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Impact of social capital on entrepreneurial intention of polytechnic students: The mediating role of innovativeness

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Abstract

Entrepreneurship is seen as a crucial component of any nation's economic progress. The most significant predictor of entrepreneurship is thought to be the entrepreneurial intention. Therefore, it is crucial to understand the variables that shape entrepreneurial intent. The purpose of this study is to investigate how social capital and innovativeness, two significant predictors of entrepreneurial intention, interact to determine the entrepreneurial intention of polytechnic students from the Indian state of Arunachal Pradesh. A questionnaire based on a 5-point Likert scale was completed by 261 polytechnic students (214 male,47 female) from six polytechnic (5 Govt,1 Private) colleges across Arunachal Pradesh. The structure model was examined using structural equation modelling (SEM) analysis in SPSS AMOS (Analysis of Moment Structure), and bootstrap confidence intervals were computed to test the mediating role. The findings showed that both social capital and innovativeness have a significant positive impact on entrepreneurial intention, and innovativeness partially mediates the association between social capital and entrepreneurial intention. Our study's findings have significant ramifications for vocational educators because they show that emphasizing the importance of social capital and innovativeness might increase polytechnic students' likelihood to become entrepreneurs.

Keywords: Arunachal Pradesh, Entrepreneurial intention, India, Innovativeness, Mediation analysis, Polytechnic student, Social capital.

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1. Introduction

Entrepreneurship is a major driving force in socioeconomic progress [1, 2]. Because of their enormous contributions to economic growth, entrepreneurs play an important role in economic development. As a result, it is not surprising that the field of education, particularly vocational education, is investing in the development of mature and competitive entrepreneurial human resources [2]. Polytechnic institutes are considered an important aspect of India's (vocational) education and training system [3]. Students and young people are important in any economy because they are regarded to be the future and determinants of a country's economic viability. So, it is important to determine the factor that influences

entrepreneurship among the students of the polytechnic institute because when young people grasp the value of entrepreneurship and are willing to start their businesses, the unemployment rate can be reduced and the economy will flourish [4]. Scholars have been primarily interested in investigating the construct of entrepreneurial intention (EI, hereafter) over the last several decades [5] as it is the most important predictor of new firm formation [5-7]. Recently, research has focused on the importance of social capital in entrepreneurship [8, 9]. Social capital fosters entrepreneurship by giving individuals resources from family members, friends, the community, and society [8, 10]. On the other hand, studies have established personality characteristics as major predictors of EI [9, 11, 12]. When it comes to characterizing the entrepreneur profile, the trait of innovativeness has been prioritized [13]. Although some researchers have looked at the importance of social capital and personality characteristics in developing EI [2, 8, 14, 15] very few empirical studies have looked at how these aspects interact [9, 16]. Furthermore, after reviewing the entrepreneurship literature, it is clear that most of the research on EI in India is based on the sample collected from university students or graduate engineering students [14, 15, 17]. Despite their relevance within the system, polytechnic institutes in India have received little attention from researchers [3]. Keeping in mind the aforementioned research gaps, the purpose of this study is to investigate the mechanism of establishing a polytechnic student's EI (see, Figure 1) based on two theories of entrepreneurship, social capital theory [18] and personality characteristics theory (trait theory) [19]. The study tested the mediating effect of innovativeness on the relationship between social capital and polytechnic students' EI.

2. Literature Review and Hypotheses Development

2.1. Entrepreneurial Intention

Ajzen defines intention as the decision to carry out or refrain from carrying out an activity [20]. EI can be defined as a desire to establish your own business. It promotes self-sufficiency as well as initiative [21]. The researcher has used various approaches (cognitive, personality, environmental, social, educational, contextual, and demographic) to measure EI [22].

