

Entrepreneurial intentions: the role of family factors, personality traits and self-efficacy

Entrepreneurial
intentions

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Abstract

Purpose – The purpose of this paper is to investigate the impact of family background, big five personality traits and self-efficacy on entrepreneurial intentions (EIs) of business students in private universities in Pakistan.

Design/methodology/approach – Data were collected with the help of structured questionnaires, 500 questionnaires were distributed among the students and 306 useable questionnaires were received and analyzed. Structural equation modeling was used to investigate the relationship among the study variables. SmartPLS was utilized to run the analysis.

Findings – The findings revealed a strong relationship between the exogenous and endogenous variables. The variance accounted by the independent variables was 74.3 percent in the EIs of the students. Family background was found to have a positive impact on the EIs of students. The findings also showed a positive relationship between self-efficacy and EIs. Consciousness, extroversion and openness to experience are positively linked with EIs while neuroticism and agreeableness did not show any relationship.

Originality/value – The study's findings attract the attention of the academicians to take note of the factors examined while training the students the art of entrepreneurship. This is because this study has revealed that if these factors are not present the intention of the students to start a business venture may prove to be weak. Entrepreneurial activities are one of the biggest ways to reduce unemployment, thus, it is suggested that academicians should develop psychological plans and training to motivate the students to convert their intentions into actions.

Keywords Family background, Self-efficacy, Entrepreneurial intention, Personality traits

Paper type Research paper

Introduction

According to the size of labor force, Pakistan is the tenth largest country in the world. Employment-unemployment statistics of the country is an important input for policy and planning purposes. The latest statistics shows that 3.62 million people are unemployed. (Pakistan Economic Survey 2014-2015). One of the biggest challenges faced by the developing countries such as Pakistan is how to get their young people employed. In Pakistan myriad of lads are graduating from the universities every year, without corresponding job opportunities for them, consequently causing a diverse number of violence, crimes and many other social vices.

In order to curb these social vices, the Government of Pakistan has been focusing attention aiming at job creation and equally incorporating entrepreneurial training in the



reviewing of the universities' curriculum so that the youth may learn self-employment skills. Entrepreneurship education focuses on developing entrepreneurial knowledge, capacity, skills as well as entrepreneurial attitudes and intentions that are congruent with the needs of the economy. Entrepreneurship education is one of the best ways to support growth and generate jobs especially when the economic situation lacks the ability to offer enough jobs to the youth (Hussain and Norashidah, 2015; Westhead and Solesvik, 2016).

Entrepreneurship is vital to individual and national economic development as it has a propensity to provide plenty of opportunities to reap ample financial benefits and independence (Aparicio *et al.*, 2016; Audretsch *et al.*, 2015). Regardless of these benefits of entrepreneurship and the training provided by the higher institutions of learning in Pakistan, a great number of graduates are wobbling in search of job without willing to start entrepreneurial activity.

From this we infer that engaging in entrepreneurial activity is not merely dependent on the entrepreneurial education but more of intention. Intention has a propensity to predict the individual behavior and action is the outcome behavior (Krueger, 1993). Thus, intention linked to the entrepreneurial activities has been proven to be the predictor of entrepreneurial behavior. Autio *et al.* (2001) proposed that intentions can explain about 30 percent variance in behavior. Therefore, studying the entrepreneurial intention (EI) has attracted the interest of many researchers which has resulted in many models and theories linked to the explanation of what governs the individuals to engage in entrepreneurship. The most prominent of all is the theory of planned behavior (Ajzen, 1991). This theory explains that attitude, subjective norms and perceived behavioral control are the predictor of intentions, and perceived control and intentions are the predictor of behavior (Ajzen, 1991).

Apart from Ajzen's (1991) seminal work, Krueger (1993) has also proposed an intention model of entrepreneurship which states that perceived desirability and perceived feasibility are antecedent of intentions to engage in EIs, while social norms and self-efficacy are the predictors of perceived desirability and perceived feasibility (Krueger and Brazeal, 1994). The theoretical basis of this study lies in these two models.

Studies on the determinants of EIs have revealed that many factors such as age, gender, marital status (Bates, 1995; Chaudhary, 2017; Samuel *et al.*, 2013), attitude (Lüthje and Franke, 2003; Pihie and Bagheri, 2011), personality (Karabulut, 2016; Zeffane, 2015), locus of control (Olanrewaju, 2013; Chaudhary, 2017), self-efficacy (Bullough *et al.*, 2014; Santoso, 2016; Zhao and Seibert, 2006), entrepreneurial education (Gerba, 2012; Premand *et al.*, 2016) and religiosity (Riaz *et al.*, 2016) are the major predictors of the intentions to become an entrepreneur.

Family background and EI

The model of entrepreneurial event acknowledges that family plays a big role in influencing the intention of a child to start a business. Shapero and Sokol (1982), in particular, emphasized that the father and the mother play important roles as far as the perception of venture feasibility and desirability is concerned. Besides, the family serves a breeding ground for would be entrepreneurs as long as it provides the child with effective and efficient role modeling (Krueger, 1993; Manimala *et al.*, 2006; Mohd Dali *et al.*, 2014; Pruett *et al.*, 2009). Hence, there is a possibility that such child would have a strong preference for entrepreneurship (Krueger *et al.*, 2000; Zhao *et al.*, 2010) as he/she grows older. Although Drennan *et al.* (2004) classified family background into three (i.e. prior exposure to family business, a difficult childhood and frequent relocation as a child), they are of the view that early exposure to entrepreneurship and experience in the family business have impact on the family members' attitude and intentions towards entrepreneurship.

