entrepreneurship remained steadier than women's, which varied over time. Menzies and Tatroff (2006) found that female Canadian students were less inclined to major in entrepreneurship due to perceived personality mismatches, despite comparable risk-taking tendencies. While risk tolerance may influence gender disparities in entrepreneurial attitudes, Minniti and Nardone (2007) contend that fear of failure is a more significant determinant.

Kothari (2013) highlighted gender as a significant demographic factor influencing career choices, with females being less inclined towards entrepreneurial careers. Numerous studies support the notion that men are more predisposed to entrepreneurship than women (Daz-Garca and Jiménez-Moreno, 2010; Verheul et al., 2012; Zellweger, Sieger, & Halter, 2011; Millan et. al., 2014), although some surveys suggest a preference for entrepreneurship among women (Gaetsewe, 2018; Baliyan, Mosia, &Baliyan, 2020). However, conflicting findings exist, with studies proposing gender-neutral attitudes toward entrepreneurship (Shirokova et al., 2016; Sitaridis, 2019).Therefore, it remains unclear whether gender differences exist in attitudes toward entrepreneurship. Consequently, the study proposed the following hypothesis:

Hypothesis 4 (H4): The influence of Innovativeness, Internal locus of control, and Risk-taking propensity on Attitude towards Entrepreneurship is stronger for females than for males among students in the National Capital Region (NCR) of India.

Education and Entrepreneurship

According to studies, traditional career features like job security and longevity are no longer prioritized (Fallows and Steven, 2000). Growing numbers of graduates are turning to entrepreneurship, attracted by evolving corporate career prospects. However, job insecurity alone doesn't compel them to start businesses. Research identifies specific personality traits distinguishing entrepreneurs from others, while graduates face various hurdles in their entrepreneurial endeavors. Universities are increasingly acknowledged for their roles in promoting innovation, advancing societal shifts, and boosting industrial competitiveness (Siegel and Wright, 2015). Recent research emphasizes universities' pivotal roles in entrepreneurship system dynamics (Miller and Ács, 2017).

Studies indicate that students studying business management often hold a positive perception of small business careers (Grubb et al., 2006; Souitaris et al., 2007; Gerba, 2012, as cited in Fatoki, 2014).Entrepreneurial education programs significantly contribute to fostering entrepreneurial attitudes and intentions among students (Basu and Virick, 2008; Adebayo & Kavoos, 2016).Numerous studies have investigated entrepreneurship's origins, identifying entrepreneurial education and university environments as pivotal (Bignotti& Le Roux, 2016; Canever et al., 2017; Küttim et al., 2014; Shi et al., 2020; Vodă& Florea, 2019). Additionally, the significant influence of entrepreneurial education and training on startup development is well-recognized (Zhao et al., 2005; Saeed et al., 2015). Hence, the study formulated the subsequent hypothesis:

Hypothesis 5 (H5): The influence of Innovativeness, Internal locus of control, and Risk-taking propensity on Attitude towards Entrepreneurship is stronger for postgraduate students than for undergraduate students in the National Capital Region (NCR) of India.

Research Methodology

The study and Sample

This study focuses on university (undergraduate and postgraduate) students in the National Capital Region (NCR) of India, given that younger individuals are more inclined to pursue self-employment, and this tendency diminishes with age, as indicated by Fernandez et al. (2009). To establish a minimum suitable sample size, it is generally recommended to have at least 10 cases or observations per indicator variable (Nunnally, 1967). With a research instrument comprising 23 items, a sample size of 230 is deemed appropriate according to Nunnally (1967).Quantitative data for the study was collected using a judgmental sampling method, administering an online questionnaire to 371 college students enrolled in both private and public universities in the NCR of India. The sample consisted of 198 male students and 173 female students. Among them, 192 students were undergraduates and 179 were postgraduates. Private universities contributed 206 students to the sample, while public universities accounted for 165 students in the NCR of India.

