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The effect of entrepreneurial characteristics on attitude and intention: an empirical study among technical undergraduates

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Abstract

Purpose – Unemployment is the biggest issue for all the developing countries, especially India, where millions of educated people are passed out every year from different educational institutes, but against this, the jobs are not being generated. This situation will only be addressed effectively when the government/authorities make more efforts to identify/create potential entrepreneurs. The present study investigates the relationship of entrepreneurial characteristics on entrepreneurial attitude and intention among engineering undergraduates engaged in various technical institutions in Chhattisgarh state.

Design/methodology/approach – Stratified random sampling was used to collect sample of 1,000 engineering undergraduates enrolled in third and fourth year at different technical institutions of Chhattisgarh state.

Findings – Structural equation modelling and hierarchal multiple regression analysis were incorporated, and the analysis revealed that the entrepreneurial characteristic was found to be a significant predictor of entrepreneurial attitude and intention of engineering undergraduates. The study also discusses managerial implications, limitations and avenues for future research.

Originality/value – Looking at the current scenario, the present study discusses with several factors influencing entrepreneurial attitude and intention of engineering undergraduates, which might be the only solution to a significant issue, i.e. unemployment. In addition, there is a huge lack of research in addressing unemployment issue through entrepreneurship in the state of Chhattisgarh.

Keywords Unemployment, Entrepreneurial characteristics, Entrepreneurial attitude, Entrepreneurial intention, Engineering students

Paper type Research paper

1. Introduction

According to the All India Council for Technical Education, more than 60% of 80 lakh engineering students, who graduated from different technical institutions across India, remain unemployed. Due to this, an effort of 20 lakh man-days annually is of no worth. It becomes worse when less than 1% of engineering students participated in summer internships and about 3,200 technical institutions offering around 15% of engineering programmes are accredited by the National Board of Accreditation (Gohain, 2017). Unemployment has become a significant challenge before India's growth and development

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as the Centre for Monitoring Indian Economy (CMIE), in their 2019 report, revealed a 15% point increase in youths' unemployment rate (20–24 years) in the past two years. According to the country's 2011 census, Indian youths between 15 and 24 years of age consist nearly the one-fifth portion of India's total population, and by 2020, it was predicted to cover the one-third portion of India's total population, which makes India the youngest country in the world.

In addition, the State of India's Environment (SoE) 2019 Report states that the youth (between 20 and 24 years), who represents about 40% of India's total labour force, has shown a 32% unemployment rate. Furthermore, the unemployment rate among educated youths is more depressing. The unemployment rate among people with a graduate degree was 13.17% in September–December 2018, increasing from 10.39% in May–August 2017 (Pandey, 2019). In 2020, the Covid-19 pandemic drastically impacted the Indian economy, which is also one of the main reasons for increased unemployment in India.

As a solution, the manufacturing sector could play an essential role in being large employers by considering India's demographic dividend and urgency to create jobs, leading to decent income opportunities. According to the Organization for Economic Cooperation and Development (OECD) report on the economic outlook released in May 2019, removing bottlenecks in the manufacturing sector would be the key to promoting job opportunities in more productive and better-paid activities. The International Labour Organization expected that India would have 18.9 million jobless people in 2019 despite the projected 7.5% GDP (gross domestic product) growth in 2020 (Pandey, 2019).

India is in dire need of entrepreneurial culture to boost the economy and help in reducing unemployment. Sooner or later, every individual comes across some potential entrepreneurial opportunities, but very few can convert those opportunities into successful ventures. Individuals with a higher level of education are more inclined towards entrepreneurial opportunities. Engineering graduates search for opportunities either as job seekers or job providers. Engineering students were found best suited to becoming entrepreneurs. Roberts and Eesley (2009) conducted a study at Massachusetts Institutes of Technology (MIT) that reported, taking alumni as a sample, about 50–100% engineering alumni compared to science alumni have eventually started up new ventures. The study also found that engineering graduates were equally inclined towards entrepreneurship as management graduates, and more than 20% of total new entrepreneurs came from MIT's computer science and electrical engineering department. Adeosun and Owolabi (2021) revealed the youths' high turnover ratio in owner-manager businesses due to negative workplace environment and low benefits, which may be the biggest reason of choosing entrepreneurship as a career; however, Najaf and Najaf (2021) found that political influence plays a significant role in building a successful venture.