In another study, Carr and Sequeira (2007) support the view that family background plays a major role in shaping EIs. In addition, scholars have also extended family background to include genetic dispositions (Laspita *et al.*, 2012; Nicolaou and Shane, 2010). These scholars are of the view that the relationship between parents and grandparents with entrepreneurial experience breeds structural and communication patterns that are capable of promoting strong preference for entrepreneurship in the grandchildren. However, Kolvereid (1996) noted that an indirect relationship exists between family background and EIs. This was reiterated by Peterman and Kennedy (2003) when they pointed out that the intention to start a new business is indirectly influenced by prior exposure to entrepreneurship. These views prove that family background has implications on the perceptions of venture feasibility and desirability. Its influence on the perceptions thereafter manifest in either low or high EIs:

H1. Family background of the student is positively linked to EIs.

Personality traits and EIs

Personality traits have been studied extensively to assess the impact of different characteristics of individual on EIs. Theory of career choice explains that an individual's career choice is the expression of his/her personality. Prior researchers have also found a positive association of personality traits and EIs (Karabulut, 2016). Here, it is noted that the findings of the previous researchers have been inconsistent. For example, some studies found that personality traits are strong indicator of EI (Karabulut, 2016; Michael Crant, 1991; Zeffane, 2015; Zhao and Seibert, 2006). These studies showed that the individuals who choose entrepreneurship as a career are different in personality traits than those who choose employment in an organization (Kolvereid, 1996). However, few studies also showed the use of personality characteristics to determine that EI give a small predictive validity, explanatory power and inconsistent results (Krueger *et al.*, 2000).

This study utilized the big five personality traits to assess its impact on EIs. Big five consists of extroversion, agreeableness, conscientiousness, openness to experiences and neuroticism.

Conscientiousness

Conscientious individuals have characteristics like dependability, responsibility, dutifulness, deliberation, achievement orientation and a concern for following established rules (McCrae and Costa, 1987). According to McClelland (1961), characteristics like achievement orientation, ambitiousness and persistence of conscientiousness are core characteristics of entrepreneurs (Costa and McCrae, 1992). McClelland (1961) stated that individuals who score more on need for achievement scale are interested to work in a situation where they have more control over the situation (Zhao *et al.*, 2010); thus, individuals concerned to the need for achievement would be inclined towards entrepreneurship. Based on the proposition that individuals are more attracted to the roles that are compatible to their personalities (Zhao *et al.*, 2010), we postulate that:

H2. Conscientiousness is positively linked to EIs.

Openness to experiences

Intellectual curiosity, imaginativeness and creativity are the main characteristics of openness to experience. New ideas (curious) and unconventional values of open to experience people are traits of entrepreneurs (Kirzner, 1973). These open individuals have the creativity required for entrepreneurship. Previous studies stated that openness to experience is a significant predictor of entrepreneurship (Antoncic *et al.*, 2015; Zhao *et al.*, 2010). Openness plays a vital

role in opportunity recognition (Pech and Cameron, 2006). On the basis of the above research, we postulate the following hypothesis:

H3. Openness to experience is positively linked to EIs.

Extroversion

Extrovert individuals are energetic, ambitious, warm, outgoing and enthusiastic (Farrukh *et al.*, 2016). Individual having this characteristics are more likely to be motivated and seek for stimulation (Costa and McCrae, 1992). Extroverts take events as challenges rather than threats (Sulaiman *et al.*, 2013). Extrovert individuals are gregarious, assertive, excitement seekers, and have positive emotions and warmth (Costa and McCrae, 1992). Characteristics of extroverts are useful in developing network of external support which is important for prospective entrepreneurs (Chandler and Hanks, 1994). Costa *et al.* (1992) found that extrovert individuals are attracted to enterprising occupations. Entrepreneurship as a career may appear to be more exciting and stimulating than other traditional business occupations (Zhao *et al.*, 2010); thus, more exciting and attractive to the extrovert individuals. Therefore, we assume:

H4. Extraversion is positively linked to EIs.

Agreeableness

People with agreeable traits of personality are trustworthy, cooperative and courteous (Goldberg *et al.*, 1990). They tend to be tolerant, good natured and considerate (Digman, 1990; Sung and Choi, 2009). In contrast to this, people who score less on agreeable trait are suspicious, self-centered and manipulative. According to Zhao *et al.* (2010), agreeable people are more interested in occupations which have frequent social interactions such as teaching and social work than in business. As entrepreneurship is concerned with creating a new venture that is built around the self-interests of the entrepreneurs, which is totally opposite to the characteristics of agreeable individuals, accordingly we postulate the following hypothesis:

H5. Agreeable is negatively linked to EIs.

Neuroticism

Neurotic individuals are tensed, moody, irritable, not self-confident and morose. As per the literature, entrepreneurs are hardy, optimistic and steady in the face of social pressure, stress and uncertainty.

Furthermore, individuals scoring high on neuroticism are afraid of the situation in which they have probability of failing and they also lack the confidence needed to take initiative in risk taking activities for starting a new venture (Raja *et al.*, 2004), therefore, we hypothesize:

H6. Neuroticism is negatively linked to EIs.

Self-efficacy and EIs

The notion of self-efficacy has been used in many fields of study including the career choice and entrepreneurship. The concept of self-efficacy was coined by Bandura (1977). According to this theory, an individual's perception of his or her abilities plays a vital role in developing his/her intentions to engage in a particular task or activities.

"Self efficacy is one's self cognitive estimate towards his or her capabilities to utilize motivation, available cognitive resources, and courses of action needed to come over the

events in his or her life” (Wood and Bandura, 1989). Boyd and Vozikis (1994) proposed that entrepreneurial choice and development are affected by the self-efficacy of individuals. Self-efficacy is also an important predictor of determining the strength of EIs and putting them in real-term actions. Previous researchers also found that there is a positive relationship between self-efficacy and EIs (Aslam and Hasnu, 2016; Pihie and Bagheri, 2013; Utami, 2017; Elali and Al-Yacoub, 2016).

Though the courses taught in the universities to the business students are believed to be more entrepreneurial in nature. Unfortunately, myriad percentage of the students could not manage to make use of this entrepreneurial aspect of their education and training and end up in unemployment, which is causing many social vices. In the light of this, an investigation into factors which influence such students’ EI is needed.