2.2. Social Capital and Entrepreneurial Intention

An individual's social capital consists of their whole set of personal and professional contacts [18]. It includes "social interactions and ties (e.g., family members and close friends who have entrepreneurial experience), trust relationships people have with other network members (e.g., local governments and banks), and norms that encourage entrepreneurship in the network environments"[8]. Social capital offers individuals actual and prospective entrepreneurial resources derived from the interactions between individual entrepreneurs, communities, networks, and societies. Social capital also provides access to venture capitalists, vital competitive information, and new clients [23]. Social capital is critical in the start-up phase of any firm as it allows individuals to gain confidence and create vital networks to start new businesses. Furthermore, a stable social environment enhances the possibility that individuals would leave their occupations and pursue entrepreneurship prospects, which is why new entrepreneurs typically start new enterprises in the same location where they have lived for a long time [24-26]. Several empirical studies demonstrate a strong relationship between social capital and EI [2, 9, 25]. Based on the above argument, the study presents the following hypothesis:

H1: Social capital will have a significant positive effect on polytechnic students' EI.

2.3. Social Capital and Innovativeness

Individuals with high personalities can be organically created through the development of social capital in a universal style Ullah, et al. [27]. Ma, et al. [28] noted that "from an entrepreneur's perspective, it is easy to conjecture that social capital provides entrepreneurs with a special network that facilitates the discovery of technical opportunities, as well as the identification, collection, and allocation of scarce resources by assisting with the entrepreneurial exploitation process in providing and diffusing critical information or resources, which consequently leads to more innovation and superior performance". According to the research on the importance of social capital in the creation of innovation [29-33] it was found that most innovation activities require social capital [31, 33]. As a result of the above discussion, this study makes the following hypothesis.

H2: Social capital will have a significant positive effect on polytechnic students' innovativeness.

2.4. Innovativeness and Entrepreneurial Intention

Schumpeter [34] on entrepreneurship established the necessity of innovation as a central idea of entrepreneurship, demonstrating its undeniable presence for entrepreneurial success. According to Biswas and Verma [14] the "innovativeness trait of an individual is depicted by his ability to surprise people with novel ideas, preference for work that requires original thinking, tendency to experiment with various ways of doing the same work, a constant search for better ways of approaching a problem, a habit of improvising methods of solving an issue and affinity for ambiguous and unsolved problems." Entrepreneurs, by their very nature, are continuously on the lookout for new possibilities, therefore it is reasonable to assume that they are also highly innovative [17, 35, 36]. Several studies have found a positive correlation between students' innovativeness and their EI [14, 37-39]. As a result of the above argument, the study presents the following hypothesis:

H3: Innovativeness will have a significant positive effect on the EI of polytechnic students.

H4: Innovativeness will mediate the relationship between social capital and EI.

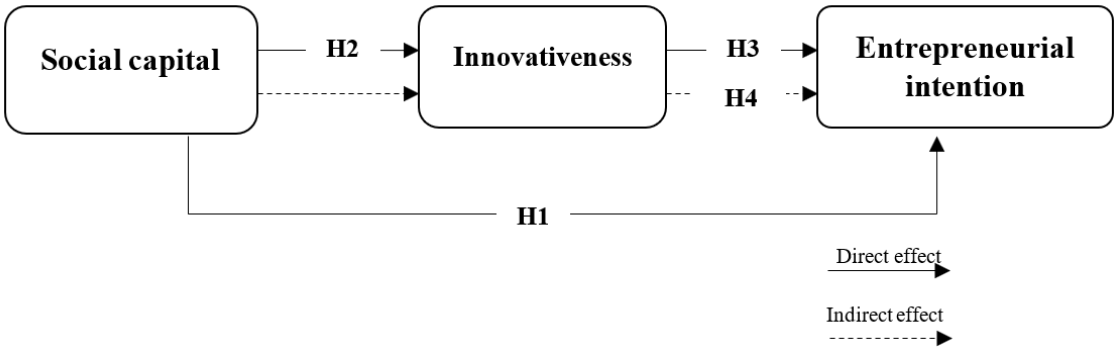

Figure 1.
Research model.