Previous studies suggested that technical students could play a significant role in creating new enterprises, and India has a chance to encourage millions of engineering students towards entrepreneurship. Twofold results can be seen; first, they would create a new venture, and second, they would become job providers. In order to examine it, the present study investigates the effect of entrepreneurial characteristics on entrepreneurial attitude and intention among engineering students enrolled in different technical institutions at Chhattisgarh state.

2. Literature review

A report presented to the European Commission in 2012, which explains the importance and positive impacts of entrepreneurship at the higher educational level, states that entrepreneurship directly and positively affects the economy and society of a nation. Entrepreneurship is considered a determined activity that serves as the commencement, advancement and dissemination of wealth and societal value.

2.1 Entrepreneurial characteristics

Researchers at different times have recognized the importance of different personality traits in association with entrepreneurial behaviour. Several studies on different personality traits investigated the differences between entrepreneurs and non-entrepreneurs (Zhao *et al.*, 2010; Brandstätter, 2011; Kerr *et al.*, 2018; Newman *et al.*, 2019). Individual traits or personality characteristics continue to be crucial areas of study among researchers, which gained attention in the past and present (Robinson *et al.*, 1991; Ho and Koh, 1992; Koh, 1996; Bakotic and Kruzic, 2010; Roselle, 2018). Entrepreneurs possess a set of traits or characteristics. A trait characterizes an individual. Characteristics are distinct attributes of an individual that helps in shaping the personality. A trait approach to entrepreneurship describes and focuses on an individual's personality/psychological factors and characteristics (Brockhaus, 1980). Some entrepreneurial traits or characteristics make up an individual and may include exhibiting specific psychological characteristics, such as a commitment to their work, a need for total control and an ability to cope with uncertainty and challenges (Mitton, 1989). Individuals can be categorized into various psychological characteristics; that is, they have a very high need for achievement, high propensity to take the risk and willingness to innovate and have a high locus of control based on their level of self-confidence (Davidsson, 1989; Ho and Koh, 1992). Certain personality traits act as an influencer to attract new ventures (Ismail *et al.*, 2009). This attraction in the form of intention is a significant predictor of behaviour (Ajzen, 1991).

2.2 Entrepreneurial attitude

Entrepreneurship can be thoroughly understood by studying the importance of attitude defined by many theorists and researchers (Olson and Bosserman, 1984; Gasse, 1985; Greenberger and Sexton, 1987). Different studies have been conducted on students' attitude towards entrepreneurship, such as Volkmann and Tokarski (2009), Keat *et al.* (2011), Mohamed *et al.* (2012), Mothabeng (2012) and Hussain *et al.* (2018). In order to understand the attitude of an individual, there are two fundamental approaches. The former describes attitude as a unidimensional construct, whereas the latter defines the same as a multidimensional approach. The representation of the unidimensional approach constitutes of affective reaction alone (Fishbein and Ajzen, 1975). The multidimensional component holds that individual reactions are based on three types of reactions: affect, cognition and conation. It is also known as the tripartite model, and attitude is a combination of all these three factors (Breckler, 1983, 1984; Carlson, 1985; Chaiken and Stangor, 1987; Shaver, 1987). The cognitive component consists of the beliefs and thought about an attitude object. The affective component consists of positive or negative feelings toward the object. The conative or behavioural component consists of behavioural intentions and predisposition to behave in a given way toward the object (Breckler, 1984; Carlson, 1985; Robinson *et al.*, 1991).