Furthermore, in Pakistan, the entrepreneurial education is still an alien discipline and it is no more than a decade back that the Higher Education Commission of Pakistan realized its importance with the changing global trends and considered its incorporation in the higher education system (Muhib and Khan, 2010); thus, the research in this field is also new, although there is a large number of studies conducted in the developed economies, however, less attention is paid in the developing countries. Therefore, this study focuses on investigating the impact of five factors model of personality, self-efficacy and family background on EIs of the final year business students in the capital city of Pakistan:

H7. Self-efficacy is positively linked to EIs.

Measures

The EI scale was adopted from Leong (2008) to get the information about the EI of the students.

The self-efficacy scale was adopted from Schwarzer and Jerusalem (1995), while for measuring personality traits big five inventories of John and Srivastava were used to elicit the information regarding the family background; participants were asked about their parent’s occupation.

Data collection

Data were collected with the help of a structured questionnaire; a total number of 500 questionnaires were distributed among the final year students of MBA and BBA in five private sector universities located in the capital territory Islamabad. A total number of 306 questionnaires valid questionnaires were received and analyzed.

Data analysis

To test the study model, we used a partial least square method, which is a second generation multivariate technique (Hair *et al.*, 2014). This technique can simultaneously assess the measurement model and structural model by minimizing the error variance (Hair *et al.*, 2014). SmartPLS version 2 was used to analyze the model developed. Bootstrapping function (5,000 resample) was used to assess the significance level of path.

Common method variance was examined by using Harman’s single factor test. This was done by putting all the principal constructs into the principal component factor analysis. When a single factor emerges from FCA or single general factor accounts for the majority of the covariance among the measures, it is said that evidence method bias exists. In our model, total variance explained by the first factor were 36.7, while the results returned a six factor solution with a variance explained as 79.89 percent, thus confirming no common method bias problem.

Data analysis

Measurement model evaluation

In order to measure the convergent validity we used average variance explained, factor loading and composite reliability. The threshold values for cross loadings were set at > 0.50 as suggested by Hair *et al.* (2010). While for CR and AVE the value should be > 0.70 and > 0.5, respectively. All the threshold values for the above-mentioned criteria were achieved, thus indicating a sufficient convergent validity. Table I shows the values of relevant criteria (Figure 1).

Fornell-Larcker criteria for discriminant validity

To assess the discriminant validity, we used the Fornell and Larcker (1981) criteria. Discriminant validity is the degree to which items differentiate among constructs or measure distinct concepts. From Table II, we can see that the values given in diagonals are higher than their correlations with other variables, thus providing evidence that discriminant validity is established.

Structural model assessment

After assessing the measurement model, we moved to the second stage of assesment of the structural model. In order to assess the power of the model, we calculated R^2 , which

Constructs	Items	Loadings	AVE	CR	Cronbach's α
Entrepreneurial intention	EI1	0.7678	0.5501	0.8586	0.7955
	EI2	0.7293			
	EI3	0.6287			
	EI4	0.8145			
	EI5	0.7551			
Family background	FB1	0.5631	0.6013	0.8135	0.7663
	FB2	0.912			
	FB3	0.8094			
Self-efficacy	SE1	0.7435	0.5783	0.751	0.7105
	SE2	0.6714			
	SE3	0.4255			
	SE4	0.5667			
	SE5	0.6418			
Agreeableness	agree1	0.6546	0.5225	0.7441	0.6951
	agree3	0.6575			
	agree4	0.7136			
	agree5	0.5658			
	consc1	0.6504			
Consciousness	consc2	0.8531	0.5976	0.8148	0.76552
	consc3	0.8013			
	neuro4	0.8238			
Neuroticism	neuro2	0.8145	0.836	0.9532	0.935
	neuro1	0.6297			
	extro1	0.9392			
	extro2	0.923			
Extroversion	extro3	0.8938	0.6632	0.8864	0.8294
	extro4	0.9006			
	open1	0.6932			
	open2	0.8904			
Openness	open3	0.8754	0.7832		
	open4	0.7832			

Table I.
Convergent validity

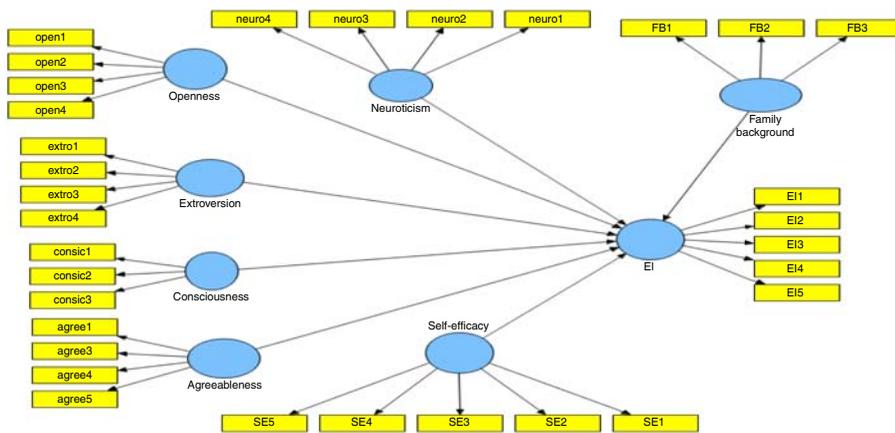


Figure 1. Model of the study

	Family background	Self-efficacy	Agreeableness	Consciousness	Neuroticism	Extroversion	Openness
EI	0.125	0.13	0.19	0.23	0.30	0.47	0.59
Family background	0.742	0.07	0.07	0.01	0.02	0.01	0.01
Self-efficacy	0.350	0.76	0.23	0.36	0.11	0.11	0.11
Agreeableness	0.324	0.07	0.72	0.36	0.11	0.11	0.11
Consciousness	0.487	0.01	0.23	0.77	0.11	0.11	0.11
Neuroticism	0.608	-0.11	0.10	0.27	0.76	0.11	0.11
Extroversion	0.386	-0.11	0.02	0.11	0.47	0.91	0.11
Openness	0.631	0.01	0.27	0.34	0.44	0.72	0.81

Note: Diagonals represent the square root of the AVE while the other entries represent the squared correlation

Table II. Discriminant validity

explain the total variance caused by the exogenous variables. All exogenous variables explained 74.3 percent variances in the endogenous variable. In order to check the significance of the path model, we used the bootstrapping method with 5,000 resample, and path estimates and *t*-values were noted. Figure 2 shows the *t*-statistics results.

