Attitude, Subjective Norms, and Perceived Behavioural Control as Predictors of Entrepreneurial Intentions Among Engineering Students

Ankita Mishra [1]
Parwinder Singh [2]

Abstract

Entrepreneurship, a significant factor affecting the economy and well-being, is being nurtured by a range of opportunities and programs by the government across several sectors. While these initiatives focus on making physical resources accessible to the aspirants, psychological resources required for successful entrepreneurship have not been focused upon rigorously, especially in India. Entrepreneurial intention has been identified as a significant predictor of entrepreneurial behavior, and understanding its dynamics to promote it is the need of the hour. Entrepreneurship is considered an intentionally planned activity; therefore, the entrepreneurial intention could be explained by the theory of planned behaviour (TPB) factors consisting of attitude, subjective norms, and perceived behavioural control. This study aimed to examine the relationship between TPB components and entrepreneurial intention. The cross-sectional study design was employed to collect the data from 170 students (*M* = 18.42, *SD* = 1.02) studying in various engineering colleges in Punjab. The Entrepreneurial Intention Questionnaire (*EIQ*) developed by Liñán and Chen (2009) was used to measure the responses. The data were subjected to mainly correlation and regression analysis. The results indicated a strong association of attitude and perceived behavioural control with entrepreneurial intentions ; whereas, subjective norms reflected a weak association with entrepreneurial intentions. Moreover, perceived behavioural control and attitude towards entrepreneurship were strong predictors of entrepreneurial intentions for this Indian sample. The findings provide educators, administrators, and policymakers valuable insights about the factors to be targeted to strengthen entrepreneurship among budding entrepreneurs.

Keywords : **entrepreneurship, intentions, attitude, subjective norms, perceived behavioral control**

JEL Classification Codes : L1, L2, M1, O3

Paper Submission Date : April 15, 2021 ; Paper sent back for Revision : December 20, 2021 ; Paper Acceptance Date : March 10, 2022 ; Paper Published Online : May 15, 2022

Entrepreneurship is one of the significant factors which plays a predominant role in the developing economy since it leads to job formation, self-employment, and productivity enhancements by promoting innovative technologies, products, and services that eventually promote GDP growth and reduce unemployment, poverty, and other societal challenges (Bruton et al., 2008; Liu et al., 2019; Uddin & Bose, 2012; Zeffane, 2012). Opoku-Antwi et al. (2012) found that entrepreneurship is critical to society's development and well-being as entrepreneurs are engaged in creating jobs, driving and shaping innovation, and accelerating economic structural changes.

A nation's youth are critical social components that can contribute to the country's economic growth. By 2027,

[1] *Research Scholar,* Department of Humanities and Social Sciences, Indian Institute of Technology Ropar, Rupnagar - 140 001, Punjab. (Email : 2018hsz0011@iitrpr.ac.in) ; ORCID iD : https://orcid.org/0000-0002-6277-2722
[2] *Assistant Professor,* Department of Humanities and Social Sciences, Indian Institute of Technology Ropar, Rupnagar - 140 001, Punjab. (Email : singh_parwinder@iitrpr.ac.in) ; ORCID iD : https://orcid.org/0000-0002-6026-5815

