**ISSN** 1816-6075 (Print), 1818-0523 (Online)
**Journal of System and Management Sciences**
Vol. 14 (2024) No. 12, pp. 410-430
DOI:10.33168/JSMS.2024.1225

# Demystifying the Black Box: A Serial Multiple Mediation Examination of Antecedents Shaping Entrepreneurial Intentions Among Youth

Mihir Kumar Shome [1], Anish Kumar Bhunia [2]

[1] Department of Management and Humanities, National Institute of Technology, Arunachal Pradesh, Jote, India.

[2] Research Scholar, Department of Management and Humanities, National Institute of Technology, Arunachal Pradesh, Jote, India.

*mihir@nitap.ac.in (Corresponding author)*

**Abstract.** Individual entrepreneurial intention (EI) plays a spectacular role in the foundation of new companies, which in turn helps economic progress**.** This study tests a serial mediation model to unravel the mechanism of how locus of control (LoC) influences EI among 263 (214 Males, 49 Females) polytechnic students in India, with social capital (SC) and need for achievement (N-Ach) as sequential mediators. Data was gathered by employing purposive sampling techniques. Results of structural equation modeling (SEM) reveals LoC has a significant positive direct effect on EI. Further, LoC indirectly impacts EI through separate mediating effects of SC and N-Ach. Interestingly, a significant serial mediation of SC and N-Ach is also noted, elucidating the interconnected dynamics. Finally, certain recommendations with potential implications for vocational education professionals and policymakers are presented.

**Keywords:** Social capital, Serial mediation, Need for achievement, Locus of control, Entrepreneurial intention

# 1. Introduction

Entrepreneurship is broadly recognized as a vital economic catalyst and a driving influence in every country. It has a pivotal function in creating fresh job prospects and encouraging innovation and competition within the job market (Barba Sánchez et al., 2022; Maheshwari et al., 2022). Creating employment opportunities for the destitute is a plan to bolster the economy of any country (Muñoz & Cohen, 2018; Sampene et al., 2021, 2023).One of the biggest challenges in a developing country is being unemployed, and entrepreneurs have part of the burden of solving this problem (Biswas & Verma, 2021; Gozukara & Colakoglu, 2016; Murugesan & Jayavelu, 2017). For this reason, the present Indian government has implemented a multitude of programs and launched diverse initiatives aimed at fostering and bolstering entrepreneurship within the nation (Anwar et al., 2022). In comparison to other entrepreneurial groups, college students have a greater abundance of beneficial resource endowments. Therefore, the persistent function of fostering the efficient utilization of these resources among college students for entrepreneurial pursuits has been crucial in addressing the employment difficulties encountered by graduates and improving their overall welfare (Bu et al., 2023; Joensuu-Salo et al., 2023). Within this particular context, the concept of entrepreneurial intention (EI) is considered to be a pivotal element that has a significant impact on the decision to start a new venture (Trivedi, 2017). Asma et al.(2019) have claimed that there has been further enhancement in the EI of college students. Consequently, the examination of the primary factors affecting the entrepreneurial aspirations of college students has emerged as a significant and relevant area of research (Luo et al., 2022). Polytechnic colleges in India have significant importance within the nation's vocational education and training framework. Despite their importance within this particular system, these institutions have been subject to scant scrutiny by scholars (Schneider & Pilz, 2019). Thus far, our understanding of the foundational factors necessary for fostering effective EI among polytechnic college students remains limited. Hence, it is essential to examine the primary determinant impacting EI among students enrolled in polytechnic colleges. Historically, studies on EI have predominantly utilized personality trait-based methodologies, assuming that personality traits serve as dependable indicators of entrepreneurial inclinations (Pérez-Fernández et al., 2022). locus of control and the need for achievement are two characteristics that have been widely studied in the context of entrepreneurship research (Arkorful & Hilton, 2022; Biswas & Verma, 2021; Brockhaus, 1975; Koh, 1996; Uysal et al., 2022). The locus of control (LoC) is a pivotal factor in ascertaining an individual's inclination towards commencing a business. This term, introduced by Rotter in 1966, pertains to an individual's perception of their ability to influence and manage their daily actions and events (Alshebami & Seraj, 2022; Arkorful & Hilton, 2022). Individuals possessing a robust internal LoC tend to exhibit higher levels of EI, while those with a pronounced external LoC are less inclined to participate in entrepreneurial pursuits (Al-Qadasi et al., 2023; Lefcourt, 2014; Vodă & Florea, 2019). Furthermore, the need for achievement (N-Ach) is another significant personality characteristic that impacts an individual's choice to create a business, representing their strong desire to attain success. Individuals with a high degree of N-Ach often harbor entrepreneurial ambitions and a pronounced craving for achievement. They are motivated to demonstrate that they are capable of establishing prospering enterprises in even the most competitive markets (Karabulut, 2016). Apart from personality traits, social capital (SC) has also been acknowledged as a valuable resource for effectively mobilizing environmental resources and surmounting obstacles and challenges during the entrepreneurial journey (Davidsson & Honig, 2003). Although the relationship between SC and entrepreneurial activities has attracted considerable theoretical interest, there have been few notable contributions addressing the relationship between SC and entrepreneurship (Kim & Aldrich, 2005; Ruef, 2010; Vosta & Jalilvand, 2014). This is why in recent times, there has been a noticeable shift in academic research toward exploring the influence of SC on the entrepreneurial process (Bhunia & Shome, 2023b; Cai et al., 2021; Mahfud et al., 2020). Although the existing research (Al-Qadasi et al., 2023; Bhunia & Shome, 2023b; Biswas & Verma, 2021; Cai et al., 2021; Mahfud et al., 2020; Roy et al., 2017; Zhao et al., 2020) have evaluated the impact of LoC, SC, and N-Ach on EI, the underlying

mechanism of LoC, SC, N-Ach, in forming EI of college students remains unclear in the entrepreneurship literature. Taking this into consideration, the objective of this research is to propose and test a serial mediation model that demonstrates how LoC, N-Ach, and SC interact and collaborate to generate EI. By doing so, the study makes several key contributions. Specifically, the study first evaluated the impact of LoC on EI **(LoC-->EI)**. Second it examined the mediating role of SC between LoC and EI **(LoC-->SC-->EI)**.Third, it tested the mediating role of N-Ach between LoC and EI **(LoC--> N-Ach -->EI)** and finally investigated a chain mediating effect on the relationship between LoC and EI via N-Ach and SC **(LoC--> N-Ach -->SC-->EI)**. The conceptual research model is shown in **Figure 1**

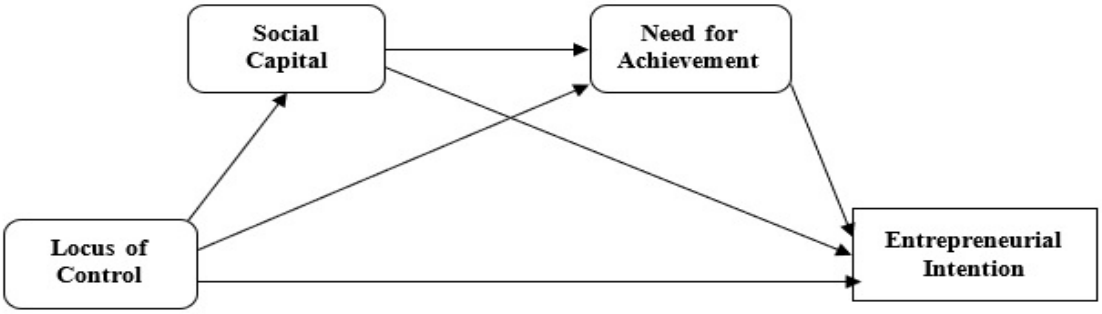


Fig.1: Conceptual Model

The theoretical lens for this study is based on a combination of the traits model of entrepreneurship (Koh, 1996) and the theory of social capital (Nahapiet & Ghoshal, 1998). The trait model is predicated on the premise that entrepreneurs possess distinctive and exceptional traits, orientations, and values that serve as motivating factors and distinguish them from others. Entrepreneurs are different from most people because they have these special traits and ways of thinking (Anwar & Saleem, 2019; Koh, 1996; Thomas & Mueller, 2000). The underlying concept of social capital theory, on the other hand, is founded on the idea that social networks are a vital asset for doing business (Nahapiet & Ghoshal, 1998; Vosta & Jalilvand, 2014).