Hypothesis testing

The relationship of structural model is determined by the path coefficient among the constructs of the study (Hair *et al.*, 2014). Critical values for two tailed and one tailed are 1.96 and 1.65, respectively. By the use of bootstrapping function of SmartPLS 2, we calculated the *t*-statistics with 5,000 resampling as suggested by Hair *et al.* (2014). Table III shows the *t*-statistics of the respective hypothesis and the decision taken on the basis of *t*-statistics. From the table, it is shown that out of the seven hypotheses tested, five were supported while two were not supported.

Discussion

The purpose of this research was to predict the impact of family background, personality traits and self-efficacy on the EIs of the final year business students.

The findings revealed a strong relationship between the exogenous and endogenous variables. The variance accounted by the independent variables is 74.3 percent in the EIs of the students. The findings of this study are in line with the study of Zhao and Seibert (2006).

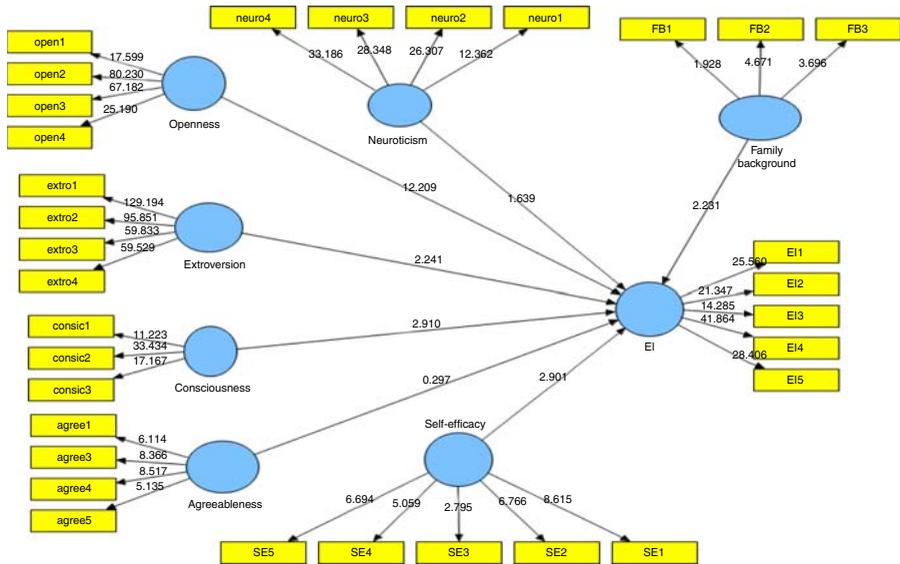


Figure 2. Bootstrapping results

Table III. Hypothesis testing

	β	SE (STERR)	t -statistics (O/STERR)	Decision
Family background→EI	0.2031	0.0462	2.2305	Supported
Self-efficacy→EI	0.2102	0.0353	2.9011	Supported
Agreeableness→EI	-0.010	0.0364	0.297	ns
Consciousness→EI	0.212	0.0428	2.9101	Supported
Neuroticism→EI	0.0854	0.0521	1.6393	ns
Extroversion →EI	0.1991	0.0442	2.2412	Supported
Openness→EI	0.3795	0.0614	12.209	Supported

Family background was found to have a positive impact on the EI of students as prior research works advocated that the children who have entrepreneur parents, have higher inclination to be entrepreneur (Akanbi, 2013; Carr and Sequeira, 2007; McElwee and Al-Riyami, 2003; Mueller, 2006). According to Ajzen (2002), when people have unsure or ambivalent normative influences and attitudes, prior knowledge and experiences' effect will cast a strong influence on the intentions. Being more specific, when people have no clear idea and plan, they will be more influenced by the experiences they had. In this kind of situation the EIs and behavior are often misted up. Therefore, EIs are influenced by the environment (in this study the family background). Moreover, in Pakistani culture, entrepreneur parents wish their children to be exposed to the business occupation, as this will give them more freedom and financial benefits.

The findings also showed a positive relationship between self-efficacy and EIs ($\beta=0.2102$, $t=2.9011$). The foundation of self-efficacy lies on Bandura's (1997) social cognitive theory, which states that human behavior is a product of interpersonal influences. The findings of this research have endorsed this statement. Moreover, the study concurs with the research works which found a strong positive effect of self-efficacy on EI of students (BarNir *et al.*, 2011; Culbertson *et al.*, 2011; Zhao *et al.*, 2005). Thus, we can conclude that an individual's belief on his or her abilities affects his/her intention to start a new business venture.

In terms of the relationship between the big five personality traits and EI, conscientiousness ($\beta = 0.212$, $t = 2.9101$), extroversion ($\beta = 0.1991$, $t = 2.2412$) and openness to experience ($\beta = 0.3795$, $t = 12.209$) are positively linked with EIs, while neuroticism and agreeableness did not show any relationship.