Research Instrument

Appendix 1 provides the details of the items of each of the constructs in the study. Attitude towards entrepreneurship (ATE) refers to a person's preference for a certain thing or environment, such as feelings or behaviour, in which he or she retains something that influences the development of a positive attitude. Linan and Chen (2009) provided six items for this analysis, which were modified slightly. Various studies that have used Linan and Chen (2009) scale includes Nabi, &Liñán, (2013); Lee-Ross, (2017); Eyel, & Durmaz, (2019).Innovativeness (IN) is a term that describes a person's proclivity towards innovative and original ideas (McClelland, 1965). Six items from the Jackson Personality Inventory Scale were adapted with minimal changes for IN. Studies that have used this scale includes Mahmood, Al Mamun, & Ibrahim, (2020); Mueller, & Thomas, (2001); Mahmood, et al., (2019).

Internal locus of control (IC) refers to a person's internal understanding of their ability, decisions, and initiative, which is independent of any external influences or circumstances (Rotter, 1966). With slight changes, five items from Rotter (1966) were used. Various studies have used the scale developed by Rotter, 1966 for instance, Barbuto & Story, (2008);Dehghanzadeh et al., (2016); Galluch, (2015).Risk taking propensity (RP) refers to a person's proclivity for taking chances, uncertainty, and a sense of responsibility for the future (Chen, 2007). Six elements were taken from Otuedon (2016) and tweaked slightly. Recently, it was used by Mahmood, et al., (2020). A total of twenty three statements were used in this study, divided into four latent constructs.

Data Analysis tool

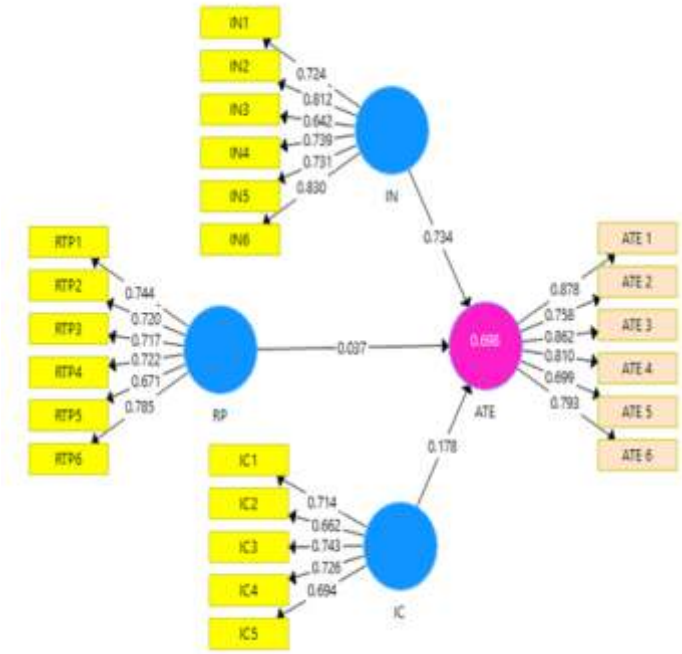
The Partial Least Square-Structural Equation Modeling (PLS-SEM) is appropriate since the study's goal is to examine a theoretical framework from a standpoint of prediction (Hair et al., 2019). Ringle et al. (2015) SmartPLS was used to analyses the data. According to Hair et al. (2014) advice's the study employed "Bootstrapping (5000 resamples) to obtain standard errors and t-statistics for hypothesis testing".

Results and Discussion

Assessment of Measurement Model

To evaluate the performance of PLS-SEM, one must first look at the measurement models. Figure 1 presents the reflective measurement model's PLS algorithm output. Hair et al. (2017b) suggest evaluating internal consistency using composite reliability, indicator reliability, and convergent validity through Average Variance Extracted (AVE). For discriminant validity, consider Fornell-Larcker criterion, cross-loadings, and Heterotrait-Monotrait (HTMT) ratio of correlations.

Figure 1. PLS algorithm output of the reflective measurement model in SmartPLS.



Note: Inner model shows the path coefficients.
Outer model shows the outer loadings.
The values in the constructs represent the coefficient of determination (R2).

Table 1 displays reliability and convergent validity. Cronbach's alphas exceeded 0.7, indicating internal accuracy reliability (Hair et al., 2006). Factor loadings surpassed 0.50, meeting convergent validity criteria (Hair et al., 2007). Composite reliability ranged from 0.834 to 0.915, meeting the 0.70 threshold. AVEs exceeded 0.50, meeting Fornell and Larcker's criterion (1981).

Table 1. Reliability and Convergent validity.