2.3 Entrepreneurial intention

However, entrepreneurial intention is affected by various factors (Zanabazar and Jigjiddorj, 2020). The literature suggests that a positive entrepreneurial attitude enhances entrepreneurial intention (Robinson *et al.*, 1991; Phan *et al.*, 2002; Luthje and Franke, 2003), entrepreneurial intentions are central to understanding the entrepreneurial process (Katz, 1992; Krueger and Carsrud, 1993; Kolvereid, 1996; Crant, 1996; Bird and West, 1998a, b) and also entrepreneurial characteristics are regarded as a predictor of entrepreneurial intention (Rasheedand Rasheed, 2003). Also, past studies suggest that there exists low entrepreneurial intention among females as compared to males (Mueller, 2004; Asos *et al.*,2007; Koellinger *et al.*, 2008; Díaz-García and Jiménez-Moreno, 2010; Yordanova and Tarrazon, 2010;

Shinnar *et al.*, 2012; Zeffane, 2015). In recent studies, it is seen that the researchers found keen interest concerning entrepreneurial intentions among the university students (Tkachev and Kolvereid, 1999; Autio *et al.*, 2001; Veciana *et al.*, 2005). Entrepreneurial intention has been explored among higher education students in different regions, such as Asian countries (Zahariah *et al.*, 2010; Dahalan and Jaafar, 2015), European countries (Linan and Chen, 2009), the Middle East (Zarafshani, 2011), Australia (Schwarz *et al.*, 2009) and Caribbean (Devonish *et al.*, 2010).

3. Methodology

3.1 Conceptual Model

The present study attempts to answer the following questions:

RQ1. What effect do entrepreneurial characteristics have on entrepreneurial attitude among engineering students enrolled at different technical institutions of Chhattisgarh state?

RQ2. What effect do entrepreneurial characteristics have on entrepreneurial intention among engineering students enrolled at different technical institutions of Chhattisgarh state?

Thus, the author proposes the following model:

3.2 Operational variables in the study

(1) Entrepreneurial characteristics

Entrepreneurial characteristics are the set of features that an individual has aligning with the set of traits needed to start a new venture, such as ambiguity tolerance, self-sufficiency, locus of control, risk-taking propensity, social networking etc.

(2) Entrepreneurial attitude

Entrepreneurial attitude is the extent to which a person has positive or negative valuation towards behaviour (Bird and West, 1998a, b). An attitude is the predisposition to respond in a generally favourable or unfavourable manner for a certain object/person/event (Ajzen, 1982).

(3) Self-employment intention

Entrepreneurial intention is the involvement or the intention of an individual to start a business venture (Krueger and Carsrud, 1993; Drennan *et al.*, 2005; Souitaris *et al.*, 2007). Entrepreneurial intention is defined as individuals' willingness to perform entrepreneurial behaviour, engage in entrepreneurial action, be self-employed or establish a new business (Dhose and Walter, 2010).

3.3 Hypotheses

H1. Entrepreneurial characteristics would emerge as a significant predictor of entrepreneurial attitude among engineering undergraduates.

H2. Self-sufficiency would emerge as a significant predictor of self-employment intention among engineering undergraduates.

H3. Risk-taking propensity would emerge as a significant predictor of self-employment intention among engineering undergraduates.

H4. Social networking would emerge as a significant predictor of self-employment intention among engineering undergraduates.

H5. Locus of control would emerge as a significant predictor of self-employment intention among engineering undergraduates.

H6. Ambiguity tolerance would emerge as a significant predictor of self-employment intention among engineering undergraduates.

H7. Planning and organizing ability would emerge as a significant predictor of self-employment intention among engineering undergraduates.

H8. Entrepreneurial characteristics would emerge as a significant predictor of entrepreneurial intention among engineering undergraduates.

3.4 Research design and sampling

A correlational research design is applied in the present study. The primary data were collected from 1,000 engineering students enrolled in the third and fourth year at different government and private technical institutions in Chhattisgarh state using the stratified random sampling technique. The data collection process was completed over the period of November 2019–March 2020.

3.5 Research instrument

Adopting the right instrument is the essential part of collecting the right form of data from the respondents. In the present study, the researcher directly adapted or modified the previously validated constructs for three major variables: i.e. entrepreneurial characteristics, entrepreneurial attitude and entrepreneurial intention for the present study. Then, it was sent to three subject experts for content validity as per the present research objectives. After incorporating the experts' suggestions, the 55-item questionnaire was reduced to a 49-item questionnaire. After that, the pilot study was also conducted to examine the content validity, and it resulted in no modification and was considered suitable for the data collection.