Extrovert people are more outgoing and sociable. On the basis of these characteristics, we could say that high level of extroversion plays a vital role in resource utilization by developing networks and by utilizing existing networks efficiently and effectively (Farrukh *et al.*, 2016; İrengün and Arıkboğa, 2015). The findings of this study are in line with many previous research works (Brandstatter, 2011; Brice, 2004; Chen *et al.*, 2012; Ismail *et al.*, 2009; Kuratko *et al.*, 2005). Openness trait of personality carries the characteristics of curiosity and imagination. The individuals carrying this trait are supposed to be more curious in searching new experiences and thus they are more inclined to the activities which are more adventurous such as starting a new business. This study empirically proved this notion.

Unfortunately, the reason why neuroticism, agreeableness are not related to EI is not obvious. The results of this research, however, opposed Krueger *et al.* (2000) who found that personality traits do not have impact on individuals' EIs.

Implications and conclusion

Few implications emerged from the study. The study's findings attract the attentions of the academicians to take into cognizance the factors examined while training the students in entrepreneurship skills because this study has revealed that if these factors are not present the intention of the students to start a business, venture may prove to be weak. Entrepreneurial activities are one of the biggest ways to reduce the unemployment; thus, it is suggested that academicians should develop psychological plans and training to motivate the students to convert their intentions into action. The findings also suggest to academicians to develop more effective and purposive entrepreneurial training and education to enhance the self-efficacy of the students. To achieve this, the academicians should engage the students in some real-life entrepreneurial situation by providing those opportunities for writing plans, case studies and role playing. Specially, in Pakistan, there is an urgent need for providing students with the experiential entrepreneurship learning activities. These activities can nurture their attitude towards entrepreneurship. In a nutshell, family background, personality traits and self-efficacy are the vital factors connected to EIs.

Limitation and future study suggestions

Like many other research works, this study also has few limitations. The first limitation is the target population as the study only focused on the five universities in the capital territory, which made the generalization of the study limited. The second limitation of the study is linked to the variables used. As the study only focused on the individual characteristics of the students ignoring many other important factors such as financial support, government support and economic situation of the country, we suggest that the future studies should incorporate these variables to get more understanding of EIs.

References

- Ajzen, I. (1991), "The theory of planned behavior", *Organizational Behavior and Human Decision Processes*, Vol. 50 No. 2, pp. 179-211, available at: [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Akanbi, S. (2013), "Familial factors, personality traits and self-efficacy as determinants of entrepreneurial intention among vocational based college of education students in Oyo State, Nigeria", *The African Symposium*, Vol. 13 No. 2, pp. 3-13.

- Antoncic, B., Bratkovic Kregar, T., Singh, G. and Denoble, A.F. (2015), "The Big Five personality-entrepreneurship relationship: evidence from Slovenia", *Journal of Small Business Management*, Vol. 53 No. 3, pp. 819-841, available at: <https://doi.org/10.1111/jsbm.12089>
- Aparicio, S., Urbano, D. and Audretsch, D. (2016), "Institutional factors, opportunity entrepreneurship and economic growth: panel data evidence", *Technological Forecasting and Social Change*, Vol. 102 No. 1, pp. 45-61, available at: <https://doi.org/10.1016/j.techfore.2015.04.006>
- Aslam, S. and Hasnu, S. (2016), "Issues and constraints perceived by young entrepreneurs of Pakistan", *World Journal of Entrepreneurship, Management and Sustainable Development*, Vol. 12 No. 1, pp. 50-65, available at: <http://dx.doi.org/10.1108/20425961211221598%0A>; <http://dx.doi.org/10.1108/14720700910984936%0A>
- Audretsch, D.B., Belitski, M. and Desai, S. (2015), "Entrepreneurship and economic development in cities", *Annals of Regional Science*, Vol. 55 No. 1, pp. 33-60, available at: <https://doi.org/10.1007/s00168-015-0685-x>
- Autio, E., Keeley, R.H., Klofsten, M., Parker, G.G.C. and Hay, M. (2001), "Entrepreneurial intentions among business students", *Enterprise and Innovation Management Studies*, Vol. 2 No. 2, pp. 145-160, available at: <https://doi.org/10.1080/1463244011009463>
- Bandura, A. (1977), "Self-efficacy: toward a unifying theory of behavioral change", *Psychological Review*, Vol. 84 No. 2, p. 191.
- BarNir, A., Watson, W.E. and Hutchins, H.M. (2011), "Mediation and moderated mediation in the relationship among role models, self-efficacy, entrepreneurial career intention, and gender", *Journal of Applied Social Psychology*, Vol. 41 No. 2, pp. 270-297, available at: <https://doi.org/10.1111/j.1559-1816.2010.00713.x>
- Bates, T. (1995), "Self-employment entry across industry groups", *Journal of Business Venturing*, Vol. 10 No. 2, pp. 143-156, available at: [https://doi.org/10.1016/0883-9026\(94\)00018-P](https://doi.org/10.1016/0883-9026(94)00018-P)
- Boyd, N.G. and Vozikis, G.S. (1994), "The influence of self-efficacy on the development of entrepreneurial intentions and actions", *Entrepreneurship Theory and Practice*, Vol. 18 No. 1, p. 63.
- Brandstatter, H. (2011), "Personality aspects of entrepreneurship: a look at five meta-analyses", *Personality and Individual Differences*, Vol. 51 No. 3, pp. 222-230, available at: <https://doi.org/10.1016/j.paid.2010.07.007>
- Brice, J. (2004), *The Role of Personality Dimensions on the Formation of Entrepreneurial Intentions*, Mississippi State University Press, Mississippi.
- Bullough, A., Renko, M. and Myatt, T. (2014), "Danger zone entrepreneurs: the importance of resilience and self-efficacy for entrepreneurial intentions", *Entrepreneurship: Theory and Practice*, Vol. 38 No. 3, pp. 473-499, available at: <https://doi.org/10.1111/etap.12006>
- Carr, J.C. and Sequeira, J.M. (2007), "Prior family business exposure as intergenerational influence and entrepreneurial intent: a theory of planned behavior approach", *Journal of Business Research*, Vol. 60 No. 10, pp. 1090-1098, available at: <https://doi.org/10.1016/j.jbusres.2006.12.016>
- Chandler, G.N. and Hanks, S.H. (1994), "Founder competence, the environment, and venture performance", *Entrepreneurship: Theory and Practice*, Vol. 18 No. 3, pp. 77-90.
- Chaudhary, R. (2017), "Demographic factors, personality and entrepreneurial inclination", *Education + Training*, Vol. 59 No. 2, pp. 171-187, available at: <https://doi.org/10.1108/ET-02-2016-0024>
- Chen, S., Jing, L. and Sung, M. (2012), "University students' personality traits and entrepreneurial intention: using entrepreneurship and entrepreneurial attitude as mediating variable", *International Journal of Economic Research*, Vol. 3 No. 3, pp. 76-82.
- Costa, P.T. and McCrae, R.R. (1992), "Four ways five factors are basic", *Personality and Individual Differences*, Vol. 13 No. 6, pp. 653-665.
- Culbertson, S.S., Smith, M.R. and Leiva, P.I. (2011), "Enhancing entrepreneurship: the role of goal orientation and self-efficacy", *Journal of Career Assessment*, Vol. 19 No. 2, pp. 115-129, available at: <https://doi.org/10.1177/1069072710385543>