3. Research Methodology

3.1. Research Instrument

To achieve our research objective, we adopted all the constructs from the entrepreneurial literature. A pilot test was initially administered to 30 polytechnic students. The validity and reliability of the scale have already been acknowledged by the researchers as all the constructs employed in the study were adopted. We did, however, recheck the questionnaire's construct validity and content for clarification, and we were successful in achieving the pre-set magnitudes. We employed a five-point Likert-type scale, with scores ranging from 1 ("strongly disagree") to 5 ("strongly agree"). Finally, using feedback from the pilot research, we designed a questionnaire with two sections: (1) demographic information and (2) social and psychological content. Appendix 1 lists the questionnaire items along with their sources of adoption.

3.2. Survey Procedures and Respondents' Description

In this study, we have considered a population of polytechnic students from the Indian state, of Arunachal Pradesh. There are a total of six polytechnic institutes in this state, 5 of them (Rajiv Gandhi Govt. Polytechnic College, Itanagar; Govt Polytechnic College, Dirang; Govt Polytechnic College, Pasighat; Govt Polytechnic College, Roing; C.P.Namchoom Govt Polytechnic College, Namsai) are Government polytechnics and 1 is private polytechnic (Tomi Polytechnic College, Basar). We used a questionnaire as a quantitative data collection technique to achieve our research goals. Purposive sampling was employed to carry out the data collection from September 2022 to November 2022, with a target population of approximately 520 students. A total of 300 questionnaires were distributed. The respondents' mean age was 18.58 (*Standard deviation*: 2.34). Table 1 makes it abundantly evident that the survey's respondents belonged to a variety of demographic characteristics.

Table 1.
Demographic profile of the polytechnic students (N = 261).

Dimensions	Category	Frequency	Percentage
Gender	Male	214	82.0
	Female	47	18.0
Residence	Rural	164	62.8
	Urban	97	37.2
Family type	Joint	152	58.2
	Nuclear	109	41.8

3.3. Data Screening

Among 300 questionnaires only 267 were returned. The collected data was then examined to confirm that it was free of errors and fit for further research. After excluding incomplete replies and respondent misconduct, only 261 questionnaires had all required fields filled in, and these were deemed appropriate for further study. A minimum sample size of 200 has been recommended for SEM models [40, 41]. The sample size of 261 thus satisfies this criterion. Missing values were identified in the data. The largest amount of missing data was found to be 4%, which was less than the maximum allowed of 10% of responses for a given variable [15, 42, 43]. In addition, the missing data were imputed using 'regression imputation', using SPSS AMOS (version 23). To improve statistical inference, one of the basic assumptions of structural equation modelling (SEM) is that data should be normally distributed. In the current investigation, we thus examined the data for deviations from normality [15, 44, 45]. The skewness and kurtosis statistic are used to examine whether or not the responses to the variables collected from respondents are normally distributed. Statistics for skewness within the range of -2 to +2 and for kurtosis within the range of -7 to +7 indicate that the data are normally distributed and do not exceed the recommended limit for skewness and kurtosis [46, 47]. Since the data were gathered simultaneously from the same respondents for the dependent variable (i.e., EI) and independent variables (i.e., social capital, innovativeness), there was a chance that the data would be subject to common method bias [48]. To check for this type of bias, we employed Harman's single-factor test [49]. To find out whether a single component might explain the major covariance in both the dependent

and independent variables, we performed an exploratory factor analysis. It was discovered that a large covariance (30.91%) could not be explained by a single factor (Table 2).

Table 2.
Total variance explained (Harman's single factor test).

Component	Extraction sums of squared loadings		Cumulative %
1	Total	% Of variance	
	5.25	30.91	30.91%

Note: Extraction method: Principal component analysis.