Constructs	Number of Items	Cronbach's Alpha	Composite Reliability	AVE
ATE	6	0.888	0.915	0.643
IN	6	0.842	0.884	0.561
IC	5	0.753	0.834	0.502
RP	6	0.821	0.870	0.529

Notes: ATE: Attitude Towards Entrepreneurship; IN: Innovativeness; IC: Internal Locus of Control; RP: Risk-Taking Propensity.
Source: SmartPLS output. Author's calculation.

According to Hair et al.(2011), the cross loadings of the indicators indicate that an indicator's outer loading on the related construct should be bigger than all of its other loadings on each item row. Based on the cross loadings of the indicators, Table 2 demonstrates that the data have discriminant validity.

Table 2. Cross loadings

Perspective	ATE	IC	IN	RP	Outer VIF
ATE 1	**0.878**	0.426	0.716	0.378	3.269
ATE 2	**0.762**	0.385	0.597	0.346	1.774
ATE 3	**0.862**	0.380	0.704	0.360	3.071
ATE 4	**0.809**	0.353	0.667	0.307	2.061
ATE 5	**0.697**	0.343	0.542	0.191	1.563
ATE 6	**0.792**	0.374	0.621	0.244	1.968
IC1	0.324	**0.714**	0.292	0.181	1.413
IC2	0.316	**0.662**	0.265	0.208	1.336
IC3	0.378	**0.743**	0.322	0.183	1.460
IC4	0.364	**0.726**	0.269	0.205	1.398
IC5	0.263	**0.695**	0.190	0.203	1.456
IN1	0.583	0.278	**0.724**	0.322	1.572
IN2	0.693	0.305	**0.812**	0.324	2.169
IN3	0.521	0.318	**0.642**	0.248	1.366
IN4	0.578	0.308	**0.739**	0.281	1.626
IN5	0.567	0.247	**0.731**	0.287	1.603
IN6	0.706	0.278	**0.830**	0.359	2.282
RTP1	0.310	0.215	0.369	**0.744**	1.580
RTP2	0.303	0.187	0.337	**0.720**	1.504
RTP3	0.289	0.170	0.330	**0.716**	1.485
RTP4	0.243	0.229	0.200	**0.722**	1.627
RTP5	0.259	0.198	0.249	**0.671**	1.426
RTP6	0.265	0.205	0.263	**0.785**	1.865

Notes: ATE: Attitude Towards Entrepreneurship; IN: Innovativeness; IC: Internal Locus of Control; RP: Risk-Taking Propensity
Source: SmartPLS output. Author's calculation.

Table 3 confirms discriminant validity: AVE squared values exceed squared correlations, aligning with Fornell &Larcker (1981). HTMT values below 0.90, as recommended by Gold, Malhotra, and Segars (2001), further validate discriminant validity. The study ensures reliability and validity, supporting subsequent analysis.

Table 3. Discriminant validity

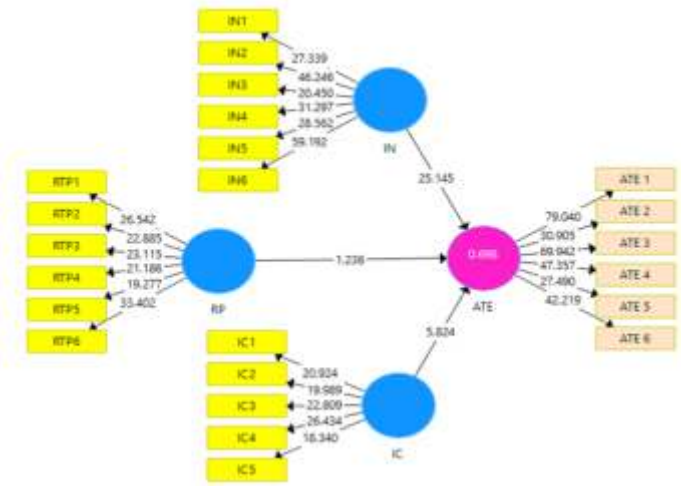
Fornell-Larcker Criterion				
	ATE	IC	IN	**RP**
ATE	0.802			
IC	0.470	0.709		
IN	0.817	0.383	0.749	
RP	0.386	0.275	0.408	0.727
HTMT				
	ATE	IC	IN	RP
ATE				
IC	0.567			
IN	0.837	0.478		
RP	0.442	0.352	0.480	

Note: ATE: Attitude Towards Entrepreneurship; IN: Innovativeness; IC: Internal Locus of Control; RP: Risk-Taking Propensity
Source: SmartPLS output. Author's calculation.