This document is structured as follows: Section 2 outlines the theoretical background and the development of hypotheses. Section 3 delves into the research methodology. Data analysis is addressed in Section 4, while Section 5 presents the study's results. Section 6 provides a discussion of these findings. The practical implications of the study are explored in Section 7, and the article concludes with a discussion of limitations and future research directions in Section 8.

# 2. Theoretical Background and Hypothesis Development

## 2.1. Locus of Control and Entrepreneurial Intention

LoC is the inclination to perceive life events as outcomes of one's actions, creating the impression of personal control over them. Conversely, it stands in contrast to the external locus of control, which is the belief that events occur due to chance or the actions of other individuals (Keenan & McBAIN, 1979; Reknes et al., 2019; Rotter, 1966). The dominant viewpoint among scholars is that individuals who aim to pursue new business opportunities and cultivate a mindset of innovation should possess the characteristic commonly referred to as an internal LoC (Anwar & Saleem, 2019; Hansemark, 1998; Koh, 1996; Mueller & Thomas, 2001; Utsch & Rauch, 2000). Certain experts assert that individuals with an internal LoC tend to exhibit higher intelligence and excel in the processes of learning and adaptation (Biswas & Verma, 2021; Diaz, 2003; Mueller & Thomas, 2001). The existence of an internal

LoC, as indicated by an individual's fundamental assessment of their coping skills and commitment to attaining desired outcomes, can act as a motivating force in the pursuit of an entrepreneurial vocation (Roy et al., 2017). As an illustration, studies suggest that individuals who establish new business ventures often demonstrate a stronger internal LoC compared to those who are not engaged in founding such enterprises (Ahmed, 1985; Begley & Boyd, 1987; Mescon & Montanari, 1981; Prakash et al., 2015). Multiple researchers have discovered a robust association between the internal LoC and the EI of students (Biswas & Verma, 2021; Diaz, 2003; Gürol & Atsan, 2006; Mueller & Thomas, 2001). Building upon the studies mentioned earlier, the following hypothesis is proposed.

**$H_1$:** LoC will have a positive impact on the EI of Polytechnic students.

## 2.2 Mediating Role of Social Capital

SC encompasses the cumulative tangible and potential benefits that entrepreneurs obtain from their social networks (Bu et al., 2023). It consists of social interactions and connections, such as those with family and entrepreneur-savvy acquaintances. Additionally, it involves the trust forged with other members within the network, including local governments and institutions, as well as the prevalent norms that foster entrepreneurship within the network setting (Cai et al., 2021; Liao & Welsch, 2005; Nahapiet & Ghoshal, 1998). This social capital empowers individuals by providing them with valuable existing and potential entrepreneurial resources, benefiting not only individual entrepreneurs but also communities, networks, and societies as a whole. Furthermore, SC gives access to venture investors as well as critical knowledge about rivals and prospective customers (Cai et al., 2021; De Carolis et al., 2009). Several studies have shown a substantial correlation between SC and entrepreneurial conduct and intention (Ali & Yousuf, 2019; Bhunia & Shome, 2023b; Cai et al., 2021; Chia & Liang, 2016; Liao & Welsch, 2005; Mahfud et al., 2020). Individuals who possess a pronounced internal LoC tend to experience greater ease in assuming control and supervision over their own lives (Alshebami & Seraj, 2022) and demonstrate the requisite drive and motivation to competently navigate and oversee a challenging business environment (Biswas & Verma, 2021). When confronted with difficulties and challenges, individuals with an internal LoC tend to be proactive and actively seek support from their social networks (Chen & Yen, 2012). Those with an internal LoC utilize SC to compensate for any personal limitations and acquire additional information as they expand their enterprises, thereby nurturing entrepreneurial development (Hsiao et al., 2016; Obschonka et al., 2012). According to the above claims, persons with an internal LoC are more likely to have strong SC and to be proactive when seeking guidance from professionals and contacts within their social networks. Indeed, it is logical to propose that social capital can act as a mediating factor between internal LoC and EI. Drawing from this foundation, we propose the following hypothesis:

**$H_2$:** SC has a positive mediating effect between LoC and EI of polytechnic students.

## 2.3 The Mediating Role of the Need for Achievement

N-Ach could potentially serve as an additional mediator between LoC and EI. N-Ach refers to an individual's intrinsic motivation to attain success, which encompasses a deep desire and unwavering determination to accomplish prosperity. It can be understood as the propensity to engage with challenging tasks (Karabulut, 2016). This concept encompasses a strong desire for achievement and a willingness to accept genuine and beneficial criticism to foster individual development (Biswas & Verma, 2021; Hansemark, 2003; McClelland, 1987). A higher level of N-Ach equips an individual to participate in risk-taking behaviour and follow an entrepreneurial path to obtain more personal satisfaction via accomplishments (Bouarir et al., 2023; McClelland, 1961). Based on the extensive body of comparative research examining individuals in entrepreneurial and non-entrepreneurial roles, it can be deduced that the construct of N-Ach exhibits the strongest association with entrepreneurship when compared to other traits documented in the current scholarly literature (Anwar & Saleem, 2019; Hansemark, 1998; Littunen, 2000). The study revealed that individuals who have a proclivity for

entrepreneurship, in conjunction with a heightened N-Ach, show a greater propensity for embarking on entrepreneurial ventures (Biswas & Verma, 2021; Gürol & Atsan, 2006). The psychological concept of N-Ach has been recognized as a noteworthy factor influencing an individual's EI (Bouarir et al., 2023; Kristiansen & Indarti, 2004; Rokhman & Ahamed, 2015). Several pieces of research have shown a favorable link and significant influence of the N-Ach on students' EI (Biswas & Verma, 2021; Bouarir et al., 2023; Gürol & Atsan, 2006; Hansemark, 2003; Popescu et al., 2016; Turker & Selcuk, 2009; Vodă & Florea, 2019). Conversely, in line with the theoretical alignment between LoC and N-Ach, multiple studies have discovered that an internal LoC exerts a positive impact on the development of N-Ach (Abdel-Halim, 1980; Bhunia & Shome, 2023c; Sun et al., 2020; Yukl & Latham, 1978). Expanding upon this groundwork, we put forward the following hypotheses:

**$H_3$:** N-Ach has a positive mediating effect between LoC and EI of polytechnic students.

### 2.4 Serial Mediating Role of Social Capital and Need for Achievement

As outlined earlier, we contend that LoC can have a favorable impact on EI by exerting distinct mediating effects through SC and N-Ach. Despite this, some studies indicate that the relationship between LoC and EI is tenuous, suggesting the existence of other significant predictors of EI (Kristiansen & Indarti, 2004; Nasip et al., 2017). Thus, we postulate that SC may positively predict N-Ach as previous studies found SC was positively and significantly related to achievement motivation in the entrepreneurial context (Vosta & Jalilvand, 2014). Consequently, the current research establishes a connection between SC and N-Ach. It is speculated that a resilient social network can enhance people's self-esteem in the pursuit of their goals via the provision of support, mentorship, and opportunities, hence augmenting their N-Ach. Hence, it is plausible that LoC may influence EI via a mechanism that has not yet been well investigated. The theory advanced in this study posits that an individual's LoC is linked to an enhancement in their SC, which consequently results in an increased N-Ach. The heightened N-Ach is anticipated to subsequently enhance the EI of the polytechnic students. Therefore, we propose the following hypotheses:

**H4a:** SC is positively associated with N-Ach

**H4b:** LoC impacts EI through the serial mediating effect of SC and N-Ach.

## 3. Methods

### 3.1. Population, Sampling, and Data Collection

This study primarily examined a cohort of polytechnic students hailing from Arunachal Pradesh, India. Arunachal Pradesh accommodates a collective of six polytechnic institutes, of which five are under government administration. These include Rajiv Gandhi Government Polytechnic College, Itanagar; Government Polytechnic College, Dirang; Government Polytechnic College, Pasighat; Government Polytechnic College, Roing; C.P.Namchoom Government Polytechnic College, Namsai. In addition, there is a privately owned polytechnic college known as Tomi Polytechnic College, located in Basar. There were around 520 students enrolled at the polytechnics who made up the population. The present study utilizes cross-sectional data. To accomplish the objectives of our study, we collected data using a quantitative method, specifically a survey using a questionnaire as the primary instrument. This method enabled us to engage directly with the perspectives, emotions, and viewpoints of the participants, resulting in a higher response rate (Adler & Clark, 2014; Rooney & Evans, 2018; Roy et al., 2017; Yin, 1984; Zikmund et al., 2003). We initiated contact with the administration of these polytechnics to seek their consent and assistance in carrying out on-site data collection. In addition, we sought the assistance of class representatives and faculty members to facilitate the process of collecting data on-site. Before taking part in the survey, all participants were provided with an explanation of its objectives and were requested to provide their informed consent. Moreover, respondents were informed that they had the option to terminate their participation in the survey at any point and for any reason, and it was explicitly

clarified that the data collected would be exclusively utilized for academic purposes. To successfully achieve the goals of our research, we methodically incorporated various constructs extracted from relevant literature within the field of entrepreneurship. Initially, a comprehensive pilot test was conducted involving a sample of 30 polytechnic students. Given that all the constructs utilized in the study were borrowed from established sources, the research team had already affirmed the scale's validity and reliability. However, to enhance the questionnaire's quality, we reevaluated both its content and construct validity, and we were able to meet the predefined criteria effectively. To gather the required data, purposive sampling was employed. Data was collected over the period spanning from September 2022 to November 2022. The purpose of the study was to examine the EI of polytechnic students under the age of 25 years. The majority of entrepreneurial research focuses on samples of 25 years old and above (Reynolds et al., 2003). So it is crucial to pay attention to those under the age of 25 (Anwar & Saleem, 2019; Bhunia & Shome, 2023a). A total of 300 questionnaires were disseminated for data gathering. Measures were taken to increase both the rate of response and the overall level of participation (Lindell & Whitney, 2001; Roy et al., 2017) to combat the problem of non-response bias, which frequently arises when a participant decides not to complete the survey or when there are differences in responses between those who participate and those who do not (Forza, 2002). In conclusion, a comprehensive collection of 267 questionnaires was obtained, reflecting a response rate of 89%. The survey respondents displayed a variety of unique demographic features, as seen in Table 1.

Table 1: The demographic characteristics of polytechnic students (N = 263)

| Dimensions | Category | Frequency | Percentage |
|---|---|---|---|
| Gender | Male | 214 | 81.40 |
| | Female | 49 | 18.60 |
| Age | 16-18 | 152 | 57.80 |
| | 19-21 | 68 | 25.90 |
| | 22-24 | 43 | 16.30 |
| Residence | Rural | 165 | 62.70 |
| | Urban | 98 | 37.30 |
| Family Type | Joint | 153 | 58.20 |
| | Nuclear | 110 | 41.80 |
| Annual Family Income | Below Rs3.00 lakh | 212 | 80.60 |
| | Rs 3.00-Rs5.99 | 33 | 12.50 |
| | Rs 6.00lakh and above | 18 | 6.80 |

## 3.2. Measures

This research employed a five-point Likert-type scale, ranging from 1 (lowest measure) to 5 (highest measure). A self-administered structured questionnaire was constructed, consisting of two sections: (1) demographic information and (2) psychosocial content. The questionnaire's content was designed based

on the collective feedback and insights gathered from the pilot study. Appendix I offers a comprehensive list of the questionnaire items along with their respective sources of origin.

### 3.3. Control Variables

To account for the potential impact of hypothesized effects on EI (via SC and N-Ach), statistical controls were implemented for five demographic variables, namely age, gender, participants' place of residence, participants' family structure, and the Annual income of participants' families. Past research has demonstrated that these variables exert a substantial influence on SC, N-Ach, and EI (Dao et al., 2021; Gao & Qin, 2022; Iyer et al., 2005; Meece & Courtney, 2012; Nishantha, 2009; Runyan et al., 2006; Smith et al., 1995). Additionally, the variables in question were recorded as categorical data — age (1: 16 to 18 years; 2: 19 to 21 years; and 3: 22 to 24 years), gender (1—Male, and 2—Female), residence (1: Rural; and 2: Urban), and family type (1: Joint and; 2: Nuclear) of the participants.

## 4. Data Analysis

The gathered data underwent a rigorous screening procedure to validate its appropriateness for future study. The data was first examined to detect any occurrences of missing values or partial responses. The researchers noted that the highest proportion of missing data obtained was 4%, which fell below the predetermined threshold of 10% for replies on a specific variable (Cohen & Cohen, 1983; Kline, 1998; Roy et al., 2017). In addition, "Regression Imputation" was used with SPSS AMOS version 26 to impute missing data. After removing cases of respondent misconduct, and partial replies, a total of 263 questionnaires were considered suitable for further examination since they had been fully completed in all relevant areas. In terms of its depiction, this choice ensured a high grade of data quality (Elali & Al-Yacoub, 2016). To evaluate the validity of the measurement model and examine the proposed relationships, IBM SPSS Amos 26 was employed for both Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM). SEM stands out as a robust analytical approach capable of concurrently estimating multiple path relationships. What sets SEM apart from other estimation methods, such as multiple regression, is its unique combination of factor analysis and path analysis. Moreover, SEM explicitly accounts for measurement errors, making it a comprehensive and powerful tool for statistical analysis (Hair et al., 2019; Trivedi & Pattusamy, 2022). When doing research with SEM, it is advisable to collect data from a minimum of 200 samples (Bhunia & Shome, 2023a; Boomsma, 1983; Kline, 2011). The fulfillment of this condition is achieved when a sample size of 263 is used. One of the fundamental assumptions of SEM is that the data adhere to a normal distribution, which increases the validity of statistical inference (Baumgartner & Homburg, 1996; Shook et al., 2004). Given that the skewness statistic falls within the range of -2 to +2 and the kurtosis statistic falls within the range of -7 to +7, it is assumed that the data follow a normal distribution (Byrne, 2013; Hair et al., 2010). Since data for the dependent variable (i.e. EI) and independent variables (i.e. LoC, SC, and, N-Ach) were collected simultaneously from the same respondent in our study, there was a chance that the data were susceptible to a Common Method Bias (CMB) (Chang et al., 2010). Using Harman's one-factor test, the presence of CMB was determined (Podsakoff & Organ, 1986). Hence, we conducted an exploratory factor analysis to ascertain whether a single factor could explain the substantial covariance among the dependent and independent variables (Roy et al., 2017). It was found that the single-factor structure was incapable of explaining a significant covariance (25.878%). This demonstrated conclusively that CMB was not a cause for concern. Subsequently, we employed AMOS version 26 software to analyze the collected data. The research used a two-step technique, as recommended by Anderson & Gerbing (1988). Initially, a measuring model was developed to assess the conceptual model's validity and dependability. Following that, a structural model was created to assess model fit and verify the given hypotheses.

# 5. Results

## 5.1. Measurement Model: Reliability and Validity

At the outset, we constructed measurement models to assess the psychometric properties of the measured constructs. This was accomplished by CFA on the observed items within the constructs. These were important for confirming the validity and reliability of the items used to assess the constructs under study (Hair et al., 2019; Sharma & Yukhymenko-Lescroart, 2022). This approach aimed to determine whether the individual items adequately converge with their respective constructs (Anwar et al., 2020). The initial CFA results indicated a poor fit of the model, as evidenced by the following indices: CMIN/df = 3.004, GFI = 0.828, TLI = 0.792, CFI = 0.819, RMSEA = 0.087; Examining the factor loadings of individual items was used to evaluate their reliability. It was found that 3 items from SC (S_cap6, S_cap7, S_cap8) and one item each from LoC (LoC_2) and N-Ach ( N_Ach2) have a standardized factor loading below the threshold value of 0.5 (Kline, 2015). Consequently, these five items were removed. The modification indices were later examined to evaluate prospective modifications to the proposed framework, driven by theoretical rationale (Anderson & Gerbing, 1988). Following the implementation of modification indices, there was an enhancement in the model's fitness indices (Fig 2). The final CFA had a more favorable model fit (Hu & Bentler, 1999; Shevlin & Miles, 1998; Wheaton et al., 1977) with the following indices: CMIN/df = 2.029, GFI = 0.913, TLI = 0.928, CFI = 0.942, and RMSEA = 0.062. The assessment of construct reliability was conducted by using two measures, namely composite reliability (CR) and Cronbach's alpha (α). A CR score equal to or beyond 0.6 (Bagozzi & Yi, 1988), as well as a Cronbach's alpha score equal to or exceeding 0.7 (Gefen et al., 2000), are generally regarded as excellent. The current study observed a range of CR values between 0.769 and 0.848, as well as a range of Cronbach's alpha values between 0.766 and 0.855. Consequently, all of the constructs and their respective dimensions exhibited a high level of reliability (Table 2). The convergent validity of all constructs was confirmed through the use of standardized factor loading measurements and the calculation of average variance extracted (AVE). All 16 items displayed standardized factor loadings exceeding the minimum threshold of 0.5 (Kline, 2015). Additionally, the average variance extracted (AVE) values for all five constructs consistently surpassed the minimum threshold of 0.5 (Hair et al., 2010), ranging between 0.509 and 0.566. All four constructs passed the Fornell & Larcker (1981) criteria for discriminant validity. The values of correlation across constructs were determined to be more than the square root of AVE for each construct, as shown in Table 3.