4. Results

4.1. Measurement Model

To evaluate the measurement model, confirmatory factor analysis (CFA) was performed using AMOS (version 23). Factor loadings were evaluated for each item as part of CFA. Three components from social capital (S cap6, S cap7, and S cap8) were discovered to have loadings that were less than the minimally allowed value of 0.5 [50]. These three items were eliminated as a result. Modification indices were then evaluated for the re-specification of the suggested framework based on the theoretical justification [51]. Using the following indices, the final CFA findings showed a strong model fit: CMIN/df = 2.57, GFI = 0.914, TLI = 0.921, CFI = 0.939, RMSEA =0.077. Every value fell within its corresponding range of widespread acceptance [52-55]. The construct reliability was evaluated using Cronbach's alpha (α) and composite reliability (CR). A Cronbach's alpha value of 0.7 or higher [56] and a composite reliability score of 0.6 or higher [57] are both regarded as good. In this investigation, Cronbach's alpha ranged from 0.81 to 0.85, while the value of composite reliability was between 0.81 to 0.83. Hence, it was possible to trust all of the constructs and their dimensions (Table 3).

CMIN/DF: Minimum discrepancy divided by degrees of freedom, GFI: Goodness of fit index, TLI: Tucker-Lewis's index, CFI: Comparative fit index, RMSEA: Root mean square error of approximation.

Table 3.
Factor loadings, composite reliability (CR), average variance extracted (AVE), and cronbach's α.

Construct	Items	Loading	CR	AVE	Cronbach's α
EI	EI_1	0.73	0.83	0.51	0.85
	EI_2	0.83			
	EI_3	0.61			
	EI_4	0.68			
	EI_5	0.68			
S_Cap	S_Cap1	0.66	0.83	0.50	0.81
	S_Cap2	0.63			
	S_Cap3	0.66			
	S_Cap4	0.72			
	S_Cap5	0.82			
INNOV	INNOV_1	0.86	0.81	0.54	0.83
	INNOV_2	0.85			
	INNOV_3	0.58			
	INNOV_4	0.58			

Note: EI: Entrepreneurial intention, S Cap: Social capital, INNOV: Innovativeness.

The average variance extracted (AVE) and measurements of standardized factor loading were used to determine the convergent validity of all constructs. AVE values for all three constructs ranged between 0.50 to 0.54, satisfying the minimal value of 0.5 [46], and the standardized factor loading of all 14 items was determined to satisfy the minimal value of 0.5 [50]. All three notions passed the discriminant validity test according to Fornell and Larcker [58]. Table 4 shows that the square root of AVE for each construct was greater than the correlation coefficients between constructs.

Table 4.
Discriminant validity.

Constructs	EI	S_Cap	INNOV
EI	*0.71*		
S_Cap	0.40	*0.70*	
INNOV	0.39	0.33	*0.73*

Note: The diagonals represent the square root of the average variance extracted and the lower cell represents the correlation among constructs.

4.2. Hypotheses Testing

To test the robustness of the hypothesized relationships, a path model was constructed; this was followed by a calculation of the path coefficient beta weight (β) between two constructs using AMOS (version 23). It was found that there is a significant positive relation between social capital and EI ($\beta = 0.308$, $t = 3.97$, $P < 0.001$), lending credence to H1. H2 was confirmed, since there was a statistically significant positive relationship between social capital and innovativeness

among polytechnic students (β = 0.330, t = 4.46, P <0.001). Polytechnic students' EI is positively affected by their innovativeness (β = 0.293, t = 3.92, P< 0.001), lending credence to H3.

4.3. Mediation Analysis

The study investigated the role of innovativeness as a mediator between social capital and EI. The results demonstrated a positive and significant indirect influence of social capital on EI (β=0.096, P = 0.0007), confirming H4. Moreover, the direct effect of social capital on EI in the presence of innovativeness as a mediator was shown to be significant (β = 0.308, P <0.001), indicating that innovativeness partially mediated the relationship between social capital and EI. Table 5 provides an overview of the mediation analysis.

Table 5.
Summary of mediation analysis.

Relationship	DE	IE	Confidence interval		P-value	Conclusion
			LB	UB		
S_Cap>INNOV->EI	0.308 (0.000)	0.096	0.042	0.181	0.0007	Partial mediation

Note: DE: Direct effect, IE: Indirect effect, LB: Lower bound, UB: Upper bound.