DOI : https://doi.org/10.17010/pijom/2022/v15i5/169580

India would probably have the largest workforce globally, and it would face numerous job creation and employment challenges. Also, the employment scenario will be struggling to keep pace with economic development in the country. According to the data released by the Organization for Economic Co-operation and Development (OECD), more than 30% of Indian youth (aged 15–29 years) are neither in employment nor in education or training. This is double the OECD average and three times that of China (Global Entrepreneurship Monitor Report, 2018). India's unemployment rate rose sharply to 9.1% in December 2020, as stated by the Centre for Monitoring Indian Economy (Kumar, 2021). Another Report of State of Working India (2019) published by Azim Premji University's Centre for sustainable employment highlighted that the age group 20–24 years is hugely over-represented among the unemployed. Among urban men, it accounted for 13.5% of the working-age population but 60% of the unemployed (Jadhav, 2020). In recent times, most graduates prefer traditional forms of employment such as working in a private company or in a public sector job rather than being job creators. Hence, the youth is losing diversity in career choices. According to recent estimates, 600 million jobs would have to be created globally to meet youth employment needs over the next 15 years (United Nations, 2020). In line with this, the Indian government as well the state governments, have tremendously focused on youth entrepreneurs to motivate them to indulge in forming new ventures or business activities through innovation and creativity. The government's initiatives such as the 'Start-up India' movement to fill gaps in the economy for growth, the 'Make in India' initiative that focuses on ease of doing business, and the 'Skill India Mission' that aims at developing skills for promoting entrepreneurship among youth seem to be some of the promising steps forward. Given the perennial problem of unemployment and poverty in the Indian economy, the study in the area of entrepreneurship becomes a need of the hour because understanding various factors related to entrepreneurship would help the youth to instigate the spirit of starting a new venture and prepare them to face the related challenges.

With the growing relevance of entrepreneurship in modern scenario, researchers have attempted to find the drivers of entrepreneurial intentions among students, that is, why some students want to establish their own business while others do not. A plethora of research has been conducted to understand entrepreneurial intention among students. However, no substantial understanding could be developed so far (Liñán & Fayolle, 2015), especially in developing economies (Karimi et al., 2017).

India is a country with socio-cultural and linguistic diversity across its numerous states and one of the fastest-evolving economies building the groundwork for encouraging young people to establish innovative entrepreneurship by gradually altering their minds to accept it (Hariharan & Muthukumar, 2015). Most of the research findings considering entrepreneurship in Indian settings have been conducted majorly in Uttarakhand (Bhuyan & Pathak, 2017; Sharma & Madan, 2014), Himachal Pradesh (Sharma, 2019), Tamil Nadu (Sankar & Sudha, 2016; Sumathi et al., 2018; Thomas & Lavanya, 2012), and Uttar Pradesh (Dwivedi & Mishra, 2013; Hassan et al., 2020; Hariharan & Muthukumar, 2015). Moreover, a study done by Roy et al. (2017) included a broader sample from various states of India (Tamil Nadu – Chennai, Uttar Pradesh – Kanpur, Maharashtra – Mumbai, West Bengal – Kharagpur).

Among Indian states, however, Punjab remains unexplored in relation to studies on youth entrepreneurship. Punjab, a state with a wide range of socio-cultural differences, has recently begun to suffer unemployment issues. The recent economic survey report depicted that in the 2018–19 fiscal year, Punjab had a higher unemployment rate for those aged 15 and above, which is higher than the national average (Chaba, 2021). Lack of quality, skill-based education, drug abuse, lack of diversification of agriculture, and slow industrial developments are significant sources of unemployment in the state (Singh, 2019). The report highlighted that since 2016, 4.7 lakh people from Punjab had gone abroad for jobs, leading to a demographic crisis (Verma, 2021). The above data raise the concern about promoting the youth toward entrepreneurship in the state.

New venture creation is an intentional process and requires planning; hence, intentions are the best single predictor of entrepreneurial behavior (Aizen, 1991; Bird,1998; Krueger Jr. et al., 2000). Researchers agree that the

stronger the intention to engage in behavior, the more likely the individuals will perform it in the future. In a broad sense, the intention is a mental state representing a commitment to carry out an action or actions in the future (Thompson, 2009). Intention involves mental activities such as planning and foresight. As entrepreneurship is a complex multi-stage process, it requires a conscious decision and planning to pursue it as a career (Hisrich et al., 2005). Entrepreneurial intention has been defined as the conscious state of mind that precedes action and directs attention towards a goal such as starting a new business (Moriano et al., 2012).

The most prominent and widely accepted intention model is the theory of planned behavior (TPB), which focuses on the assumption that "intention is a significant predictor of behavior, while intention itself is a function of behavioral beliefs that link the given behavior to certain outcomes (Kautonen et al., 2013, p. 698). More specifically, if applied to entrepreneurial settings, this model still offers an opportunity to understand better and predict entrepreneurial activities (Sommer & Haug, 2011).