Table 2: Results of the CFA

| Construct | Item | Factor Loadings | CR | AVE | Cronbach's α |
|---|---|---|---|---|---|
| EI | EI_1 | 0.579 | 0.833 | 0.509 | 0.843 |
| | EI_2 | 0.639 | | | |
| | EI_3 | 0.540 | | | |
| | EI_4 | 0.869 | | | |
| | EI_5 | 0.871 | | | |
| N_Ach | N_Ach1 | 0.717 | 0.769 | 0.528 | 0.766 |
| | N_Ach3 | 0.797 | | | |
| | N_Ach4 | 0.661 | | | |
| LoC | LoC_1 | 0.674 | 0.790 | 0.566 | 0.772 |
| | LoC_3 | 0.614 | | | |
| | LoC_4 | 0.931 | | | |
| SC | S_cap1 | 0.636 | 0.848 | 0.535 | 0.855 |

| | |
|---|---|
| S_cap2 | 0.510 |
| S_cap3 | 0.811 |
| S_cap4 | 0.893 |
| S_cap5 | 0.747 |

Table 3. Test of Discriminant Validity

| Constructs | EI | N_Ach | LoC | SC |
|---|---|---|---|---|
| EI | ***0.713*** | | | |
| N_Ach | 0.376 | ***0.726*** | | |
| LoC | 0.313 | 0.257 | ***0.752*** | |
| SC | 0.317 | 0.272 | 0.223 | ***0.731*** |

**Notes:** The diagonals represent the square root of AVE and the lower cell represents the correlation among constructs.

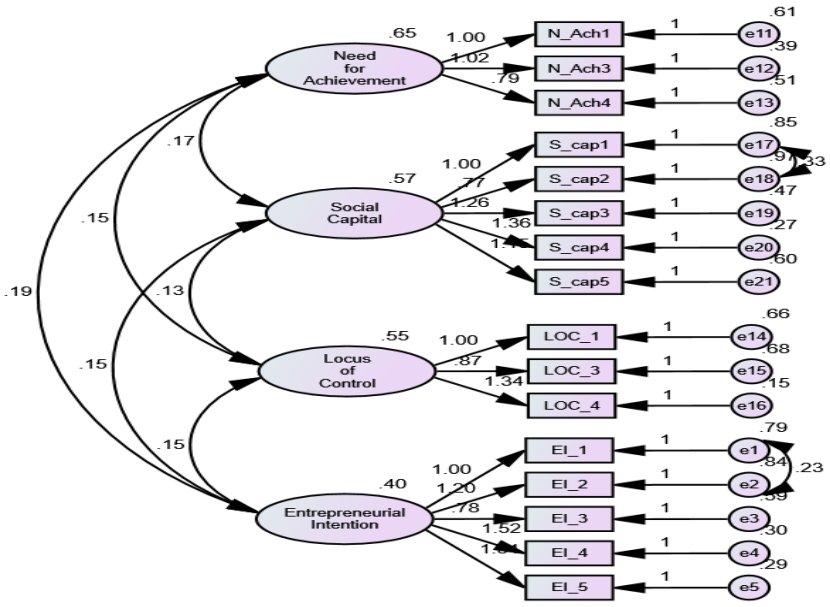


Fig 2: Measurement Model

## 5.2. Structural Model Analysis

To assess the significance of the proposed hypothesis pathways and validate the accuracy of our model's

predictions, we employed a structural model. The hypothesized paths were estimated using the Maximum Likelihood Estimation (MLE) technique.MLE is a widely utilized estimation technique known for delivering precise results when applied in stable conditions (Hair et al., 2019; Trivedi & Pattusamy, 2022).

### 5.2.1. Direct Effects

We formulated a path model based on the proposed hypotheses and gauged the strength of the relationship by calculating the path coefficient, represented as the beta weight (β), between the two constructs. We considered statistical significance to exist when the p-value fell below the threshold of 0.05. To ensure that the structural model exhibited a strong fit we also carried out further evaluations; the results showed a good model fit (CMIN/df = 1.858, GFI = 0.905, TLI = 0.910, CFI = 0.932, RMSEA = 0.057). It was found that LoC had a significant positive impact on the EI (β=0.108, P<0.05) and SC was significantly positively associated with N-Ach (β=0.251, P<0.01). Thus $\mathbf{H_1}$ and $\mathbf{H_{4a}}$ were supported.

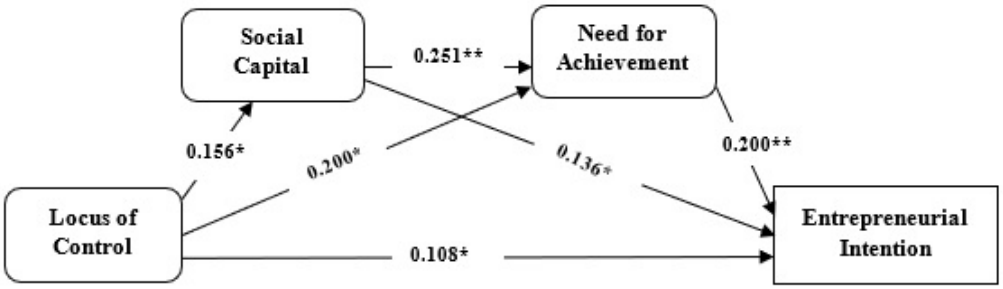


Fig.3: Structural Model

**Note:** Arrows indicate statistically significant paths (* p < 0.05, ** p < 0.01).

### 5.2.2. Indirect Effects

An often-used statistical method is a mediating-effect analysis, which investigates how the independent variable influences the dependent variable through intermediary factors (Yang et al., 2023). Furthermore, SEM is a potent method for providing solid proof of mediating effects (Little et al., 2007; Yang et al., 2023). The indirect effects were examined using the bias-corrected percentile technique, using 5000 bootstrap iterations (Tofighi & Kelley, 2020). At first, we test the mediating effect of SC between LoC and EI. We found that the indirect effect of LoC on EI via SC was significant ( β=0.021, P<0.05). Next, we found that N-Ach has a positive mediating effect (β= 0.040, P<0.01) between LoC and EI. Furthermore, it was found that the indirect effect of LoC on EI through the serial mediating effect of SC and N-Ach was significant (β=0.007, P<0.01).In all cases the direct effect of LoC on EI in the presence of mediator SC or/and N-Ach was significant (β=0.108, P<0.05). So the mediation and serial mediation effects were partial.Thus $\mathbf{H_2}$ ,$\mathbf{H_3}$ ,and $\mathbf{H_{4b}}$ were supported. The summary of structural model results is presented in **Table 6**

Table 6. Summary of Structural Model Results

| Path | Direct Effect | | P Value | Indirect Effect | | P Value |
|---|---|---|---|---|---|---|
| | β | 95% CI | | β | 95% CI | |
| LoC →EI | 0.108 | [0.012, 0.210] | 0.030 | | | |
| SC→ N-Ach | 0.251 | [0.095, 0.410] | 0.001 | | | |
| LoC → SC →EI | | | | 0.021 | [0.002, 0.060] | 0.024 |
| LoC → N-Ach→ EI | | | | 0.040 | [0.008, 0.102] | 0.008 |
| LoC→ SC→ N-Ach→EI | | | | 0.007 | [0.001, 0.024] | 0.005 |

**Note:** CI, confidence interval. Indirect effect values were calculated through a bootstrapping technique involving 263 cases and 5000 bootstrap samples.

Additionally, this research also examined the potential influence of control variables, including age, gender, residence, and family type of the participants. It was found that among four control variables gender (β=0.341, P<0.01) and family type (β= -0.309, P<0.01) had a significant impact on SC. Only age (β=0.169, P<0.01) had a significant impact on N-Ach, and age (β=0.124, P<0.05), and gender (β=0.475, P<0.001) had a significant impact on EI.

