Predicting entrepreneurial intention among business students of public sector universities of Pakistan: an application of the entrepreneurial event model

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Abstract

Purpose – This paper tries to examine the entrepreneurial intention of business students of public sector universities of Pakistan through the entrepreneurial event model (EEM).

Design/methodology/approach – The study is a quantitative study and is based on cross-sectional data. The data is collected through a survey questionnaire. The random sample technique is used for data collection. The respondents are the business students of different public sector universities of Pakistan. In total 310 valid samples are utilized for final analysis.

Findings – By employing to SEM through Analysis of Moment Structure (AMOS) version 26.0, the overall findings show a positive and significant impact of perceived feasibility (PF), perceived desirability (PD) and self-efficacy on entrepreneurial intention (EI).

Practical implications – The outcomes of the study may be helpful for policymakers to formulate the policies regarding the promotion of entrepreneurship and self-employment for reducing the burden of unemployment. Possibly, it may prove as an appliance for prosperity and income generation through boosting entrepreneurship. Moreover, it may contribute to the literature of entrepreneurship, mainly for Pakistan and the developing world.

Originality/value – The study would support in achieving economic development by diverting individuals' intention for entrepreneurship.

Keywords Entrepreneurial intention, Perceived feasibility, Perceived desirability, Self-efficacy, Entrepreneurial event model

Paper type Research paper

Introduction

In the present era, the developed and developing economies of the world are facing many socio-economic problems such as economic downturns, globalization, corruption, inflation, unemployment and income generation. To overwhelm these problems; the entrepreneurship is playing a significant and positive role through job making, economic development and declining in the inflation and unemployment (Gibb and Hannon, 2006; Johansen *et al.*, 2012). In this way, to divert individuals' entrepreneurial intention (EI) is a dire need of every economy. The EI is known as the individuals' readiness for accomplishing a targeted behaviour (Shapero, 1982). It is the individuals' commitment towards their targeted behaviour through the interpretation of human behaviour (Krueger, 1993).

According to the renowned scholars like Ajzen (1991); Shapero and Sokol (1982); Soomro and Shah (2015); Ramoni (2016), an EI can be developed through the theory of planned behaviour (TPB) (attitude towards behaviour, subjective norms and perceived behavioural control), entrepreneurial event model (EEM) (perceived feasibility (PF) and perceived desirability (PD)) and the environmental factors. However, among Pakistani individuals, EI can be developed through family background, self-efficacy, personality traits, social support, perceived environment, entrepreneurial skills and TPB theory (Farrukh *et al.*, 2017; Farooq, 2018; Soomro *et al.*, 2019). Apart from this, self-efficacy is the best predictor of EI (Solesvik *et al.*, 2012; Moghavvemi and Salleh, 2014).

Nevertheless, it still lacks empirical investigation of EI through the integration of EEM with self-efficacy, particularly in Pakistan. To fill this gap, this paper tries to investigate the EI through EEM factors as PD and PF with the combination of self-efficacy among the business students of public sector universities of Pakistan. The findings of the present study may be helpful for policymakers to formulate the policies regarding entrepreneurial promotion and self-employment for reducing the burden of unemployment. Moreover, it may deepen the entrepreneurship literature, particularly for Pakistan and the developing countries. Lastly, such a study may contribute to the literature of EEM and entrepreneurship education.

Literature review

In present days, the inclination of entrepreneurship is continuously growing. The main reasons for its tremendous growth are economic growth, prosperity, job creation as well as innovative activities which are the pillars for the development of a society (Shane and Venkataraman, 2000; Galloway and Brown, 2002). However, it is still a problem in entrepreneurship research that what are the factors which may divert the individuals' intentions and attitudes for performing the entrepreneurial activities? (Autio *et al.*, 2001; Francis *et al.*, 2004; Kaijun and Sholihah, 2015). An intention linked to entrepreneurship is an assurance to switch a new business (Krueger, 1993; Autio *et al.*, 2001). Among the respondents of Britain and Spain, the formation of EI is only possible through self-efficacy, knowledge related to entrepreneurship (entrepreneurial education) and awareness (Linan *et al.*, 2013).

On the other hand, Owoseni and Olakitan (2014) emphasizingly recommended a positive association between self-efficacy and EI. EI, motivation and achievement are substantially associated with each other. Vajihe and Mehdi (2014) found a significant difference among the students who are not pursuing enterprise education and who are pursuing. In Malaysia, the EI is positively and significantly associated with personality traits such as social learning, risk and tolerance of ambiguity (Tateh *et al.*, 2014). While in the countries of South Asia (Taiwan) and Europe (Spain), the constructs such as self-efficacy, personal attraction and social norms are positively and significantly related with each other (Linan and Chen, 2006).