Structural Model assessment and Hypothesis testing

The study performed Partial Least Square Path Modelling (PLSPM) in SmartPLS 3.2.7 statistical package to determine the impact of Innovativeness, Internal Locus of Control and Risk-Taking Propensity on Attitude towards Entrepreneurship. Figure 2 shows the Bootstrapping results of the structural model.

Figure 2. Bootstrapping results.



Source: SmartPLS output. Author's calculation

Note: ATE: Attitude Towards Entrepreneurship; IN: Innovativeness; IC: Internal Locus of Control; RP: Risk-Taking Propensity. Inner model shows T-value. Outer model shows T-values. Constructs shows R2

Collinearity

Hair et al. (2019) stress assessing collinearity before analyzing relationships. In this study, VIF values (Table 4) below the threshold of 3.3 ensure collinearity is not problematic.

Hypothesis testing

The bootstrapping technique, as per Streukens and Leroi-Werelds (2016), using 10,000 samples without sign changes, confirmed significant relationships within the structural model. Table 4 highlights a positive association between innovativeness and attitude toward entrepreneurship among students in India's NCR. The path coefficient of 0.729 with a t-value of 24.626 and p-value of 0.000 (H1) indicates a significant impact, supported by a substantial effect size ($f2 = 1.336$, $p = 0.000$), consistent with previous research.

Regarding internal locus of control (H2), a path coefficient of 0.176, t-value of 5.668, and p-value of 0.000 demonstrate a significant positive impact on attitude towards entrepreneurship, aligning with earlier studies. Conversely, risk-taking propensity (H3a) showed a non-significant positive effect (path coefficient = 0.037, t-value = 1.218, p = 0.224), consistent with prior research's mixed findings.

Male students exhibited a significantly higher attitude toward entrepreneurship compared to female students

(H4), indicated by a path coefficient of 0.081, t-value of 2.762, and p-value of 0.006, with a small but significant effect size (f2 = 0.022, p = 0.000). This suggests a gender disparity in entrepreneurial attitudes within the NCR of India, consistent with broader gender-related findings in entrepreneurship research.

Table 4. Path coefficient parameters of the structural model

Hypo. Causal Path	β	t	Sig.	Inner VIF	R^2	$Q^2_{predict}$	f^2 (p-value)	Q^2 (blindfolding)
ATE					0.698	0.691		0.443
H1: IN → ATE	0.734	25.145	0.000	2.090			1.343 (0.000)	
H2: IC → ATE	0.178	5.824	0.000	1.900			0.088 (0.010)	
H3: RP → ATE	0.037	1.236	0.217	1.880			0.004 (0.604)	

Notes: ATE: Attitude Towards Entrepreneurship; IN: Innovativeness; IC: Internal Locus of Control; RP: Risk -Taking Propensity
Source: SmartPLS output. Author's calculation.

Explanatory power, Predictive power and fit of the Structural model

The structural model's evaluation in SEM PLS considered R2 (adjusted R2 = 0.6980), indicating 69.80% explanation of attitude variance. The model's SRMR (0.057) suggests a good fit. Q2 (0.443) exceeds 0, signifying the model's predictive relevance. Innovativeness, internal locus of control, and risk-taking propensity show substantial predictive value for entrepreneurial attitude among students in India's NCR (Table 4), aligning with assessment criteria by Hair et al. (2019) and guidelines by Henseler et al. (2014).