## 6. Discussion

In the current world, entrepreneurship has an undeniable impact on society since it is directly linked to a country's progress on both the economic and social fronts (Pandit et al., 2018). India is renowned for having the highest proportion of young individuals globally, yet it has considerable obstacles associated with the escalating rates of unemployment among its younger population. The prevailing concern may mostly be ascribed to a dearth of competencies and a limited understanding of entrepreneurship among the younger demographic (Jena, 2020). Engaging in entrepreneurial activities is a deliberate and voluntary choice. Consequently, it is crucial to cultivate a more profound comprehension of the motivational mechanisms involved in a volitional behaviour, such as entrepreneurship (Al-Jubari, 2019). Several studies have shown EI as a very influential factor in predicting entrepreneurial activities and behaviours (Arasti et al., 2012; Autio et al., 2001; Krueger Jr et al., 2000; Maheshwari et al., 2022). Given the positive outcomes linked to entrepreneurial actions, both academics and policymakers are keen to gain a comprehensive understanding of EI (Amofah & Saladrigues, 2022; Hossain et al., 2023). While a multitude of factors are influential in the choice to pursue entrepreneurship, our primary emphasis was placed on examining the precise mechanism through which LoC, N-Ach, and SC interrelate and affect EI. This research introduces a serial mediation model aimed at illustrating the interconnectedness and cooperative effects of LoC, N-Ach, and SC in generating EI. The current study drew upon two prominent theoretical frameworks, namely the traits model of entrepreneurship (Koh, 1996) and the theory of social capital (Nahapiet & Ghoshal, 1998). The results of this investigation have a wide range of theoretical ramifications. First, the study found LoC had a significant positive impact (β=0.108, P<0.05) on the EI of Polytechnic students. which confirmed $\mathbf{H_1}$.Individuals who possess a strong LoC can exert control and effectively manage many aspects of their lives. Consequently, they tend to exhibit higher ambitions towards entrepreneurship. The results align with previous research (Mohamed et al., 2023; Roy et al., 2017; Biswas & Verma, 2021; Gürol & Atsan, 2006; Díaz-García & Jiménez-Moreno, 2010; Mueller & Thomas, 2001) had provided evidence for the significant positive impact of LoC on EI in student population. Second SC partially mediates the relationship between LoC and EI (β=0.021, P<0.05) and supports $\mathbf{H_2}$. This finding partially supports previous research done by Hsiao et al.(2016) who discovered SC as a full mediator in the relationship between LoC and entrepreneurship. This could be because individuals with a high LoC tend to approach challenges with

a positive mindset and proactively seek support from friends or experts to gain additional SC. By using their SC and tapping into their network of connections, individuals might identify entrepreneurial prospects that foster entrepreneurship and facilitate the attainment of entrepreneurial objectives (Burt Ronald, 1992; Hsiao et al., 2016; Luthans et al., 2006).Third we found that N-Ach has a positive mediating effect ($\beta$= 0.040, P<0.05) between LoC and EI,confirmed $\mathbf{H_3}$.The outcome aligns with prior research (Sun et al., 2020) findings, indicating that LoC will assist in the growth of N-Ach and N-Ach will further increase EI (Bouarir et al., 2023; Karabulut, 2016; Sun et al., 2020; Vodă & Florea, 2019).Forth, we found that SC had a significant positive impact ($\beta$=0.251, P<0.05) on N-Ach,supports $\mathbf{H_{4a}}$.This finding aligns with Vosta & Jalilvand's (2014) concepts, which propose that SC can elucidate the variances in psychological characteristics among entrepreneurs, such as their level of achievement motivation. Finally, the study's hypothesis $\mathbf{H_{4b}}$ received support as results showed that in the link between LoC and EI, SC and N-Ach perform partial serial mediating ($\beta$=0.007, P<0.05) roles. Students with a strong internal LoC are more likely to demonstrate a higher SC as a result of collaborative efforts, which in turn increases their N-Ach and, eventually, their EI. To our knowledge, this research represents the initial effort to investigate the sequential mediating role of SC and N-Ach in the connection between LoC and EI. The outcomes of our research offer fresh insights into the underlying mechanisms of LoC, SC, N-Ach, and the development of EI.

# 7. Practical Implications

In addition to its theoretical ramifications, this work offers useful insights for policymakers, vocational education practitioners, academics, college students, and other relevant stakeholders. First and foremost, the results reveal that personality traits, LoC, exert a significant influence on EI which suggests that persons with a strong sense of loC, characterized by their determination and willpower, are more likely to have a greater propensity for participating in entrepreneurial activities. So entrepreneurial curricula should incorporate discussions on LoC to acquaint students with the dynamics of their surroundings. This can help them acquire the skills to assert control and proactively create opportunities within their environments (Arkorful & Hilton, 2022). Second, we found SC partially mediates the relationship between LoC and EI. Therefore, apart from emphasizing building LoC, it is also crucial for vocational education practitioners to develop an educational model that incorporates the involvement of business experts in on-campus teaching. This method may include the inclusion of guest lectures offered by successful entrepreneurs. This program provides students with significant benefits in terms of acquiring unique experiences, assimilating practical knowledge, and engaging with the challenges and barriers faced by entrepreneurs in the real world. As a result, students have the opportunity to enhance their social connections with professionals in the business field. Ideally, this exposure will catalyze their drive to seek entrepreneurial success in their areas of expertise (Mahfud et al., 2020). Third, our findings indicate that N-Ach plays a constructive mediating role between LoC and EI. As a result, it becomes crucial to encourage N-Ach and nurture a robust LoC. This can be effectively realized through the implementation of a purposeful entrepreneurial curriculum centered on practical, student-centric teaching methods. By doing so, the potential for significant and beneficial outcomes, such as the advancement of students' ambitions and actions in pursuit of entrepreneurial goals, becomes attainable (Nunfam et al., 2021). Fourth, it was noted that SC had a significant and positive impact on the N-Ach. Therefore, the enhancement of SC via the earlier-mentioned method may be seen as a possible strategy to promote the growth of N-Ach. Finally, the results of the research indicate that SC and N-Ach play a role as partial serial mediators in the association between LoC and EI. Hence, by prioritizing the aforementioned elements, vocational educators can augment students' LoC. Consequently, this will probably result in a more robust sense of SC among students, as a result of their collective efforts. This, in turn, is expected to enhance their N-Ach, eventually leading to heightened EI.

## 8. Limitations and Future Direction

Similar to all exploratory investigations, this research comes with its own set of limitations. First, the sample size in this study was quite limited, consisting of only 263 participants restricted to polytechnic students from Arunachal Pradesh, India, and therefore, People with different backgrounds, such as graduate engineering students, were purposefully left out of the study scope. In future research endeavors, it is recommended to broaden the sample to include graduate college students from various disciplines, originating from diverse states and cultures.The second limitation may involve measuring EI rather than actual entrepreneurial behavior, such as real venturing activities. Third, the present study employs a cross-sectional design, making it unable to establish causal relationships. Future researchers could consider utilizing longitudinal data and quasi-experimental research designs to establish causal connections (EAGLY, 2009; Roy et al., 2017). Lastly, this study exclusively examines SC and N-Ach as mediating and serial mediating variables in the relationship between polytechnic students' LoC and EI. Further investigation in the future is necessary to determine whether additional mediating variables exist in the process of influence or if other variables serve as moderators for mediating variables.

## References

Abdel-Halim, A. A. (1980). Effects of person-job compatibility on managerial reactions to role ambiguity. *Organizational Behavior and Human Performance*, *26*(2), 193–211.

Adler, E. S., & Clark, R. (2014). *An invitation to social research: How it's done*. Cengage Learning.

Ahmed, S. (1985). NAch, risk-taking propensity, locus of control and entrepreneurship. *Personality and Individual Differences*, *6*(6), 781–782.

Akhtar, S., Albarrak, M., Ahmad, A., Akram, H., & Ciddikie, M. (2022). Drivers of Student Entrepreneurial Intention and the Moderating Role of Entrepreneurship Education: Evidence from an Indian University. *Discrete Dynamics in Nature and Society*, *2022*, 1–15.

Ali, A., & Yousuf, S. (2019). Social capital and entrepreneurial intention: Empirical evidence from rural community of Pakistan. *Journal of Global Entrepreneurship Research*, *9*(1), 1–13.

Al-Jubari, I. (2019). College students' entrepreneurial intention: Testing an integrated model of SDT and TPB. *Sage Open*, *9*(2), 1–15.

Al-Qadasi, N., Zhang, G., Al-Awlaqi, M. A., Alshebami, A. S., & Aamer, A. (2023). Factors influencing entrepreneurial intention of university students in Yemen: The mediating role of entrepreneurial self-efficacy. *Frontiers in Psychology*, *14*, 1111934.