According to Jang *et al.* (2019), entrepreneurship education is the best practice in co-curricular programmes. It shapes the EI to increase the likelihood of participants. The level of human capital social and entrepreneurial personality was noticed to be higher than social capital based on the experience of the students in social entrepreneurial activities. Furthermore, there is a significant difference between entrepreneurial personality, human capital and social capital according to the duration of students' experience in entrepreneurial activities (Rahman *et al.*, 2019). Similarly, the transfer of education by faculty (teachers) has a positive impact upon undergraduate students of Brazilian and Peruvian universities to start their productions (business) (Filho *et al.*, 2015). This research suggests that a positive attitude to risk is an essential facet in the early development of EI. In the perception of Bell (2019), attitude to risk is a significant factor that is responsible for developing EI. Besides, self-efficacy is found to be the second most significant predictor in predicting EI in the business

and education faculties. Among the community college students, entrepreneurial education is investigated as a mediator in developing the relationship between entrepreneurial tendency and EI (Baskaran *et al.*, 2019).

In the same manner, among the Chinese students, the indirect influence of perceived behavioural control on a presence of entrepreneurship education was observed by Kaijun and Sholihah (2015). Regarding Ukraine, Solesvik *et al.* (2012) pointed out that the PD only predicts the development of EI, PF and attitude towards the behaviour. In contrary to it, PD negatively affects the PF. Dabic *et al.* (2012) suggested that male students are more willing to take part in performing entrepreneurial activities and open their businesses as compared to female students. There is a significant gender divergence about entrepreneurial feasibility and entrepreneurial desirability. In the same vein, Mamun *et al.* (2019) found a significant correlation among attitudes, the perceived behavioural control and recycling intention. Alam *et al.* (2019) highlighted a positive and significant influence of attitude and perceived behaviour control on EIs. Moreover, entrepreneurial motivation significantly affects the intention–behaviour link in TPB, which is novel finding in the extension of TPB.

In the context of Pakistan and Thailand, there is a significant difference in personal attitude, subjective norms and perceived behavioural control towards entrepreneurial intention existing between the students (Soomro *et al.*, 2018). Rittippant *et al.* (2011) conducted empirical research in Thailand. The finding suggested as PD, future unemployment, subjective norms and personal attitude are the best predictors of EI development. Mahmood *et al.* (2017) proposed that in Malaysia, the EI among business students is inclined by relational and educational support. Whereas self-confidence mediates the relationship between relational support and educational support. In a similar mode, TPB factors have significant contribution in developing EI as suggested by (Taha *et al.*, 2017). In Pakistan, a study was conducted by Shah and Soomro (2017) among the university students. The outcomes of the study revealed a significant association between EI, subjective norms and attitudes towards the behaviour. In contrary to it, EI and perceived behavioural control are no to be associated with each other. Among Asnaf millennials in Malaysia, Mahmood *et al.* (2019) found the indirect effect (EI) of attitude towards entrepreneurship, subjective norms and perceived behavioural control on the pre-start-up behaviour. Further, the risk-taking propensity is predicted by such antecedents.

In consequence, the related literature underlined the different constructs such as future unemployment, PD, opportunity evaluation, expected outcomes, social norms, self-efficacy, personal attitude, superordinate goal, triggering event, entrepreneurial intent, propensity to act, entrepreneurial experience, subjective norms, perceptions of opportunity and social support breadth. These factors were usually tested with EEM (Shapero, 1975; Shapero and Sokol, 1982; Rittippant *et al.*, 2011; Ali *et al.*, 2016; Shah and Soomro, 2017; Taha *et al.*, 2017; Mahmood *et al.*, 2017). Furthermore, EEM was also tested with TPB and self-efficacy to consider the entrepreneurs' usage intention of IT innovation as well as self-employment intention among the students (Solesvik *et al.*, 2012; Moghavvemi and Salleh, 2014). In Pakistan, the EI was investigated through personality traits, family background, self-efficacy, social support, entrepreneurial skills, perceived environment and TPB theory (Farrukh *et al.*, 2017; Farooq, 2018; Soomro *et al.*, 2019). Nonetheless, the field researchers have frequently been unnoticed the investigation of EEM model along with self-efficacy, particularly in Pakistan. To fulfil such a wide gap, the researchers planned to test the EEM model along with self-efficacy factor to examine the EI among business students of public sector universities of Pakistan.

Theoretical framework and hypotheses derivation

Presently, the entrepreneurship has a good reputation in overcoming the socio-economic problems. It generates the jobs, brings prosperity and economic development (Johansen *et al.*,

2012). In this way, to achieve further socio-economic challenges, to divert individuals' EI is necessary for every state. This is because EI is associated with individuals' readiness to accomplish targeted behaviour (Shapero, 1982). It shows the strong commitment of the individual to make their goal possible through positive behaviour (Krueger, 1993). The literature highlights the future unemployment, PD, opportunity evaluation, expected outcomes, SE, personal attitude, superordinate goal, triggering event, entrepreneurial goal, propensity to act, entrepreneurial experience, subjective norms, perceptions of opportunity and social support breadth as the best predictors of EI. Besides, the perceived behavioural control, subjective norms and attitudes towards behaviour are primary constructs for the establishment of EI. The factors of EEM such as PF and PD have a strong correlation with EI (Shapero, 1975; Shapero and Sokol, 1982; Rittippant et al., 2011; Ali et al., 2016; Taha et al., 2017; Mahmood et al., 2017). Likewise, self-efficacy has appeared as the best predictor of an individual's EI. In this way, by pursuing the Shapero and Sokol's (1982) EEM model, and self-efficacy predictor, the researchers have conceptualized the following figure (Figure 1) to investigate the EI among business students of public sector universities of Pakistan.