3.6 Scale validation

In order to test the measurement model and to validate the constructs under study, partial least squares structural equation modelling (PLS-SEM) method is used in the study. This approach is better suited to soft theory (Sosik *et al.*, 2009), and it better acts as a predictive and exploratory tool and is more suited to describe complicated models or linkages (Fornell, 1982; Wold, 1982) as against covariance-based SEM (CB-SEM), which rests under the principles of strong theoretical base for model development with high fit indices (Fornell, 1987). Since the researcher intended to validate a set of constructs, which are complex in nature, a confirmatory structural approach with reflective measures was used to establish the conformity of the measurement model of the study (Richter *et al.*, 2016). Bootstrapping approach was used to validate the measurement model involving second- and third-order constructs (Hair *et al.*, 2019; Gaskin and Lim, 2012).

The analysis explains item-wise loading value of the constructs under study, which shows that the factor loading for each of the items of the construct was found to be >0.5 (Hulland, 1999; Truong and McColl, 2011), confirm that each of the items had significant loading value and thus contribute to the formation of their respective constructs. It further shows the significance value (p-value) of items related to second- and third-order reflective constructs of the measurement model. The reflective values of the items shows that all the loading values are significant at 0.01 level of significance ($p < 0.001$). Thus, each of the items had a significant contribution in making the construct.

3.6.1 Reliability measures. Internal consistency refers to the extent to which the items in a test measure the same construct and can be accessed through Cronbach's alpha (Nunnally, 1978). The assessment of Cronbach's alpha for all the individual constructs was found to be above 0.7. The value of $\alpha \geq 0.7$ suggests that the construct is internally consistent and fairly reliable (Nunnally, 1978). Test results show the value of Cronbach's alpha for achievement $\alpha = 0.857$, innovation $\alpha = 0.882$, personal control $\alpha = 0.884$, self-esteem $\alpha = 0.716$, self-employment intention $\alpha = 0.812$, ambiguity tolerance $\alpha = 0.782$, self-sufficiency $\alpha = 0.765$, locus of control $\alpha = 0.702$, risk-taking propensity $\alpha = 0.738$, planning and organizing ability $\alpha = 0.781$, and social networking $\alpha = 0.725$.

The reliability measure can also be accessed through the value of rho *A*. The value of rho $A \geq 0.7$ is also considered fair measure of reliability. Test result shows the value of rho *A* for achievement = 0.887, innovation = 0.884, personal control = 0.886, self-esteem = 0.733, self-employment intention = 0.827, ambiguity tolerance = 0.786, self-sufficiency = 0.774, locus of control = 0.705, risk-taking propensity = 0.740, planning and organizing ability = 0.786 and social networking = 0.726. Thus, the construct confirms the reliability measures of the data for the study.

3.6.2 Validity measures. 3.6.2.1 Convergent validity. The convergent validity is the degree to which multiple items to measure the same concept are in the agreement (Fornell and Bookstein, 1982; Barclay *et al.*, 1995). The value of composite reliability (CR) ≥0.7 suggests internal consistency reliability of the measures used in the study (Hair *et al.*, 2010; Bagozzi and Yi, 1988). The analysis provides the value of CR for achievement = 0.861, innovation = 0.881, personal control = 0.844, self-esteem = 0.715, self-employment intention = 0.817, ambiguity tolerance = 0.777, self-sufficiency = 0.770, locus of control = 0.786, risk-taking propensity = 0.739, planning and organizing ability = 0.783, and social networking = 0.724 indicating high degree of CR of scale. The average variance extracted (AVE) is the determinant of convergent validity of the scale. It signifies the amount of variance captured by a construct from each scale. The value of AVE ≥ 0.5 provides fair evidence for the convergent validity measures for the construct (Hu *et al.*, 2004; Henseler *et al.*, 2009). The results also provide the value of AVE for achievement = 0.520, innovation = 0.554, personal control = 0.520, self-esteem = 0.503, self-employment intention = 0.531, ambiguity tolerance = 0.516, self-sufficiency = 0.504, locus of control = 0.526, risk-taking propensity = 0.586, planning and organizing ability = 0.519, and social networking = 0.557. Thus, all the constructs are fairly good in terms of convergent validity measures.