Alshebami, A. S., & Seraj, A. H. A. (2022). Exploring the influence of potential entrepreneurs' personality traits on small venture creation: The case of Saudi Arabia. *Frontiers in Psychology*, *13*.

Amofah, K., & Saladrigues, R. (2022). Impact of attitude towards entrepreneurship education and role models on entrepreneurial intention. *Journal of Innovation and Entrepreneurship*, *11*(1), 1–30.

Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, *103*(3), 411-423.

Anwar, I., & Saleem, I. (2019). Exploring entrepreneurial characteristics among university students: An evidence from India. *Asia Pacific Journal of Innovation and Entrepreneurship*, *13*(3), 282-295

Anwar, I., Saleem, I., Islam, K. B., Thoudam, P., & Khan, R. (2020). Entrepreneurial intention among female university students: Examining the moderating role of entrepreneurial education. *Journal for International Business and Entrepreneurship Development*, *12*(4), 217–234.

Anwar, I., Thoudam, P., & Saleem, I. (2022). Role of entrepreneurial education in shaping entrepreneurial intention among university students: Testing the hypotheses using mediation and moderation approach. *Journal of Education for Business*, *97*(1), 8–20.

Arasti, Z., Pasvishe, F. A., & Motavaseli, M. (2012). Normative institutional factors affecting entrepreneurial intention in Iranian information technology sector. *Journal of Management and Strategy*, *3*(2), 16-24.

Arkorful, H., & Hilton, S. K. (2022). Locus of control and entrepreneurial intention: A study in a developing economy. *Journal of Economic and Administrative Sciences*, *38*(2), 333–344.

Asma, Peng, X., Hassan, S., Akhtar, S., Sarwar, A., Khan, M. A., & Khan, B. U. (2019). Determinants of social entrepreneurial intentions for educational programs. *Journal of Public Affairs*, *19*(2), e1925.

Autio, E., H. Keeley, R., Klofsten, M., GC Parker, G., & Hay, M. (2001). Entrepreneurial intent among students in Scandinavia and in the USA. *Enterprise and Innovation Management Studies*, *2*(2), 145–160.

Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, *16*(1), 74–94.

Barba Sánchez, V., Mitre Aranda, M., & Brío González, J. Á. del. (2022). The entrepreneurial intention of university students: An environmental perspective. *European Research on Management and Business Economics*, *28*(2), 47–56.

Baumgartner, H., & Homburg, C. (1996). Applications of structural equation modeling in marketing and consumer research: A review. *International Journal of Research in Marketing*, *13*(2), 139–161.

Begley, T. M., & Boyd, D. P. (1987). Psychological characteristics associated with performence in entrepreneurial firms and smaller businesses. *Journal of Business Venturing*, *2*(1), 79–93.

Bergner, S., Auburger, J., & Paleczek, D. (2021). The why and the how: A nexus on how opportunity, risk and personality affect entrepreneurial intention. *Journal of Small Business Management*, *0*(0), 1–34.

Bhunia, A. K., & Shome, M. K. (2023a). An Empirical Comparative Study Between the Theory of Planned Behavior and Psychological Capital in Predicting Entrepreneurial Intention. *Journal of System and Management Sciences*, *13*(4), 447–468.

Bhunia, A. K., & Shome, M. K. (2023b). Impact of social capital on entrepreneurial intention of polytechnic students: The mediating role of innovativeness. *International Journal of Innovative Research and Scientific Studies*, *6*(2), 358–365.

Bhunia, A. K., & Shome, M. K. (2023c). Interrelation Between Personality Characteristics and Social Capital in Formation of Entrepreneurial Intention: A Conceptual Framework. *International Journal of Professional Business Review*, *8*(3), e01124–e01124.

Biswas, A., & Verma, R. K. (2021). Attitude and alertness in personality traits: A pathway to building entrepreneurial intentions among university students. *The Journal of Entrepreneurship*, *30*(2), 367–396.

Boomsma, A. (1983). *On the robustness of LISREL (maximum likelihood estimation) against small sample size and nonnormality.* University of Groningen.

Bouarir, H., Diani, A., Boubker, O., & Rharzouz, J. (2023). Key Determinants of Women's Entrepreneurial Intention and Behavior: The Role of Business Opportunity Recognition and Need for Achievement. *Administrative Sciences*, *13*(2), 33.

Brockhaus, R. H. (1975). *IE locus of control scores as predictors of entrepreneurial intentions. 1975*(1), 433–435.

Bu, Y., Li, S., & Huang, Y. (2023). Research on the influencing factors of Chinese college students' entrepreneurial intention from the perspective of resource endowment. *The International Journal of Management Education*, *21*(3), 100832.

Burt Ronald, S. (1992). *Structural holes: The social structure of competition*.

Byrne, B. M. (2013). *Structural Equation Modeling With AMOS: Basic Concepts, Applications, and Programming, Second Edition* (2nd ed.). Routledge.

Cai, W., Gu, J., & Wu, J. (2021). How entrepreneurship education and social capital promote nascent entrepreneurial behaviours: The mediating roles of entrepreneurial passion and self-efficacy. *Sustainability*, *13*(20), 11158.

Cassidy, T., & Lynn, R. (1989). A multifactorial approach to achievement motivation: The development of a comprehensive measure. *Journal of Occupational Psychology*, *62*(4), 301–312.

Chang, S. J., Van witteloostuijn, A., & Eden, L. (2010). Common method variance in international business research. *Journal of International Business Studies*, *2*(41), 178–184.

Chen, H., & Yen, J. (2012). *The relationship of personality, human capital, social capital and entrepreneurship*. 2012 Health and Management Conference, Taipei.

Chia, C.-C., & Liang, C. (2016). Influence of Creativity and Social Capital on Entrepreneurial Intention of Tourism Students. *Journal of Entrepreneurship, Management and Innovation*, *12*(2), 151–168.

Cohen, J., & Cohen, P. (1983). Applied multiple regression/correlations analysis for thebehavioral sciences. *Hillsdale, NJ: Lawrence Eribaum Associates*.

Dao, T. K., Bui, A. T., Doan, T. T. T., Dao, N. T., Le, H. H., & Le, T. T. H. (2021). Impact of academic majors on entrepreneurial intentions of Vietnamese students: An extension of the theory of planned behavior. *Heliyon*, *7*(3), e06381.

Davidsson, P., & Honig, B. (2003). The role of social and human capital among nascent entrepreneurs. *Journal of Business Venturing*, *18*(3), 301–331.

De Carolis, D. M., Litzky, B. E., & Eddleston, K. A. (2009). Why networks enhance the progress of new venture creation: The influence of social capital and cognition. *Entrepreneurship Theory and Practice*, *33*(2), 527–545.

Diaz, F. (2003). Locus of control, nAch and values of community entrepreneurs. *Social Behavior and Personality: An International Journal*, *31*(8), 739–747.

Díaz-García, M. C., & Jiménez-Moreno, J. (2010). Entrepreneurial intention: The role of gender. *International Entrepreneurship and Management Journal*, *6*, 261–283.

EAGLY, W. W. A. H. (2009). Advantages of certainty and uncertainty. *The Handbook of Research Synthesis and Meta-Analysis*, 455.

Elali, W., & Al-Yacoub, B. (2016). Factors affecting entrepreneurial intentions among Kuwaitis. *World Journal of Entrepreneurship, Management and Sustainable Development*, *12*(1), 18–34.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, *18*(1), 39–50.

Forza, C. (2002). Survey research in operations management: A process-based perspective. *International Journal of Operations & Production Management*, *22*(2), 152–194.

Gao, Y., & Qin, X. (2022). Entrepreneurship education and entrepreneurial intention of Chinese college students: Evidence from a moderated multi-mediation model. *Frontiers in Psychology*, *13*.

Gefen, D., Straub, D., & Boudreau, M.-C. (2000). Structural equation modeling and regression: Guidelines for research practice. *Communications of the Association for Information Systems*, *4*(1), 7.

Gozukara, I., & Colakoglu, N. (2016). Enhancing entrepreneurial intention and innovativeness of university students: The mediating role of entrepreneurial alertness. *International Business Research*, *9*(2), 34–45.

Gürol, Y., & Atsan, N. (2006). Entrepreneurial characteristics amongst university students: Some insights for entrepreneurship education and training in Turkey. *Education+ Training*, *48*(1), 25-38.

Hair, J., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis* (7th ed.). Pearson Educational International.