Despite the fact that this model has been empirically evaluated in both developed and developing economies, the researchers found that more than two-thirds of the studies were conducted in developed rather than developing economies (Nabi & Liñán, 2013; Schlaegel & Koenig, 2014), eventually reflecting that the cultural context could provide valuable insights in understanding entrepreneurial intentions when replicating different theoretical models (Karimi et al., 2017).

More precisely, in the Indian context, researchers have identified various factors impacting entrepreneurial intentions among students, indicating that TPB serves as a base model. With respect to this model, studies have directly tested the relationship between the components of the TPB model and entrepreneurial intentions and reflected that the variance explaining entrepreneurial intentions ranges between (42%–50%) (Hariharan & Muthukumar, 2015; Tiwari et al., 2017). Recent studies are also in alignment with the previous research (Arafat et al., 2020; Melese et al., 2019), highlighting the positive impact of attitude, subjective norms, and perceived behavioral control on the students' entrepreneurial intentions depending on different geographical regions.

However, until now, there is no satisfactory answer to the question regarding which dimensions of entrepreneurial intentions from the TPB model are more influential in predicting EI in the Indian context, specifically focussing on the local regions (Sharma, 2019). Considering the whole context in perspective, the present study is a preliminary study employing the theory of planned behavior as the base to understand entrepreneurial intentions among youth in Punjab since, to the best of our knowledge so far, no literature was found regarding understanding entrepreneurial intentions among the youth in the context of Punjab employing TPB as the base model.

With the above research gaps, the broader objectives and research problems are highlighted below.

Objectives of the Study

(1) The present study aims to validate the TPB model (attitude, subjective norms, and perceived behavioral control) among the engineering students of Punjab.

(2) To identify the most crucial factor that stimulates entrepreneurial intentions among college students.

In particular, we intend to answer the below research questions :

(1) Is there any relationship between the components of the TPB model and entrepreneurial intentions among college students?

(2) Which of these factors serve as the most crucial factor in stimulating entrepreneurial intentions in the local context of Punjab?

Theoretical Underpinnings and Hypotheses

The TPB framework states that the attitude towards behavior, subjective norms (SNs), and perceived behavioral control (PBC) are the antecedents of the intentions, which is the central component of the TPB model.

Attitude towards the behavior is "the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question" (Ajzen, 1991, p. 188). For Liñán and Chen (2009, "attitude toward start-up is the degree to which the individual holds a positive or negative personal valuation about being an entrepreneur" (p. 596). It means that the person with a favorable attitude towards entrepreneurship would be more inclined towards it than a person with a negative connotation about entrepreneurship. Previous research has demonstrated the positive association between attitude and the intention to create a new venture. Krueger et al. (2000) stated that entrepreneurial attitude could influence entrepreneurial behavior through entrepreneurial intention. The research findings by Ferreira et al. (2012) indicated that self-confidence and personal attitude affected entrepreneurial intention among students.

Similarly, Zhang et al. (2014) found a clear link between entrepreneurship education and entrepreneurial intent, which is driven by attitudes. In the same stream of results, another study found that entrepreneurial mindset orientation, social capital, and psychological capital — all influence polytechnic students' entrepreneurial intentions (Mahfud et al., 2020). Further, researchers have highlighted that students having a higher attitude toward new ventures are more likely to show increased intention to grow business activities (Abun et al., 2018; Solesvik et al., 2012). Contrary to this, a study by Siu and Lo (2013) reported that attitude did not significantly predict entrepreneurial intention in the Chinese context. Since there is extant literature that emphasizes the relationship of attitudes with entrepreneurial intention among the students, it can be hypothesized that :

↳ **H1 :** Attitude towards entrepreneurship is a significant predictor of entrepreneurial intention.