- Digman, J.M. (1990), "Personality structure: emergence of the five-factor model", *Annual Review of Psychology*, Vol. 41 No. 1, pp. 417-440, available at: <https://doi.org/10.1146/annurev.ps.41.020190.002221>
- Drennan, J., Kennedy, J. and Renfrow, P. (2004), "Impact of childhood experiences on the development of entrepreneurial intentions", *The International Journal of Entrepreneurship and Innovation*, Vol. 6 No. 4, pp. 231-238.
- Elali, W. and Al-Yacoub, B. (2016), "Factors affecting entrepreneurial intentions among Kuwaitis", *World Journal of Entrepreneurship, Management and Sustainable Development*, Vol. 12 No. 1, pp. 18-34.
- Farrukh, M., Ying, C. and Mansori, S. (2016), "Intrapreneurial behavior: an empirical investigation of personality traits", *Management & Marketing. Challenges for the Knowledge Society*, Vol. 11 No. 4, pp. 597-609, available at: <https://doi.org/10.1515/mmcks-2016-0018>.
- Fornell, C. and Larcker, D.F. (1981), "Structural equation models with unobservable variables and measurement error: Algebra and statistics", *Journal of Marketing Research*, pp. 382-388.
- Gerba, D.T. (2012), "Impact of entrepreneurship education on entrepreneurial intentions of business and engineering students in Ethiopia", *African Journal of Economic and Management Studies*, Vol. 3 No. 2, pp. 258-277, available at: <https://doi.org/10.1108/20400701211265036>
- Goldberg, L.R., John, O.P., Kaiser, H., Lanning, K. and Peabody, D. (1990), "An alternative 'description of personality': the big-five factor", *Structure*, Vol. 59 No. 6, pp. 1216-1229.
- Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E. and Tatham, R.L. (2010), *Multivariate Data Analysis*, Pearson.
- Hair, J.F. Jr, Hult, G.T.M., Ringle, C. and Sarstedt, M. (2014), "A primer on partial least squares structural equation modeling (PLS-SEM)", Sage Publications.
- Hussain, A. and Norashidah (2015), "Impact of entrepreneurial education on entrepreneurial intentions of Pakistani students", *Journal of Entrepreneurship and Business Innovation*, Vol. 2 No. 1, pp. 43-53, available at: <https://doi.org/10.5296/jebi.v2i1.7534>
- İrengün, O. and Arikboğa, Ş. (2015), "The effect of personality traits on social entrepreneurship intentions: a field research", *Procedia – Social and Behavioral Sciences*, Vol. 195, pp. 1186-1195, available at: <https://doi.org/10.1016/j.sbspro.2015.06.172>
- Ismail, M., Khalid, S.A., Othman, M., Rahman, N.A., Kassim, K.M. and Zain, R.S. (2009), "Entrepreneurial intention among Malaysian undergraduates", *International Journal of Business and Management*, Vol. 4 No. 10, pp. 54-60, available at: www.ccsenet.org/journal/index.php/ijbm/article/view/3935
- Karabulut, A.T. (2016), "Personality traits on entrepreneurial intention", *Procedia – Social and Behavioral Sciences*, Vol. 229, pp. 12-21, available at: <https://doi.org/10.1016/j.sbspro.2016.07.109>
- Kirzner, I.M. (1973), *Competition and Entrepreneurship*, University of Chicago Press, Chicago, IL.
- Kolvreid, L. (1996), "Prediction of employment status choice intentions", *Entrepreneurship: Theory and Practice*, Vol. 21 No. 1, pp. 47-58.
- Krueger, N. (1993), "The impact of prior entrepreneurial exposure on perceptions of new venture feasibility and desirability", *Entrepreneurship: Theory and Practice*, Vol. 18 No. 1, pp. 5-22.
- Krueger, N.F. and Brazeal, D.V. (1994), "Entrepreneurial potential and potential entrepreneurs", *Entrepreneurship Theory and Practice*, Vol. 18 No. 3, pp. 91-104, available at: <https://doi.org/10.2139/ssrn.1505244>
- Krueger, N.F., Reilly, M.D. and Carsrud, A.L. (2000), "Competing models of entrepreneurial intentions", *Journal of Business Venturing*, Vol. 15 No. 5, pp. 411-432.
- Kuratko, D.F., Hornsby, J.S. and Bishop, J.W. (2005), "Managers' corporate entrepreneurial actions and job satisfaction", *The International Entrepreneurship and Management Journal*, Vol. 1 No. 3, pp. 275-291.