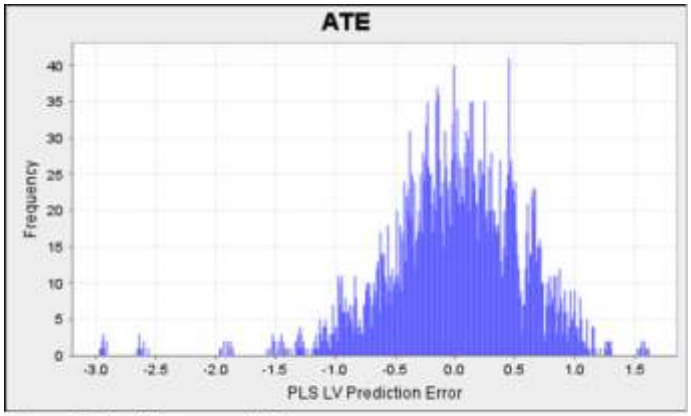


Figure 3. Prediction error-PLS
Source: SmartPLS output. Author's calculation

The PLS predict process assessed both in-sample fit and out-of-sample predictive capacity. A Q2predict > 0 surpasses benchmarks by Shmueli et al. (2016), indicating superior model performance (Table 4). While prediction errors' distribution is moderately symmetric (Figure 3), RMSE was utilized for error assessment. Comparison with naïve LM values (Shmueli et al., 2019) in Table 5 highlights predominantly negative differences for indicators (ATE2, ATE4, ATE5, and ATE6), indicating the model's strong out-of-sample predictive prowess.

Table 5: PLS predict assessment

Items	Q^2_predict (PLS SEM)	RMSE (PLS SEM)	RMSE (LM benchmark)	RMSE (PLS SEM) - RMSE (LM)
ATE 4	0.450	0.892	0.915	**-0.023**
ATE 6	0.398	0.993	1.026	**-0.033**
ATE 5	0.305	0.987	1.005	**-0.018**
ATE 1	0.590	0.835	0.833	0.002
ATE 3	0.532	0.858	0.857	0.001
ATE 2	0.382	0.860	0.879	**-0.019**

Note: ATE: Attitude Towards Entrepreneurship; IN: Innovativeness; IC: Internal Locus of Control; RP: Risk -Taking Propensity
Source: SmartPLS output. Authors calculation

MICOM-MGA

Hair et al. (2017) emphasize Multi-Group Analysis (MGA) in PLS SEM for moderation assessment across various relationships. Adequate subgroup power is crucial (Becker et al., 2013; Hair et al., 2017). G*Power analysis recommends 82 observations per group to detect a medium effect size of 0.30 at 5% significance and 80% power (Faul et al., 2007). Male (n = 198), female (n = 173), undergraduates (n = 192), and postgraduates (n = 179) sample sizes, roughly equal, meet this criterion (Aguinis et al., 2017; Cohen, 1988; Hair et al., 2017; Memon et al., 2020). Henseler et al. (2016) introduced the Measurement Invariance of Composite Models (MICOM) procedure, essential for PLSPM's composite modeling trait. Configural and compositional invariance establishment confirms partial measurement invariance, enabling path coefficient comparison with MGA (Cheah et al., 2020).

Table 6. MICOM - Compositional Invariance Assessment

	Original Correlation	Correlation Permutation Mean	5.00%	Permutation p-Values
Gender				
ATE	1	1	0.999	0.767
IC	0.997	0.995	0.987	0.709
IN	0.998	0.999	0.999	0.120
RP	0.998	0.995	0.987	0.824
Under-Postgraduates				
ATE	1	1	0.999	0.318
IC	0.996	0.995	0.987	0.516
IN	0.999	0.999	0.999	0.202
RP	0.994	0.995	0.987	0.284

Note: ATE: Attitude Towards Entrepreneurship; IN: Innovativeness; IC: Internal Locus of Control; RP: Risk -Taking Propensity.
Source: SmartPLS output. Author's calculation.

SmartPLS automatically confirms configural invariance when running the MICOM procedure.The results of MICOM - Path Coefficients revealed in Table 6 shows that all the relationship showed Permutation p-Values>0.05. Therefore, compositional invariance across gender and Under-Postgraduates was established supporting partial measurement invariance. So, group comparisons using MGA was eligible.