The second antecedent is SNs, which measure the perceived social pressure to engage in entrepreneurial behavior (or not). It would specifically refer to the belief that "reference individuals" would approve or disapprove of the decision to become an entrepreneur (Ajzen, 2002). SNs are concerned with the approval and disapproval of their significant others in performing specific behaviors. Hence, individuals' belief that the behavior's outcome would be socially accepted or not would influence an individual's intentions to perform the actual behavior. Empirical evidence has shown a direct and significant relationship between SNs and entrepreneurial intention (Bhuyan & Pathak, 2017, 2019) among the students in the higher education institutes of Uttarakhand, India. Souitaris et al. (2007) found a positive and substantial link between SNs and entrepreneurial intentions among science and engineering students at two European universities. The development of students' intent to become entrepreneurs is highly influenced by their entrepreneurial attitude, perceived desirability, and SNs, according to a study done among undergraduate students (Yousaf et al., 2015).

However, some scholars exhibited contradicting findings where they failed to associate SNs with entrepreneurial intention (Wu & Wu, 2008). Further, in another study, Krueger et al. (2000) did not establish a relation between intention and SNs. In the study conducted by Usman and Yennita (2019), SNs did not appear to significantly contribute to variations in entrepreneurial ambitions. The results of studies on the role of SNs in the TPB have likewise been inconsistent (Bhat & Singh, 2018; Heuer & Liñán, 2013). The reason for this variation may be the cultural context, as demonstrated by Hofstede (2001), who stated about individualistic and collectivist societies.

Most of the studies have been conducted in individualistic societies (Hofstede, 2001), where individualistic societies are more concerned with respect for privacy. These people place a high value on other people's time and, their need for privacy and freedom, high self-orientation; they prefer identity based on individual initiative and achievement; therefore, perceived social pressures can be almost nil when making career decisions in

individualistic societies (Gujrati et al., 2019). In contrast, the individuals are more focused on group orientation in the collectivist society. They make decisions based on what is best for the group (e.g., family, relatives, peer group) rather than their own goals and desires. Therefore, these societies reflect that people are highly socially sensitive and interdependent; hence, they are influenced by social pressure in initiating entrepreneurial activities. Meta-analyses exemplified (Armitage & Conner, 2001) the SN's weak predictive power in the TPB model. The conflicting findings regarding the association between subjective norms and entrepreneurial intentions indicate more empirical evidence. In a collectivist culture like India, where strong family ties exist, the role of subjective norms should be investigated further (Tiwari et al., 2017)

Hence, with such theoretical and empirical underpinnings, the hypothesis could be stated as :

- **H2 :** Subjective norms are a significant predictor of entrepreneurial intention.

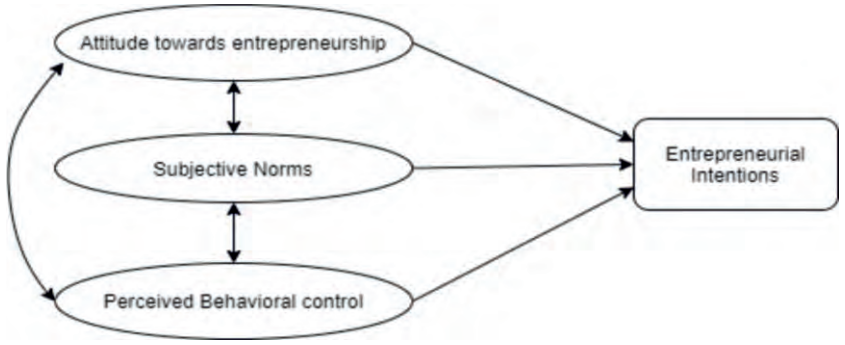
PBC, the third component of TPB, is defined as a "person's perception of the ease or difficulty of performing the behavior of interest" (Ajzen, 1991, p. 183). PBC component differs from the related concepts of self-efficacy (Bandura, 1977) and feasibility (Shapero & Sokol,1982) because it includes not only the feeling of being able but also the perception of controllability of the behavior (Ajzen, 2002), as highlighted in the previous studies (Armitage & Conner, 2001; Iakoleva et al., 2011). This indicates that individuals' perceived confidence and controllability of their abilities regarding activities employed in the business, such as creating new ideas, maintaining favorable relationships with others, building management teams, etc., would be positively associated with entrepreneurial intentions. Concerning the PBC dimension, empirical evidence highlights the crucial role of perceived behavioral control in stimulating students' entrepreneurial intentions. Solesvik et al. (2012) showed that students with high perceived behavioral control were more inclined towards entrepreneurship as a career. A recent study by Gujrati et al. (2019) depicted that all three antecedents of intention, as mentioned in the theory of planned behavior (attitude, SNs, and PBC), are significant predictors of entrepreneurial intention. Further, from the study in the Indian context conducted by Sharma (2019), it is also evident that out of the three dimensions (PBC, SNs, and attitude), the strongest predictor of entrepreneurial intention is PBC.