3.6.2.2 Discriminant validity. Discriminant validity signifies that the constructs are independent of each other. The discriminant validity signifies a low correlation between the intended construct measurement and the other constructs in the study (Cheung and lee, 2010; Hair *et al.*, 2010). It means that the measures are from their own constructs (Fornell and Larcker, 1981). In partial least square measurement, it signifies a comparison of squared correlation between the construct and variance extracted for a construct (Komiak *et al.*, 2004). The value of discriminant validity measures explains values of achievement = 0.988, ambiguity tolerance = 0.824, innovation = 0.917, locus of control = 0.973, personal control = 0.925, planning and organizing ability = 0.970, risk-taking propensity = 0.832, self-employment intention = 0.877, self-esteem = 0.742, self-sufficiency = 0.833 and social networking = 0.797, signifies a higher value than that of the construct correlation and can be said to have a satisfactory measurement model (Henseler and Chin, 2010).

4. Analysis and results

All the eight hypotheses under study are subjected to test using PLS-SEM approach with the help of smart PLS (trial version) software, the result of which is presented as follows:

4.1 effect of entrepreneurial characteristics on entrepreneurial attitude (testing of H1)

A causal structural model was built to predict whether entrepreneurial characteristics affect entrepreneurial attitude (see Figure 1). Consistent PLS bootstrapping method was used to produce the outcome of the path (see Figure 1). Figure 2 shows the causal path of the inner model where entrepreneurial characteristics significantly predicted entrepreneurial attitude ($\beta = 0.701$, $p < 0.001$). The overall variance explained $R^2 = 0.596$, which means that entrepreneurial characteristics explain 59.6% of variance in entrepreneurial attitude. The loading values of all the reflective second-order constructs of characteristics and attitude dimensions were found to be significant at $p < 0.001$ (See Figure 2). Thus, it can be concluded that entrepreneurial characteristics positively predict entrepreneurial attitude among engineering undergraduates. Thus, positive entrepreneurial characteristics can help in imbibing optimistic attitude, which in turn can contribute to the cause of entrepreneurial development among them.

4.2 effect of entrepreneurial characteristics on entrepreneurial intention (testing of H2–H7)

PLS-SEM was run to determine whether components of entrepreneurial characteristics, namely, ambiguity tolerance, self-sufficiency, locus of control, risk-taking propensity, planning and organizing ability, and social networking, affect self-employment intention among engineering undergraduates towards entrepreneurship in Chhattisgarh state (See Table 1). Consistent PLS bootstrapping method was used to produce the outcome of the path.

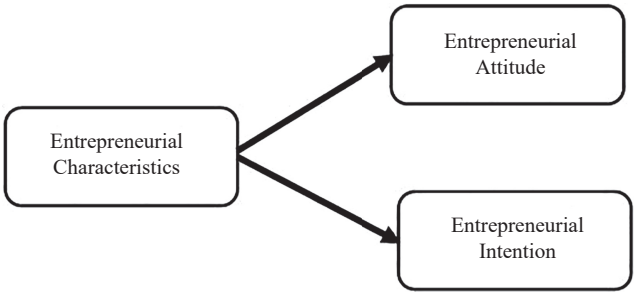

Figure 1.
Conceptual model

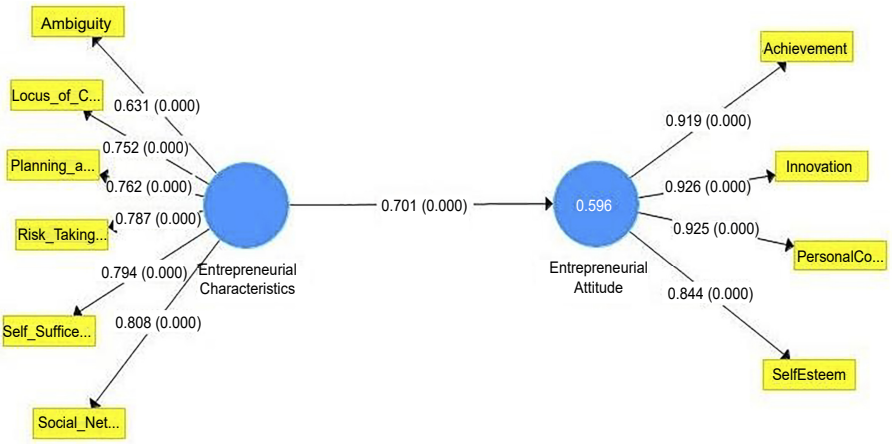

Figure 2.
Structural model of entrepreneurial characteristics on entrepreneurial attitude