5. Discussion

According to social capital theory [18], social networks are a critical resource for conducting business, and the personality approach (trait approach) of entrepreneurship [19] supports the idea that entrepreneurs possess some customized characteristics. Based on these two theories, the current study examines the impact of social capital on EI of the polytechnic students, through the mediating role of innovativeness. The study used robust empirical techniques to achieve its objectives on a sample of 261 polytechnic students from the Indian state of Arunachal Pradesh. Findings reveal a positive and significant impact of social capital on the EI of the selected population. The result supports the idea of Luo, et al. [9] that increased social capital promotes the formation of EI. The study also found a significant positive impact of social capital on proposed mediator innovativeness. It supports the view of Sanchez–Famoso, et al. [31] that the majority of activities leading to innovation rely on social capital. Results of this study also revealed that the proposed mediator, innovativeness is a positive predictor of EI which was in line with the findings of Biswas and Verma [14]; Roy, et al. [15] who found innovativeness as a major predictor of the EI of students. Our findings suggest that an increase in social capital will result in greater innovativeness, which will further increase the EI of polytechnic students.

6. Conclusion and Direction for Future Research

Increased interest in entrepreneurship as a strategy to strengthen economic competitiveness and promote regional development has given youth entrepreneurship a higher profile in several nations in recent years [59]. The results of this study are important for both research and practice in the field of entrepreneurship. Our research model makes an important theoretical contribution by showing the indirect effect of social capital on the formation of EI through innovativeness. The research findings have implications for entrepreneurial practices as well. Our research has important implications for vocational educators. The results of this study reveal that paying attention to the role of social capital and innovativeness can make polytechnic students more likely to become entrepreneurs. Although polytechnic students have the essential capital of skills to start a firm in their field of specialization, this is insufficient; vocational education practitioners must encourage innovation and create social networks with entrepreneurs which can be handled through experience-based learning techniques, such as on-campus technology entrepreneurship and venture capital, or other events, such as open dialogues with successful business people [2, 15] which will increase their social engagement with entrepreneurs and, probably they will be inspired to start successful businesses in their specialties [2].

Like any other study, this study has some limitations that needs to be fixed in future research. Firstly, the study only measured the intention to be an entrepreneur, not the actual behavior of being an entrepreneur, i.e., venturing. The proposed framework should also be tried out by actual entrepreneurs. Furthermore, when generalizing about students, it is also important to keep in mind the sample's male-to-female response ratio. Secondly, the sample consisted only students from polytechnic colleges in the Indian state of Arunachal Pradesh, which limits the generalizability of the results to other populations. Future research should broaden the sample to include college students from different countries and cultures. Finally, the study only touched upon the relationship between students' social capital and their entrepreneurial intention via the mediating variable of innovativeness. Future research should investigate the extent to which other variables moderate mediating variables, or whether there are additional mediating variables in the influence process.

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Appendix 1.
Questionnaire items and their source of adoption.

Constructs and measuring items	**Sources**
Innovativeness	[60]
1. I often surprise people with my novel ideas	
2. People often ask me for help in creative activities	
3. I am challenged by ambiguities and unsolved problems	
4. I like to experiment with various ways of doing the same thing	
Entrepreneurial intentions	[61]
1. I am ready to do anything to be an entrepreneur	.
2. My professional goal is to become an entrepreneur	.
3. I will make every effort to start and run my firm	
4. I am determined to create a firm in the future	
5. I have very seriously thought of starting a firm	
Social capital	[10]
1 Many friends have started new firms	.
2.Many of my family and kin have started new firms	.
3. Governments provide good support for those starting new firms	.
4. Banks and other investors go out of their way to help new firms	
5. Other community groups provide good support for those starting new firms	
6. Those with successful businesses get a lot of attention and admiration	
7. There are many examples of well-respected people who made a success of themselves starting a new business	.
8. Most of the leaders in this community are people who own businesses	