With these empirical shreds of evidence, the hypothesis can be stated as :

- **H3 :** Perceived behavioral control significantly predicts entrepreneurial intention.

Hence, with the above-stated theoretical background and hypotheses, the present study has been conducted to reaffirm the TPB conceptual model for the entrepreneurial intention in the Indian context. Figure 1 presents the conceptual framework for the study.

Figure 1. ***A Conceptual Framework for the Study***



Source : Adapted from the theory of planned behavior (Ajzen,1991).

Methodology

Participants and Measures

A total of 170 undergraduate engineering students (Males: 85.3%) from a few engineering institutes in Punjab, India, completed the survey during the period from August to October in the academic year 2020. The age ranged from 17 – 22 years (M = 18.42 years, SD = 1.02 years), and the participants were selected employing the purposive sampling method as frequently used in entrepreneurship research (Karimi et al., 2016; Krueger Jr et al., 2000,). A number of studies demonstrating the rationale for the inclusion of student samples to understand the dynamics of entrepreneurial intentions (Krueger Jr. et al., 2000 ; Liñán & Chen, 2009) support the objective of applying student samples for this analysis. The assessment of the TPB components (attitude, SNs, and PBC) and the entrepreneurial intentions are done using the Entrepreneurial Intention Questionnaire (*EIQ*) developed by Liñán and Chen (2006, 2009). This questionnaire was developed solely for the theory of planned behavior in relation to entrepreneurship (Linan & Chen, 2006, 2009). This scale consisted of a total of 20 items based on a 7-point Likert scale (1 = *"Strongly disagree"*, 7 = "*Strongly agree"*). The Cronbach's alpha values are 0.90, 0.80, 0.89, and 0.94 for attitude, subjective norms, perceived behavioral control, and entrepreneurial intention, respectively.

Procedure

A cross-sectional survey was designed to examine the relationship of the components of the TPB model with entrepreneurial intentions. The questionnaires were distributed to the students, and basic guidelines were provided beforehand, including the issues of confidentiality of their responses. Their responses were obtained in classroom settings after they gave consent to participate in the study. No monetary compensation was provided. Finally, the participants were debriefed and appreciated for their participation. Descriptive statistics, the Pearson product-moment correlation, and hierarchical regression have been used to test the present study's hypotheses. Data are analyzed by using IBM version SPSS 20.0.

Analysis and Results

The present study's findings are given in Table 1 to Table 3. Table 1 presents the demographic characteristics and descriptive statistics such as mean, standard deviation, etc.