Based on the result of analysis, it was found that self-sufficiency ($\beta = 0.889$, $t = 74.458$, $p < 0.001$), risk-taking propensity ($\beta = 0.448$, $t = 42.213$, $p < 0.001$), social networking ($\beta = 0.336$, $t = 38.654$, $p < 0.001$), locus of control ($\beta = 0.301$, $t = 27.245$, $p < 0.001$) and ambiguity tolerance ($\beta = 0.091$, $t = 16.214$, $p < 0.001$) positively predicted self-employment intention of engineering undergraduates towards entrepreneurship. However, results clearly indicated that planning and organizing ability of engineering undergraduates did not contribute to affect their self-employment intention towards entrepreneurship ($\beta = 0.003$, $p > 0.05$).

Further, results indicate the value of $R^2 = 0.605$; thus, the positive predictors in the form of self-sufficiency, risk-taking propensity, social networking, locus of control and ambiguity tolerance can explain a total 60.5% variance in self-employment intention.

4.3 effect of entrepreneurial characteristics on self-employment intention considering entrepreneurial characteristics as an observed variable (testing of H8)

A causal structural model was built to predict whether entrepreneurial characteristics affect self-employment intention. Consistent PLS bootstrapping method was used to produce the outcome of the path. Figure 3 shows the causal path of the inner model where entrepreneurial characteristics significantly predicted self-employment intention ($\beta = 0.722$, $p < 0.001$). The overall variance explained $R^2 = 0.621$, which means that entrepreneurial characteristics explain 62.1% of variance in self-employment intention. The loading values of all the reflective second-order constructs of characteristics and intention dimensions were found to be significant at $p < 0.001$. It concludes that entrepreneurial characteristics positively assist in the increased self-employment intention among engineering undergraduates of Chhattisgarh state.

Predicted relationship	*t* value	Path coefficient (β)	*p* value
Self-sufficiency → SEI	74.458	0.889	0.000
Risk-taking propensity → SEI	42.213	0.448	0.000
Social networking → SEI	38.654	0.336	0.000
Locus of control → SEI	27.245	0.301	0.000
Ambiguity tolerance → SEI	16.214	0.091	0.000
Planning and organizing → SEI	1.22	0.003	0.621

Table 1.
t-value, path coefficient and *p*-value of components of entrepreneurial characteristics on self-employment intention

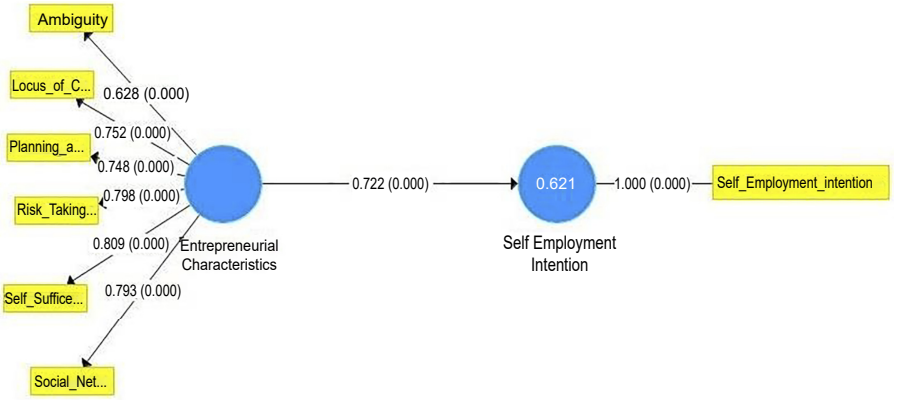

Figure 3.
Structural model of entrepreneurial characteristics on self-employment intention

5. Discussion

(1) The outcome of the first hypothesis test indicated that the entrepreneurial characteristics did provide a significant relationship with entrepreneurial attitude among engineering undergraduates; hence, the hypothesis is accepted. Similar findings (Robinson *et al.*, 1991; Ede *et al.*, 1998; Zhao *et al.*, 2005; Levenburg *et al.*, 2006; Ponmani, 2015) were also noted by previous researchers. Thus, it can be derived that the entrepreneurial characteristics of engineering undergraduates significantly impacted their attitudes. Building high character among undergraduates would result in higher attitude formation, which is likely to promote entrepreneurship. Thus, entrepreneurial characteristics, like facing stress and culturing resistance, autonomy for actions, locus of control, a higher initiative for risk, planning and organizing own deeds and building a high level of networking, are worthy for the enhancement of components of attitude, like the high need for achievement, fostering the greater need for innovation, creation of own business opportunities and building a high level of self-esteem among engineering undergraduate students.