Hair, J. F., Black, W., Babin, B., & Anderson, R. (2019). Multivariate data analysis (8. Baskı). *Eight Edition, Cengage: Learning EMEA*.

Hansemark, O. C. (1998). The effects of an entrepreneurship programme on need for achievement and locus of control of reinforcement. *International Journal of Entrepreneurial Behavior & Research*, *4*(1), 28–50.

Hansemark, O. C. (2003). Need for achievement, locus of control and the prediction of business start-ups: A longitudinal study. *Journal of Economic Psychology*, *24*(3), 301–319.

Hossain, M. I., Tabash, M. I., Siow, M. L., Ong, T. S., & Anagreh, S. (2023). Entrepreneurial intentions of Gen Z university students and entrepreneurial constraints in Bangladesh. *Journal of Innovation and Entrepreneurship*, *12*(1), 1–34.

Hsiao, C., Lee, Y.-H., & Chen, H.-H. (2016). The effects of internal locus of control on entrepreneurship: The mediating mechanisms of social capital and human capital. *The International Journal of Human Resource Management*, *27*(11), 1158–1172.

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1–55.

Iyer, S., Kitson, M., & Toh, B. (2005). Social capital, economic growth and regional development. *Regional Studies*, *39*(8), 1015–1040.

Jena, R. K. (2020). Measuring the impact of business management Student's attitude towards entrepreneurship education on entrepreneurial intention: A case study. *Computers in Human Behavior*, *107*, 106275.

Joensuu-Salo, S., Peltonen, K., & Hämäläinen, M. (2023). The importance of HEI managerial practices in teachers' competence in implementing entrepreneurship education: Evidence from Finland. *The International Journal of Management Education*, 100767.

Karabulut, A. T. (2016). Personality traits on entrepreneurial intention. *Procedia-Social and Behavioral Sciences*, *229*, 12–21.

Keenan, A., & McBAIN, G. D. M. (1979). Effects of Type A Behaviour, Intolerance of Ambiguity, and Locus of Control on the Relationship Between Role Stress and Work-Related Outcomes. *Journal of Occupational Psychology*, *52*(4), 277–285.

Kim, P. H., & Aldrich, H. E. (2005). Social capital and entrepreneurship. *Foundations and Trends® in Entrepreneurship*, *1*(2), 55–104.

Kline, R. B. (1998). *Principles and Practice of Structural Equation Modeling*. The Guilford Press.

Kline, R. B. (2011). *Principles and practice of structural equation modeling.* (3rd ed.). Guilford Press.

Kline, R. B. (2015). *Principles and practice of structural equation modeling* (4th ed.). Guilford publications.

Koh, H. C. (1996). Testing hypotheses of entrepreneurial characteristics: A study of Hong Kong MBA students. *Journal of Managerial Psychology*, *11*(3), 12-25.

Kristiansen, S., & Indarti, N. (2004). Entrepreneurial intention among Indonesian and Norwegian students. *Journal of Enterprising Culture*, *12*(01), 55–78.

Krueger Jr, N. F., Reilly, M. D., & Carsrud, A. L. (2000). Competing models of entrepreneurial intentions. *Journal of Business Venturing*, *15*(5–6), 411–432.

Lefcourt, H. M. (2014). *Locus of control: Current trends in theory & research*. Psychology Press.

Liao, J., & Welsch, H. (2005). Roles of social capital in venture creation: Key dimensions and research implications. *Journal of Small Business Management*, *43*(4), 345–362.

Liñán, F., & Chen, Y. (2009). Development and Cross–Cultural Application of a Specific Instrument to Measure Entrepreneurial Intentions. *Entrepreneurship Theory and Practice*, *33*(3), 593–617.

Liñán, F., & Santos, F. J. (2007). Does social capital affect entrepreneurial intentions? *International Advances in Economic Research*, *13*, 443–453.

Lindell, M. K., & Whitney, D. J. (2001). Accounting for common method variance in cross-sectional research designs. *Journal of Applied Psychology*, *86*(1), 114.

Little, T. D., Card, N. A., Bovaird, J. A., Preacher, K. J., & Crandall, C. S. (2007). Structural equation modeling of mediation and moderation with contextual factors. *Modeling Contextual Effects in Longitudinal Studies*, *1*, 207–230.

Littunen, H. (2000). Entrepreneurship and the characteristics of the entrepreneurial personality. *International Journal of Entrepreneurial Behavior & Research*, *6*(6), 295–310.

Luo, Y.-F., Huang, J., & Gao, S. (2022). Relationship Between Proactive Personality and Entrepreneurial Intentions in College Students: Mediation Effects of Social Capital and Human Capital. *Frontiers in Psychology*, *13*, 861447.

Luthans, F., Avey, J. B., Avolio, B. J., Norman, S. M., & Combs, G. M. (2006). Psychological capital development: Toward a micro-intervention. *Journal of Organizational Behavior*, *27*(3), 387–393.

Maheshwari, G., Kha, K. L., & Arokiasamy, A. R. A. (2022). Factors affecting students' entrepreneurial intentions: A systematic review (2005–2022) for future directions in theory and practice. *Management Review Quarterly*, 1–68.

Mahfud, T., Triyono, M. B., Sudira, P., & Mulyani, Y. (2020). The influence of social capital and entrepreneurial attitude orientation on entrepreneurial intentions: The mediating role of psychological capital. *European Research on Management and Business Economics*, *26*(1), 33–39.

McClelland, D. (1961). *The achieving society, Princeton, NJ: Van Norstrand Co*.

McClelland, D. C. (1987). Characteristics of successful entrepreneurs. *The Journal of Creative Behavior*.

Meece, J. L., & Courtney, D. P. (2012). Gender differences in students' perceptions: Consequences for achievement-related choices. In *Student perceptions in the classroom* (pp. 209–228). Routledge.

Mescon, T. S., & Montanari, J. R. (1981). *The Personalties of Independent and Franchise Entrepreneurs, An Empirical Analysis of Concepts. 1981*(1), 413–417.

Mohamed, M. E., Elshaer, I. A., Azazz, A. M., & Younis, N. S. (2023). Born not made: The impact of six entrepreneurial personality dimensions on entrepreneurial intention: Evidence from healthcare higher education students. *Sustainability*, *15*(3), 2266.

Mueller, S. L., & Thomas, A. S. (2001). Culture and entrepreneurial potential: A nine country study of locus of control and innovativeness. *Journal of Business Venturing*, *16*(1), 51–75.

Muñoz, P., & Cohen, B. (2018). Sustainable entrepreneurship research: Taking stock and looking ahead. *Business Strategy and the Environment*, *27*(3), 300–322.

Murugesan, R., & Jayavelu, R. (2017). The influence of big five personality traits and self-efficacy on entrepreneurial intention: The role of gender. *Journal of Entrepreneurship and Innovation in Emerging Economies*, *3*(1), 41–61.

Nahapiet, J., & Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. *Academy of Management Review*, *23*(2), 242–266.

Nasip, S., Amirul, S. R., Sondoh Jr, S. L., & Tanakinjal, G. H. (2017). Psychological characteristics and entrepreneurial intention: A study among university students in North Borneo, Malaysia. *Education+ Training*, *59*(7/8), 825-840.

Nishantha, B. (2009). *Influence of personality traits and socio-demographic background of undergraduate students on motivation for entrepreneurial career: The case of Sri Lanka*. *Ryukoku Journal of Economic Studies, 49*(2), 71-82.

Nunfam, V. F., Asitik, A. J., & Afrifa-Yamoah, E. (2021). Personality, entrepreneurship education and entrepreneurial intention among Ghanaian students. *Entrepreneurship Education and Pedagogy*, *5*(1), 65–88.

Obschonka, M., Silbereisen, R. K., & Schmitt-Rodermund, E. (2012). Explaining entrepreneurial behavior: Dispositional personality traits, growth of personal entrepreneurial resources, and business idea generation. *The Career Development Quarterly*, *60*(2), 178–190.

Pandit, D., Joshi, M. P., & Tiwari, S. R. (2018). Examining Entrepreneurial Intention in Higher Education: An Exploratory Study of College Students in India. *The Journal of Entrepreneurship*, *27*(1), 25–46.

Pérez-Fernández, H., Cacciotti, G., Martín-Cruz, N., & Delgado-García, J. B. (2022). Are interactions between need for achievement and social networks the driving force behind entrepreneurial Intention? A trait activation story. *Journal of Business Research*, *149*, 65–76.