Table 7. MGA across gender and under-postgraduates

	Path Coefficients-diff (group 1- group 2)	p-Value original 1-tailed (group 1- group 2)	p-Value new (group 1 - group 2)
H_4: Gender (group1: males and group2: females)			
PLS-MGA			
IC -> ATE	0.102	0.053	0.106
IN -> ATE	-0.027	0.678	0.645
RP -> ATE	0.045	0.226	0.452
Parametric Test			
IC -> ATE	0.102	1.619	0.106
IN -> ATE	-0.027	0.471	0.638
RP -> ATE	0.045	0.751	0.453
Welch-Satterthwaite test			
IC -> ATE	0.102	1.634	0.104
IN -> ATE	-0.027	0.475	0.636
RP -> ATE	0.045	0.751	0.453

	Path Coefficients-diff (group 1- group 2)	p-Value original 1-tailed (group 1- group 2)	p-Value new (group 1 - group 2)
H_5: Under-Postgraduates (group1: UG and group2: PG)			
PLS-MGA			
IC -> ATE	-0.021	0.332	0.741
IN -> ATE	-0.08	1.431	0.154
RP -> ATE	0.123	2.105	0.037
Parametric Test			
IC -> ATE	-0.021	0.329	0.742
IN -> ATE	-0.08	1.416	0.158
RP -> ATE	0.123	2.107	0.036
Welch-Satterthwaite test			
IC -> ATE	-0.021	0.332	0.741
IN -> ATE	-0.08	1.431	0.154
RP -> ATE	0.123	2.105	0.037

Note: ATE: Attitude Towards Entrepreneurship; IN: Innovativeness; IC: Internal Locus of Control; RP: Risk-Taking Propensity; UG: Undergraduates; PG: Postgraduates.
Source: SmartPLS output. Author's calculation.

MGA in SmartPLS scrutinized group-specific variations. The results shown in Table 7 indicated that no relationship had a significant p-value in case of gender and under-postgraduates specific group comparison but in case of under-postgraduates, the impact of RP on ATE was significantly higher among undergraduates compared to post graduate students (see Table 7). Similar results were reported by the Parametric Test and the Welch-Satterthwaite test and bootstrapping in Table 7. On running bootstrapping, it was revealed that the impact of RP on ATE was significant among UG and it was insignificant among PG (see Table 8). Gender and educational levels showed no significant variation in the overall structural model, except for the impact of RP on ATE, which was notable among undergraduates compared to postgraduates in NCR (India). Consistent with previous studies (Nowinski et al., 2019; Shirokova et al., 2016; Sitaridis, 2019), this suggests a gender-neutral attitude toward entrepreneurship. Additionally, earlier research has observed heightened entrepreneurial tendencies among undergraduates (Ilevbare et al., 2022; Adelowo et al., 2021a, 2021b, Olofinyehun et al., 2022).

Table 8. Bootstrapping (Group Data: UG and PG)

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Undergraduates					
IC -> ATE	0.176	0.181	0.051	3.477	0.001
IN -> ATE	0.69	0.689	0.049	14.109	0
RP -> ATE	0.098	0.102	0.045	2.196	0.029
Postgraduates					
IC -> ATE	0.197	0.198	0.039	5.021	0
IN -> ATE	0.77	0.772	0.031	24.535	0
RP -> ATE	-0.025	-0.023	0.041	0.61	0.542

Note: ATE: Attitude Towards Entrepreneurship; IN: Innovativeness; IC: Internal Locus of Control; RP: Risk-Taking Propensity.
Source: SmartPLS output. Author's calculation.

The study's first hypothesis (H1) explored the influence of Innovativeness on Attitudes towards entrepreneurship. The results affirmed that university students' capacity for creative thinking and inventiveness significantly contributed to their attitude towards entrepreneurship. This finding aligns with prior research, such as Rexhepi et al. (2013), Mahmood et al. (2019), and Mahmood, Al Mamun, & Ibrahim (2020), which similarly demonstrated the positive impact of Innovativeness on entrepreneurial attitudes. Mahmood et al. (2020) further identified that innovativeness, along with internal locus of control, need for achievement, and proactive personality, significantly influenced Millennials' attitudes towards entrepreneurship.

The second hypothesis (H2) investigated the effect of Internal Locus of Control on students' attitudes towards entrepreneurship. The findings indicated a significant positive impact of internal locus of control on students' entrepreneurial attitudes in the NCR of India, consistent with previous studies highlighting the beneficial effects of internal locus of control on entrepreneurial attitudes (Khan et al., 2011; Baluku, Bantu, & Otto, 2018; Mahmood, Al Mamun, & Ibrahim, 2020). Olorunfemi (2023) underscored the role of internal locus of control and risk-taking propensity in fostering entrepreneurial success, while Voda & Florea (2019) emphasized its importance in venture creation among students.