Table 1. ***Demographic Characteristics of Sample and Descriptive Statistics for Each Measure***

Demographic Characteristics	*N*	%	Min.	Max.	Mean	*SD*	Skewness	Kurtosis
Age (in years)	170		17	22	18.42	1.02	.96	1.31
Gender								
Male	145	85.3						
Female	25	14.7						
Intention			7	42	27.74	7.35	–.33	.02
Perceived Behavioural Control			6	43	28.29	6.57	–.56	.76
Subjective Norms			3	21	13.40	4.33	–.28	–.39
Attitude			5	35	24.62	4.80	–.67	1.38

Table 2. ***Descriptive Statistics and Correlations for the Variables (N = 170)***

Variables	N	M	*SD*	1	2	3	4
1. Entrepreneurial Intention	170	27.74	7.355	–			
2. Perceived Behavioural Control	170	28.29	6.574	.676**	–		
3. Subjective Norms	170	13.40	4.326	.379**	.433**	–	
4. Attitude	170	24.62	4.804	.646**	.524**	.347**	–

Note. ** $p < .01$.

Table 3. ***Stepwise Regression Analysis Summary for Entrepreneurial Intention (Criterion Variable) and Attitude, Perceived Behavioural Control (Predictor Variables)***

Variables	Model 1			Model 2		
	UC		SC	UC		SC
	Beta	SE(B)	β	Beta	SE(B)	β
Perceived Behavioural Control	0.75	0.06	0.67**	0.52	0.06	0.46**
Attitude				0.61	0.09	0.40**
R	0.67			0.75		
R^2	0.45			0.57		
F	141.4**			112.7*		
R^2 Change	0.45			0.11		
F Change	141.5**			46.1**		

Table 2 presents the descriptive statistics and correlation analysis of the variables involved in the study. As shown, significant positive correlations have been observed among entrepreneurial intention, attitude, SNs, and PBC. It is found that entrepreneurial intention is correlated positively with PBC, $r = 0.67$, $p < 0.01$; attitude, $r = 0.64$, $p < 0.01$; and subjective norms, $r = 0.37$, $p < 0.01$.

Table 3 depicts the stepwise regression analysis to see the significant predictors among the variables being studied. In the first model, the entrepreneurial intention is significantly predicted by PBC, $\beta = 0.67$, $p < 0.01$, demonstrating the strongest predictor of entrepreneurial intentions. The second model depicts that, in the case of PBC, $\beta = 0.46$, $p < 0.01$, and in the case of attitude, $\beta = 0.40$, $p < 0.01$ are the strongest predictors of entrepreneurial intention. The findings support H1 and H2. SNs could not reach a significant level; hence, it is excluded from the model; so H3 does not get the support. The significant predictors explain a significant proportion of variance in overall entrepreneurial intention scores. Model 1, which is the base model, shows that PBC explains 45% of the variance in entrepreneurial intentions and exhibits that the model is statistically significant, $R^2 = 0.45$, $F(1,168) = 141.4$, $p < 0.01$. Further, Model 2 depicts that 57% of the variance in entrepreneurial intention can be attributed to the studied predictors, that is, PBC and attitude, $R^2 = 0.57$, $F(2, 167) = 112.7$, $p < 0.01$. Based on the above results, it can be inferred that attitude and PBC directly affect entrepreneurial intentions.

Discussion

The present study intends to explore the association of the dimensions of the theory of planned behavior (TPB), namely attitude, SNs, and PBC, with the entrepreneurial intentions among undergraduate engineering students in

India. The results highlight that the components of the theory of planned behavior explain entrepreneurial intention in the context of Punjab.