(2) The results of the second hypothesis test indicated that self-sufficiency did emerge as a significant predictor of self-employment intention among engineering undergraduates; hence, the hypothesis is accepted. The findings are consistent with previous studies results (Zhao *et al.*, 2005; Carr and Sequeira, 2007; Shook and Bratianu, 2010). Thus, it can be concluded that with a higher degree of self-sufficiency or freedom offered to undergraduate students, the degree of intention to become entrepreneurs rises. It means that they prefer to become their boss in the future, making decisions independently with a greater degree of freedom.

(3) The outcome of the third hypothesis test predicted that risk-taking propensity did emerge as a significant predictor of self-employment intention among engineering undergraduates; hence, the hypothesis is accepted. The similar results were derived by some previous researchers (Koh, 1995; Gürol and Atsan, 2006; Verheul *et al.*, 2006; Tang *et al.*, 2008). Thus, it can be concluded that risk-taking ability also hugely contributed in the variation of self-employment intention, which signifies an intention to become an entrepreneur is expected to rise with the rise in the ability to take a higher degree of risk among engineering undergraduate students. Thus, the students shortly are ready to invest capital on their own to take advantage of potential business opportunities. They also believe in their risk-reward factor to gain an advantage out of existing opportunities.

(4) The result of the fourth hypothesis test indicated that social networking did emerge as a significant predictor of self-employment intention among engineering undergraduates; hence, the hypothesis is accepted. Previous researchers noted similar results (Manev *et al.*, 2005; Sequeira *et al.*, 2007; Taormina and Lao, 2007). Thus, it can be derived that the social networking dimension of entrepreneurial characteristics also contributed to explaining undergraduates' intention to become entrepreneurs. It signifies that with an ability to socialize and build a network of worthy people, the likeliness of determination to become entrepreneurs among undergraduates increases. Thus, it can be said that the students value their social contacts and can use them in their professional lives. It is also like they can get along quickly with other people to build networking resources.

(5) The outcome of fifth hypothesis test predicted that the locus of control did emerge as a significant predictor of self-employment intention among engineering undergraduates; hence, the hypothesis is accepted. The result is consistent with

previous findings (Mueller and Thomas, 2000; Gürol and Atsan, 2006; Turker and Selcuk, 2009a, b). Thus, it can be concluded that locus of control dimension of entrepreneurial characteristics made a significant contribution in explaining undergraduates' self-employment intention. It signifies that with the outcome of actions for performance by the young undergraduates, the likeliness of their intention for self-employment becomes high and positive. Thus, students believe in their efforts to influence their destiny and are expected to perform to become entrepreneurs.

(6) The outcome of the sixth hypothesis test revealed that ambiguity tolerance did emerge as a significant predictor of self-employment intention among engineering undergraduates; hence, the hypothesis is accepted. The findings are consistent with previous studies (Yusof *et al.*, 2007; Rauch and Frese, 2007). Thus, it can be stated that ambiguity tolerance or resistance to stress also positively affected engineering students' self-employment intention. It implies that with a higher ability to handle confusing or stressful situations, the probability of inculcation positive intention for self-employment increases. Thus, the undergraduate students are ready to deal with challenging situations and prepare to operate in stressful and tense environments to set up their enterprise.

(7) The result of the seventh hypothesis test revealed that planning and organizing ability did not emerge as a significant predictor of self-employment intention among engineering undergraduates; hence, the hypothesis is rejected. Thus, it can be concluded that planning and organizing ability did not find to be linked with their self-employment intention as because technical students lack the planning and organizing skills and requires nurturing for this characteristic. When effective training and education is provided to the technical students, they get better on this characteristic, i.e. planning and organizing ability.