- Lasпита, S., Breugst, N., Heblich, S. and Patzelt, H. (2012), "Intergenerational transmission of entrepreneurial intentions", *Journal of Business Venturing*, Vol. 27 No. 4, pp. 414-435, available at: <https://doi.org/10.1016/j.jbusvent.2011.11.006>
- Leong, C.K. (2008), "Entrepreneurial intention: an empirical study among Open University Malaysia Students", dissertation, Open University Malaysia Center for Graduate Studies.
- Lüthje, C. and Franke, N. (2003), "The 'making' of an entrepreneur: testing a model of entrepreneurial intent among engineering students at MIT", *R&D Management*, Vol. 33 No. 2, pp. 135-147, available at: <https://doi.org/10.1111/1467-9310.00288>
- McClelland, D.C. (1961), *The Achievement Society*, Von Nostrand, Princeton, NJ.
- McCrae, R.R. and Costa, P.T. (1987), "Validation of the five-factor model of personality across instruments and observers", *Journal of Personality and Social Psychology*, Vol. 52 No. 1, p. 81.
- McElwee, G. and Al-Riyami, R. (2003), "Women entrepreneurs in Oman: some barriers to success", *Career Development International*, Vol. 8 No. 7, pp. 339-346, available at: <https://doi.org/10.1108/13620430310505296>
- Manimala, M.J., Jose, P.D. and Thomas, K.R. (2006), "Organizational constraints on innovation and intrapreneurship: insights from public sector", *Vikalpa: The Journal for Decision Makers*, Vol. 31 No. 1, pp. 49-60.
- Michael Crant, J. (1991), "The proactive personality scale as a predictor of entrepreneurial intentions", *Journal of Small Business Management*, Vol. 34 No. 3, pp. 1-11.
- Mohd Dali, N.R.S., Abdullah, M., Hisham, S., Azman, A.R., Nordin, S.N., Muhammad, I. and Farah, M.Y. (2014), "The relationships between religiosity and entrepreneurial intention", *International Muamalat and Entrepreneurship Conference, Shah Alam, November*, available at: <https://doi.org/10.1017/CBO9781107415324.004>
- Mueller, P. (2006), "Entrepreneurship in the region: breeding ground for nascent entrepreneurs?", *Small Business Economics*, Vol. 27 No. 1, pp. 41-58, available at: <https://doi.org/10.1007/s11187-006-6951-7>
- Muhib, Y. and Khan, N. (2010), "The prospects of entrepreneurial education in Pakistan: an economic perspective", *Journal of Independent Studies and Research – Management, Social Sciences and Economics*, Vol. 8 No. 2, pp. 1-10.
- Nicolaou, N. and Shane, S. (2010), "Entrepreneurship and occupational choice: genetic and environmental influences", *Journal of Economic Behavior and Organization*, Vol. 76 No. 1, pp. 3-14, available at: <https://doi.org/10.1016/j.jebo.2010.02.009>
- Olanrewaju, K. (2013), "Demographics, entrepreneurial self-efficacy and locus of control as determinants of adolescents' entrepreneurial intention in Ogun State, Nigeria", *Journal of Educational Research and Studies*, Vol. 1 No. 2, pp. 12-16, available at: www.peakjournals.org/Archive/jers/2013/mar/pdf/JERS-13-020Ayodele.pdf
- Pech, R.J. and Cameron, A. (2006), "An entrepreneurial decision process model describing opportunity recognition", *European Journal of Innovation Management*, Vol. 9 No. 1, pp. 61-78, available at: <https://doi.org/10.1108/14601060610640023>
- Peterman, N.E. and Kennedy, J. (2003), "Enterprise education: influencing students' perceptions of entrepreneurship", *Entrepreneurship Theory and Practice*, Vol. 28 No. 2, pp. 129-144.
- Pihie, Z.A.L. and Bagheri, A. (2011), "Malay students' entrepreneurial attitude and entrepreneurial efficacy in vocational and technical secondary schools of Malaysia", *Pertanika Journal of Social Science and Humanities*, Vol. 19 No. 2, pp. 433-447, available at: <https://doi.org/10.1080/13636820.2010.509806>
- Pihie, Z.A.L. and Bagheri, A. (2013), "Self-efficacy and entrepreneurial intention: the mediation effect of self-regulation", *Vocations and Learning*, Vol. 6 No. 3, pp. 385-401, available at: <https://doi.org/10.1007/s12186-013-9101-9>
- Premand, P., Brodmann, S., Almeida, R., Grun, R. and Barouni, M. (2016), "Entrepreneurship education and entry into self-employment among university graduates", *World Development*, Vol. 77 No. 1, pp. 311-327, available at: <https://doi.org/10.1016/j.worlddev.2015.08.028>