The third hypothesis (H3) examined the impact of Risk-taking Propensity on Attitudes towards entrepreneurship among students in the NCR of India. The findings revealed a non-significant impact of Risk-taking Propensity on entrepreneurial attitudes in this context. This result is consistent with previous research indicating a non-significant effect of Risk-taking Propensity on attitudes towards entrepreneurship (Zhao et al., 2010; Surie & Ashley, 2008; Mahmood, Al Mamun, & Ibrahim, 2020). While some studies have highlighted the importance of a high risk-taking propensity in shaping entrepreneurial intentions (Steenkamp et al., 2024; Abbassi & Sta, 2019; Agustina & Fauzia, 2021; Herdjiono et al., 2017; Martínez-González et al., 2019), others have found mixed results regarding its association with entrepreneurial attitudes (Karimi et al., 2012). Karimi et al. (2012) argued that the weak predictive value of risk-taking propensity could be attributed to different individuals perceiving risk differently.

Further, in fourth and fifth hypothesis (H4 and H5), it was verified that the significant and positive impact of Innovativeness and Internal locus of Control on Attitudes towards entrepreneurship and non significant impact of Risk taking Propensity on Attitudes towards entrepreneurship was same across male and female students and also across undergraduate and postgraduate students in NCR (India) of India except for significant positive effect of Risk taking Propensity on Attitudes towards entrepreneurship among undergraduate students in NCR of India. The study is in line with the results of studies like Nowinski et al., 2019; Shirokova et al., 2016; Sitaridis, 2019 that supports that there is no gender difference in entrepreneurship and that students' attitudes toward it are gender neutral. The results corroborate the findings of earlier studies where high entrepreneurial propensities were observed among undergraduates (Ilevbare et al., 2022; Adelowo et al., 2021a, 2021b, Olofinyehun et al., 2022).

Conclusion

Entrepreneurship plays a pivotal role in driving economic growth, job creation, and societal transformation, particularly in developing economies. This study aimed to predict entrepreneurial attitudes among students in the National Capital Region (NCR) of India, revealing that students' innovativeness and internal locus of control significantly influence their attitudes toward entrepreneurship (ATE). However, the direct positive impact of risk-taking propensity on ATE was not found to be significant. Interestingly, the study also explored gender and academic level differences in these relationships, finding consistent effects across male and female students and undergraduate and postgraduate students, except for a significant positive effect of risk-taking propensity among undergraduate students. These results support the notion that entrepreneurial attitudes are gender-neutral and that undergraduates exhibit high entrepreneurial propensities. Overall, these findings contribute to the understanding of the psychological factors influencing attitudes towards

entrepreneurship among university students in the NCR of India and provide valuable insights for educators, policymakers, and practitioners aiming to foster an entrepreneurial mindset among the youth.

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Appendix 1. Measurement Scale Items

Statements for Attitude towards Entrepreneurship by Linan and Chen, 2009

1. If you have the opportunities and resources, you would love to start a business.
2. With various options available, you would rather be an entrepreneur.
3. Being an entrepreneur would give you a great satisfaction.
4. Being an entrepreneur is attractive to you.
5. Being an entrepreneur has more advantages than disadvantages.
6. Being an entrepreneur is desirable for you.

Statements for Innovativeness from Jackson Personality Inventory Scale (Jackson, 1994).

1. You often surprise people with your novel ideas.
2. People often ask you for help in planning creative activities.
3. You obtain more satisfaction from mastering a skill than coming up with a new idea.
4. You prefer a job that requires original thinking.
5. You prefer a job that demands Inventiveness.

Statements for Internal Locus of Control by Rotter, 1966

1. To a greater extent, your life is controlled by your own.
2. Your life is determined by your own actions.
3. When you get what you want, it is usually because you work hard for it.
4. When you make plans, you are almost certain that you can work them out.
5. The success of your life depends heavily on your ability.
6. You feel you are in control of your life.

Statements forRisk Taking Propensity by Otuedon, 2016

1. You are ready to take risks.
2. You are willing to take actions that result in unexpected outcomes.
3. You enjoy taking daring actions by doing precarious activities.
4. You treasure chances.
5. You are cautious about unpredictable situations.
6. You accept whatever situations involving personal risk that yield great rewards.