Podsakoff, P. M., & Organ, D. W. (1986). Self-reports in organizational research: Problems and prospects. *Journal of Management*, *12*(4), 531–544.

Popescu, C. C., Bostan, I., Robu, I.-B., Maxim, A., & Diaconu, L. (2016). An analysis of the determinants of entrepreneurial intentions among students: A Romanian case study. *Sustainability*, *8*(8), 771.

Prakash, D., Jain, S., & Chauhan, K. (2015). Supportive government policies, locus of control and student's entrepreneurial intensity: A study of India. *Journal of Global Entrepreneurship Research*, *5*, 1–15.

Reknes, I., Visockaite, G., Liefooghe, A., Lovakov, A., & Einarsen, S. V. (2019). Locus of control moderates the relationship between exposure to bullying behaviors and psychological strain. *Frontiers in Psychology*, *10*, 1323.

Reynolds, P., Bygrave, W., Autio, E., Cox, L., & Hay, M. (2003). *Global Entrepreneurship Monitor: 2002 Executive Report*.

Rokhman, W., & Ahamed, F. (2015). The role of social and psychological factors on entrepreneurial intention among Islamic college students in Indonesia. *Entrepreneurial Business and Economics Review*, *3*(1), 30.

Rooney, B. J., & Evans, A. N. (2018). *Methods in psychological research*. Sage Publications.

Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs: General and Applied*, *80*(1), 1-28.

Roy, R., Akhtar, F., & Das, N. (2017). Entrepreneurial intention among science & technology students in India: Extending the theory of planned behavior. *International Entrepreneurship and Management Journal*, *13*(4), 1013–1041.

Ruef, M. (2010). *The entrepreneurial group: Social identities, relations, and collective action* (Vol. 15). Princeton University Press.

Runyan, R. C., Huddleston, P., & Swinney, J. (2006). Entrepreneurial orientation and social capital as small firm strategies: A study of gender differences from a resource-based view. *The International Entrepreneurship and Management Journal*, *2*, 455–477.

Sampene, A. K., Li, C., Agyeman, F. O., Robert, B., Nicholas, L., Moses, S., & Salomon, A. A. (2021). A CRITICAL ASSESSMENT OF THE ROLE OF ENTREPRENEURSHIP DEVELOPMENT IN THE 21ST CENTURY. *European Journal of Business and Innovation Research*, *9*(5), 1–26.

Sampene, A. K., Li, C., Khan, A., Agyeman, F. O., & Opoku, R. K. (2023). Yes! I want to be an entrepreneur: A study on university students' entrepreneurship intentions through the theory of planned behavior. *Current Psychology*, *42*(25), 21578–21596.

Schneider, S., & Pilz, M. (2019). The function and institutional embeddedness of Polytechnics in the Indian education system. *International Journal for Research in Vocational Education and Training (IJRVET)*, *6*(3), 284–308.

Sharahiley, S. M. (2020). Examining entrepreneurial intention of the Saudi Arabia's University students: Analyzing alternative integrated research model of TPB and EEM. *Global Journal of Flexible Systems Management*, *21*, 67–84.

Sharma, G., & Yukhymenko-Lescroart, M. A. (2022). Life purpose as a predictor of resilience and persistence in college students during the COVID-19 pandemic. *Journal of College Student Retention: Research, Theory & Practice*, 15210251221076828.

Shevlin, M., & Miles, J. N. (1998). Effects of sample size, model specification and factor loadings on the GFI in confirmatory factor analysis. *Personality and Individual Differences*, *25*(1), 85–90.

Shook, C. L., Ketchen Jr, D. J., Hult, G. T. M., & Kacmar, K. M. (2004). An assessment of the use of structural equation modeling in strategic management research. *Strategic Management Journal*, *25*(4), 397–404.

Smith, M. H., Beaulieu, L. J., & Seraphine, A. (1995). Social Capital, Place of Residence, and College Attendance 1. *Rural Sociology*, *60*(3), 363–380.

Sun, H., Ni, W., Teh, P.-L., & Lo, C. (2020). The systematic impact of personal characteristics on entrepreneurial intentions of engineering students. *Frontiers in Psychology*, *11*, 1072.

Thomas, A. S., & Mueller, S. L. (2000). A case for comparative entrepreneurship: Assessing the relevance of culture. *Journal of International Business Studies*, *31*(2), 287–301.

Tofighi, D., & Kelley, K. (2020). Indirect effects in sequential mediation models: Evaluating methods for hypothesis testing and confidence interval formation. *Multivariate Behavioral Research*, *55*(2), 188–210.

Trivedi, R. H. (2017). Entrepreneurial-intention constraint model: A comparative analysis among post-graduate management students in India, Singapore and Malaysia. *International Entrepreneurship and Management Journal*, *13*(4), 1239–1261.

Trivedi, R., & Pattusamy, M. (2022). Performance pressure and innovative work behaviour: The role of problem-orientated daydreams. *IIMB Management Review*, *34*(4), 333–345.

Turker, D., & Selcuk, S. S. (2009). Which factors affect entrepreneurial intention of university students? *Journal of European Industrial Training*, *33*(2), 142–159.

Utsch, A., & Rauch, A. (2000). Innovativeness and initiative as mediators between achievement orientation and venture performance. *European Journal of Work and Organizational Psychology*, *9*(1), 45–62.

Uysal, Ş. K., Karadağ, H., Tuncer, B., & Şahin, F. (2022). Locus of control, need for achievement, and entrepreneurial intention: A moderated mediation model. *The International Journal of Management Education*, *20*(2), 100560.

Vodă, A. I., & Florea, N. (2019). Impact of Personality Traits and Entrepreneurship Education on Entrepreneurial Intentions of Business and Engineering Students. *Sustainability*, *11*(4).

Vosta, L. N., & Jalilvand, M. R. (2014). Examining the influence of social capital on rural women entrepreneurship: An empirical study in Iran. *World Journal of Entrepreneurship, Management and Sustainable Development*, *10*(3), 209–227.

Wheaton, B., Muthen, B., Alwin, D. F., & Summers, G. F. (1977). Assessing reliability and stability in panel models. *Sociological Methodology*, *8*, 84–136.

Yang, Y., Sun, L., Han, B., & Liu, P. (2023). The Trajectory of Anthropomorphism and Pro-Environmental Behavior: A Serial Mediation Model. *International Journal of Environmental Research and Public Health*, *20*(3), 2393.

Yin, R. (1984). *Case study research: Design and method (Beverly Hills, CA, Sage Publications)*.

Yukl, G. A., & Latham, G. P. (1978). Interrelationships among employee participation, individual differences, goal difficulty, goal acceptance, goal instrumentality, and performance. *Personnel Psychology*, *31*(2), 305–323.

Zhao, J., Wei, G., Chen, K.-H., & Yien, J.-M. (2020). Psychological capital and university students' entrepreneurial intention in China: Mediation effect of entrepreneurial capitals. *Frontiers in Psychology*, *10*, 2984.

Zikmund, W. G., McLeod, R. Jr., and Gilbert, F. W. (2003), Customer Relationship Management: Integrative Marketing Strategy and Information Technology, Wiley, Chichester.

# Appendix 1: Questionnaire Items and Sources

| Constructs and Measuring Items | Sources |
|---|---|
| Locus of control<br>1. Diligence and hard work usually lead to success.<br>2. I do not really believe in luck.<br>3. My life is determined by my actions.<br>4. When I get what I want, it is usually because I worked hard for it. | Mueller & Thomas (2001) |
| Social capital<br>1. Many friends have started new firms.<br>2. Many of my family and kin have started new firms.<br>3. Governments provide good support for those starting new firms.<br>4. Banks and other investors go out of their way to help new firms.<br>5. Other community groups provide good support for those starting new firms.<br>6. Those with successful businesses get a lot of attention and admiration.<br>7. There are many examples of well-respected people who made a success of themselves starting a new business.<br>8. Most of the leaders in this community are people who own businesses. | Liao & Welsch (2005) |
| Need for achievement<br>1. I will do very well in difficult tasks relating to my study and work.<br>2. I will try hard to improve my work performance.<br>3. I will seek added responsibilities in jobs assigned to me.<br>4. I will try to perform better than my counterparts. | Cassidy & Lynn (1989) |
| Entrepreneurial intentions<br>1. I am ready to do anything to be an entrepreneur.<br>2. My professional goal is to become an entrepreneur.<br>3. I will make every effort to start and run my firm.<br>4. I am determined to create a firm in the future.<br>5. I have very seriously thought of starting a firm. | Liñán & Chen (2009) |