The results indicate a strong significant positive relationship between PBC and attitude towards entrepreneurship with entrepreneurial intention. In contrast, SNs show a weak but significant positive association with entrepreneurial intention. The most prominent dimension in terms of predictive power is the PBC, followed by the attitude towards the entrepreneurship dimension of TPB. The SNs do not predict the intention substantially as it is excluded from the second regression model. These findings are in line with the results demonstrated by Tsordia and Papadimitriou (2015), who studied the role of the TPB among business students. Other studies have also been noted in the same vein as in the study by Ferreira et al. (2012). The findings of the studies demonstrate that students who have a favorable attitude towards entrepreneurship would be high towards initiating new ventures. Consonant with these findings, some studies demonstrated that student's attitudes and knowledge tend to enhance their intentions and willingness to start a new venture in the future, indicating that if people expect positive results from entrepreneurship, they would be more likely to start a new venture (Indarti et al., 2009; Parveen et al., 2018). A positive attitude toward entrepreneurship directs individuals to perceive opportunities rather than threats in the environment, and because of an optimistic outlook, they are motivated to face the challenges and concentrate on solutions. Further, the evaluation of the perceived easiness and difficulty related to entrepreneurship activities plays a crucial role in stimulating entrepreneurial intention. Therefore, it can be inferred that the students who perceive that they are confident and can control the outcomes of entrepreneurship would show high entrepreneurial intention. Bandura (1986) also supports this aspect, stating that self-efficacy is linked to initiating and persisting at behavior under uncertainty, setting higher goals, and reducing threat-rigidity and learned helplessness. Khuong and An (2016) argued that people will improve their capacity to track and regulate the market environmental forces of enterprise development because of the internal locus of control and being self-efficacious, which would lead to high entrepreneurial intention. The above findings reflect that to build a better positive attitude about entrepreneurship as a career choice in students' minds, the government, media, and other higher education institutions should promote entrepreneurship since literature has highlighted the role of entrepreneurial education in enhancing entrepreneurial self-efficacy and intention towards creating a new venture (Aggarwal, 2019; Gupta, 2013).

Concerning the dimension of SNs, surprisingly, in a collectivist society like India (Hofstede, 2001), the SNs have a relatively weak association with entrepreneurial intention. Despite the significant positive association with entrepreneurial intention, SNs are excluded from the stepwise regression model, probably due to their comparatively lower correlation with attitude and PBC with entrepreneurial intention. This supports the notion of Armitage and Conner (2001) in their meta-analyses that highlighted the weak predictive power of the SNs in the TPB model. Similar findings were demonstrated by other studies (Küttim et al., 2014; Roy et al., 2017; Sommer & Haug, 2011). Further, another study in the same line showed that personal attitude and PBC contribute more to entrepreneurial intention than SNs (Haque et al., 2017; Usman & Yennita, 2019). Liñán and Chen (2009) also found that SNs had no direct effect on entrepreneurial intention but on attitude towards entrepreneurship and PBC for both the Spanish and Taiwanese students. In one recent study (Gujrati et al., 2019) conducted on Nigerian students in a collectivist society, the authors showed that SNs accounted for more entrepreneurial intention variance than PBC, which contradicts the present research findings. With reference to the above contradictory results regarding SNs, there is a need to get a deeper understanding by exploring the direct and indirect influence of SNs via other personality factors in Indian settings.

For the present study, the interrelationship of TPB dimensions also stipulates that significant others' (such as family, friends, and relatives) opinions regarding the decision to pursue entrepreneurship exert less influence on students' personal decisions but could indirectly influence forming favorable or unfavorable attitudes towards entrepreneurship. The possible explanation for this could be the influence of the external environment where

individuals are connected with their family, teachers, and peers. The decision of the significant others will impact people's perceptions about entrepreneurship and their own capabilities in performing the task of entrepreneurship in the future. For instance, if parents and peers endorse a decision by an individual to start a new venture, it will result in high self-confidence and a positive entrepreneurial attitude. It implies that an individual's favorable or negative judgment of a behavior is based on their impression of how easy or difficult it is to accomplish that behavior.

Research Implications

Theoretical Implications

The current study identifies PBC and attitude toward entrepreneurship as the critical factors influencing entrepreneurial intentions among students in Punjab. According to the reviewed literature in the entrepreneurship field, this is the first study that has examined entrepreneurial intentions using the theory of planned behavior as the base model in the local context of Punjab, thus contributing to the pool of knowledge in the field of entrepreneurship specifically in Indian settings. Furthermore, the findings suggest that different intervention programs through which students are directed towards positive aspects of entrepreneurship should be targeted in the various colleges looking into the local context of Punjab. This could be achieved by incorporating numerous psychological theories into the college curriculum in order to boost students' perceptions of behavioral control (i.e., the easiness of carrying out the new venture).