(8) The outcome of the eighth hypothesis test explained that entrepreneurial characteristics did emerge as a significant predictor of self-employment intention among engineering undergraduates; hence, the hypothesis is accepted. Similar result was found by some previous researchers (Baron, 2000; Rauch and Frese, 2007; Indarti and Rostiani, 2008). Thus, it can be concluded that entrepreneurial characteristics, such as self-sufficiency, locus of control, social networking, ambiguity tolerance, risk-taking propensity and planning and organizing ability, did positively contribute to their self-employment intention and to become entrepreneurs. Thus, it hugely requires to nurture the characteristics of the latent technical students, which will further lead to their positive intention to become entrepreneurs.

6. Managerial implications

The contribution of the study can be seen in the theory and practice in the management field. The present study contributes that the entrepreneurial characteristics and their attitude play a significant role in the creation of self-employment intention among engineering undergraduates. The educational institutions as well as the government should be more focused and concerned to develop/nurture entrepreneurial characteristics and attitude among latent technical students to become future entrepreneurs. Becoming an entrepreneur is not a tough task, unless a person has these characteristics and attitude. The results also indicate that the government and concerned authorities should consider these variables as these are essential in creating future entrepreneurs. Entrepreneurship education can be provided to latent entrepreneurs to promote their willingness to start new businesses, which eventually help eliminate India's biggest problem, i.e. unemployment.

The government and policymakers should keep in mind while preparing any strategy for reducing unemployment in the country that only creating new industries/avenues will save the people from poverty, illiteracy, gender inequality and many other social evils. In order to create prosperity in society, the authorities must show confidence in the potential entrepreneurs and take necessary steps towards creating more entrepreneurs, for instance, providing more opportunities to technical students to set up new ventures.

Turning technical students into entrepreneurs would be the best strategy, especially at record unemployment in developing countries, like India, as they have all the traits, attitudes and intention to become entrepreneurs, but most importantly, they have the technical know-how for start-ups and can handle uncertainties. As an effect, a twofold effect will be seen as they will start new ventures and provide jobs to other unemployed.

Unemployment can be eradicated if a long-term strategy is followed in which the government/authorities must be kept working till it happens. It is not something that happens fast and can be seen in action soon; it is a process that takes time to build a culture among students to choose entrepreneurship as a career. When it happens, people will not get motivated to get jobs, either government or private, but will be more motivated to create their enterprise. This culture takes time to build, and the government should be working on building this culture among youths of the country.

7. Limitations

There are few limitations to the present study; namely, the sample is taken from Chhattisgarh state's engineering students, so the results drawn in the study cannot be generalized, and the sample size was limited to 1,000.

8. Conclusion

Fostering entrepreneurship and improving India's employment rate has become a matter of crucial priority. Moreover, to find the appropriate solution, India needs to identify its strength and nourish latent entrepreneurs. Previous studies evidenced that engineering students were found to have more entrepreneurial behaviour than the other discipline students. The present study attempted to find the relationship between entrepreneurial characteristics, attitude and intention among engineering undergraduates in various technical institutions in Chhattisgarh state. Structural equation modelling and hierarchal multiple regression analysis were incorporated to examine the stated relationship, and it revealed that entrepreneurial characteristics did provide a significant relationship with entrepreneurial attitude and intention. Thus, it proves that those engineering undergraduates have entrepreneurial behaviour showing intention to start up a new business, which can be nourished by providing better opportunities and positive environment. The characteristics such as ambiguity tolerance, risk-taking propensity, locus of control, self-sufficiency and social networking significantly affects their attitude and intention to become entrepreneurs. Thus, the government/concerned authorities should look into nourishing their characteristics and attitude more to improve their inclination towards entrepreneurship. Such concrete measures are needed to be taken by government/concerned authorities for transforming the latent technical students into future entrepreneurs.

9. Avenues for future researchers

Future researchers can investigate how many engineering students have started up new ventures after passing or dropping out from the college/university and compare this to other discipline students. It can provide a better picture of whether engineering students are having

more entrepreneurial behaviour and help the government or concerned authorities take specific concrete actions to address India's most significant issue, i.e. unemployment.

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