- Pruett, M., Shinnar, R., Toney, B., Llopis, F. and Fox, J. (2009), "Explaining entrepreneurial intentions of university students: a cross-cultural study", *International Journal of Entrepreneurial Behaviour & Research*, Vol. 15 No. 6, pp. 571-594, available at: <https://doi.org/10.1108/13552550910995443>
- Raja, U., Johns, G., Ntalianis, F. and Johns, G. (2004), "The impact of personality on psychological contracts", *The Academy of Management Journal*, Vol. 47 No. 3, pp. 350-367.
- Riaz, Q., Farrukh, M., Rehman, S.U. and Ishaque, A. (2016), "Religion and entrepreneurial intentions: an empirical investigation", *International Journal of Advanced and Applied Sciences*, Vol. 3 No. 9, pp. 31-36.
- Samuel, Y.A., Ernest, K. and Awuah, J.B. (2013), "An assessment of entrepreneurship intention among Sunyani polytechnic marketing students", *International Review of Management and Marketing*, Vol. 3 No. 1, pp. 37-49.
- Santoso, S. (2016), "Influence of self-efficacy to student entrepreneurial-intention with student background as a moderating variable: case study in Indonesia", *Journal of Information, Business and Management*, Vol. 8 No. 4, pp. 131-145, available at: <https://doi.org/2076-9202>
- Schwarzer, R. and Jerusalem, M. (1995), "Generalized self-efficacy scale", in Weinman, U.J., Wright, S. and Johnston, I.M. (Eds), *Measures in Health Psychology: A User's Portfolio. Causal and Control Beliefs*, pp. 35-37.
- Shapiro, A. and Sokol, L. (1982), "The social dimension of entrepreneurship", in Kent, C.A., Sexton, D.L. and Vesper, K.H. (Eds), *Encyclopedia of Entrepreneurship*, Prentice-Hall, Englewood Cliffs, NJ, pp. 72-90.
- Sulaiman, W.S.W., Abdul Kadir, N.B., Halim, F.W., Omar, F., Latif, R.A. and Sulaiman, W.S.W. (2013), "Structural relations between personality traits, coping strategy, social support and well-being among Adolescents", *Pertanika Journal of Social Science and Humanities*, Vol. 21 No. 1, pp. 121-134.
- Sung, S.Y. and Choi, J.N. (2009), "Do Big Five personality factors affect individual creativity? The moderating role of extrinsic motivation", *Social Behavior and Personality*, Vol. 37 No. 7, pp. 941-956, available at: <https://doi.org/10.2224/sbp.2009.37.7.941>
- Utami, C.W. (2017), "Attitude, subjective norms, perceived behavior, entrepreneurship education and self-efficacy toward entrepreneurial intention university student in Indonesia", *European Research Studies Journal*, Vol. XX No. 2, pp. 475-495, available at: www.ersj.eu/repec/ers/papers/17_2_A_p29.pdf
- Westhead, P. and Solesvik, M.Z. (2016), "Entrepreneurship education and entrepreneurial intention: do female students benefit?", *International Small Business Journal*, Vol. 34 No. 8, pp. 979-1003, available at: <https://doi.org/10.1177/0266242615612534>
- Wood, R. and Bandura, A. (1989), "Impact of conceptions of ability on self-regulatory mechanisms and complex decision making", *Journal of Personality and Social Psychology*, Vol. 56 No. 3, pp. 407-415, available at: <https://doi.org/10.1037/0022-3514.56.3.407>
- Zeffane, R. (2015), "Trust, personality, risk-taking, and entrepreneurship: exploring gender difference among nascent and actual entrepreneur in the United Arab Emirates", *World Journal of Entrepreneurship, Management and Sustainable Development*, Vol. 11 No. 3, pp. 191-209.
- Zhao, H. and Seibert, S. (2006), "The Big Five personality dimensions and entrepreneurial status: a meta-analytical review", *Journal of Applied Psychology*, Vol. 91 No. 2, pp. 259-271, available at: <https://doi.org/10.1037/0021-9010.91.2.259>
- Zhao, H., Seibert, S.E. and Lumpkin, G.T. (2010), "The relationship of personality to entrepreneurial intentions and performance: a meta-analytic review", *Journal of Management*, Vol. 36 No. 2, pp. 381-404.
- Zhao, H., Seibert, S.K. and Hills, G.E. (2005), "The mediating role of self-efficacy in the development of entrepreneurial intentions", *Journal of Applied Psychology*, Vol. 90 No. 6, pp. 1265-1272, available at: <https://doi.org/10.1037/0021-9010.90.6.1265>

Appendix. Questionnaire items

Entrepreneurial intentions

- I intend to set up a company in the future.
- I will choose a career as an entrepreneur.
- I prefer to be an entrepreneur rather than to be an employee in a company or an organization.
- The idea is appealing of one day starting your own business.
- I want the freedom to express myself in my own business.

Personality traits

- I see myself as someone who is talkative.
- I see myself as someone who is full of energy.
- I see myself as someone who generates a lot of enthusiasm.
- I see myself as someone who tends to be quiet.
- I see myself as someone who has an assertive personality.
- I see myself as someone who is sometimes shy, inhibited.
- I see myself as someone who is outgoing, sociable.
- I see myself as someone who tends to find fault with others.
- I see myself as someone who is helpful and unselfish with others.
- I see myself as someone who starts quarrels with others.
- I see myself as someone who has a forgiving nature.
- I see myself as someone who is generally trusting.
- I see myself as someone who is considerate and kind to almost everyone.
- I see myself as someone who is sometimes rude to others.
- I see myself as someone who likes to cooperate with others.
- I see myself as someone who does a thorough job.
- I see myself as someone who can be somewhat careless.
- I see myself as someone who is a reliable worker.
- I see myself as someone who tends to be disorganized.
- I see myself as someone who tends to be lazy.
- I see myself as someone who perseveres until the task is finished.
- I see myself as someone who does things efficiently.
- I see myself as someone who makes plans and follows through with them.
- I see myself as someone who is easily distracted.
- I see myself as someone who is depressed, blue.
- I see myself as someone who is relaxed, handles stress well.
- I see myself as someone who worries a lot.
- I see myself as someone who is emotionally stable, not easily upset.
- I see myself as someone who can be moody.
- I see myself as someone who remains calm in tense situations.
- I see myself as someone who gets nervous easily.
- I see myself as someone who is original, comes up with new ideas.
- I see myself as someone who is curious about many different things.
- I see myself as someone who is ingenious, a deep thinker.
- I see myself as someone who has an active imagination.
- I see myself as someone who is inventive.
- I see myself as someone who values artistic, esthetic experiences.
- I see myself as someone who is sophisticated in art, music, or literature.

Self-efficacy

- I can always manage to solve difficult problems if I try hard enough.
- If someone opposes me, I can find the means and ways to get what I want.
- It is easy for me to stick to my aims and accomplish my goals.

I am confident that I could deal efficiently with unexpected events.
Thanks to my resourcefulness, I know how to handle unforeseen situations.
I can solve most problems if I invest the necessary efforts.
I can remain calm when facing difficulties because I can rely on my coping abilities.
When I am confronted with a problem, I can usually find several solutions.
If I am in trouble, I can usually think of a solution.
I can usually handle whatever comes my way.

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