Managerial Implications

Based on the present findings, a number of implications can be derived, especially for policy decision-makers/ governments/ universities and other stakeholders that may need to target to inculcate the spirit of pursuing entrepreneurship among the youth in Punjab.

Some of the potential solutions could be that students must be portrayed with a positive image of entrepreneurship to foster the local entrepreneurship ecosystem in various regions of Punjab. Promoting positive aspects of entrepreneurship can be accomplished by launching various entrepreneurial awareness programs and initiatives where the students can get exposure by interacting with successful entrepreneurs and learning from their experiences may have a boosting effect on students. Further, opening up the entrepreneurship development centers in the educational institutes, although many universities and colleges have started their Entrepreneurship-Cell/ Technology Business Incubator centers, many private universities and colleges are not exposed in this direction. In addition to educating students about the conventional jobs, the mandatory entrepreneurial courses must be delivered at the early stages of their education so that students become aware of the variety of career opportunities. Systematic entrepreneurial learning at an early stage allows students to detect their entrepreneurial potential, and proper guidance could help them eliminate their incompetence towards entrepreneurship.

Conclusion

The present study's findings stress the vital role of attitude and PBC in relation to entrepreneurial intentions among engineering students. Although this study is preliminary as far as the context of Punjab is concerned, all the TPB variables taken in this analysis show a positive relationship with the dependent variable in alignment with the previous research in the field. However, the PBC has proven to be the most effective predictor of entrepreneurial intentions in the local context of the Punjab regions.

Limitations of the Study and Scope for Further Research

The present study has a few limitations. The respondents included in this study were taken from a few engineering institutes in Punjab, which may make our results less generalizable. In the study, the measures used are self-report ; so, the chances of socially desirable responses cannot be excluded. Moreover, given that this is a quantitative study, both quantitative and qualitative methods should be used for future research to have an extensive understanding of the components of the TPB model in the local context of Punjab.

More empirical studies could be targeted at the local context to understand the impact of the socioeconomic culture, which might help in knowing more about the thinking patterns about entrepreneurship across different regions of India as there are still fewer empirical studies conducted in India concerning entrepreneurship. Future research should also focus on other socio-cultural factors such as government support and institutional/financial support. Since the present study included a few colleges in Punjab, further scholars should cover a large sample from a broad spectrum of colleges, including both private and public universities. To delve deeply into the causal mechanism of the identified factors, future researchers could employ experimental studies/interventional designs. Further, this study aimed at the initial step, that is, entrepreneurial intention, however, to establish whether the individuals would perform actual entrepreneurial behavior in the future, the implementation of longitudinal research designs could allow more insights that are lacking in the existing literature.

Other studies could get new insights by conducting interviews with students who have just initiated their business or submitted their start-up proposals in various educational institutes and other entrepreneurship forums in India.

Authors' Contribution

Ankita Mishra and Parwinder Singh conceived the idea and developed the research design to undertake the empirical study. Ankita Mishra gathered research articles, sorted them by keywords, created concepts and codes pertinent to the study design, and collected the data. Ankita Mishra did the statistical analysis using SPSS 20.0 and wrote the manuscript in consultation with Dr. Parwinder Singh, who supervised the study.

Conflict of Interest

The authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest or non-financial interest in the subject matter or materials discussed in this manuscript.

Funding Acknowledgement

The authors received no financial support for the research, authorship, and/or the publication of this article.

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About the Authors

Ankita Mishra is a PhD Scholar (Psychology) in the Department of Humanities and Social Sciences at the Indian Institute of Technology, Ropar, Punjab. She is currently working in entrepreneurship psychology and has an interest in the domain of interventional designs to enhance entrepreneurial intentions among the youth by employing psychological theories.

Parwinder Singh is an Assistant Professor (Psychology) in the Department of Humanities and Social Sciences at the Indian Institute of Technology, Ropar, Punjab. His research work mainly includes planning, devising, executing, and evaluating various psychological interventions targeting different facets of maladaptive behavior.