The EEM is regarded as an academic and comprehensive model. This model is related to the decisions which are taken for the accomplishment of the entrepreneurial activities and goals. This also gives an esteem action as desirable, feasible and the tendency to act upon an opportunity (Shapero and Sokol, 1982; Krueger, 1993).

The PF factor is described as a step for individuals' reflection as they are capable in the initiation of a firm or business effectively. It is also mainly related to the captivation of philosophies (ideas) in order to start a business (Shapero and Sokol, 1982). The scholars like Krueger (1993); Fitzsimmons and Douglas (2005) found the significant and positive correlation between PF and EI. Notably, among the business students, there is a strong impact of PF on EI (Segal et al., 2002). Consequently, the related literature emphasized a robust relationship between PF and EI in the different regions/contexts (Krueger, 1993; Fitzsimmons and Douglas, 2005; Ali et al., 2016). Based on such avoidance of the empirical evidences in Pakistan, the researchers projected the following hypothesis for investigation among the business students of Pakistan.

H1. PF has a positive and significant impact on EI.

The PD factor is about an attraction, through which an individual can divert towards a particular specific behaviour (extra-personal and intra-personal) (Shapero and Sokol, 1982; Krueger and Brazeal, 1994; Krueger et al., 2000). Prevailing literature confirms PD as the best predictor of EI (Krueger, 1993; Fitzsimmons and Douglas, 2005; Ali et al., 2016) rather than business students in Pakistan. Based on the gap from literature, the following hypothesis is developed.

H2. PD has a positive and significant impact on EI.

Self-efficacy factor is associated with belief and capabilities of individuals for completion of tasks in the problematic or ambiguous conditions (Bandura, 1995). Linan, Nabi and Krueger (2013) pointed out that the self-confidence is a protagonist factor which improves the knowledge and awareness regarding entrepreneurship. In a similar vein, Linan et al. (2013); Hallam et al. (2016) claimed that the entrepreneurial self-efficacy is a significant factor which develops EI in short term. On opposite to it, there is no definite and significant correlation between SE and EI was between SE and EI was detected by (Owoseni and Olakitan, 2014). The EI is predicted by social norms, self-efficacy and personal attraction. As a result, there is an inconsistency in the association between self-efficacy and EI. To confirm this relationship, we recommended the following hypothesis for the assessment among the business students.

H3. Self-efficacy has a positive and significant impact on EI.

Methods
This study proposed a quantitative method. The cross-sectional data were gathered from the different public sector universities of Pakistan. In this field, the numerous scholars have adopted the same techniques to investigate the EI among the students through EEM (Shapero, 1975; Shapero and Sokol, 1982; Krueger and Brazeal, 1994; Krueger *et al.*, 2000; Elfving *et al.*, 2009; Rittippant *et al.*, 2011; Ali *et al.*, 2016).

Practice of data collection and sample size
The required data were gathered from the different public sector universities of Pakistan by personal visits and postal services of Pakistan. The survey questionnaire was applied as a primary tool for the collection of data. At the initial stage, 500 questionnaires were distributed by using the random sampling technique of data collection. Initially, the 330 samples were returned. The response rate has remained at 66%. The data were cleaned and screened through different analytical tests such as missing values detection and univariate and multivariate outliers' detection. Due to such reasons, 20 invalid (missing/outliers) questionnaires were excluded, although 310 valid samples were applied for the final analysis.

Ethical considerations
Before handing over the questionnaires to participants, they were contacted for assuring the willingness to take part in the study. After gaining a positive response, the consent form was getting filled. The respondents were acknowledged about the aim and objectives of an investigation. They were assured about their privacy and confidentiality of the received response. Finally, they were also informed that any time they could be left out of the participation in a study without mentioning any reason.

Variables and measurement scales
The current study is based on one dependent variable (EI) and three independent variables (PF, PD and self-efficacy). For examining the EI, three items were adopted from the TPB of Ajzen (1991). PF and PD were measured on six items adopted from Krueger (1993). Moreover, we adopted ten items from Rosenberg (1965) to assess the self-efficacy factor. All items were evaluated by applying a five-point Likert scale where $1 =$ strongly agree; $2 =$ agree; $3 =$ neither agree nor disagree; $4 =$ disagree; and $5 =$ strongly disagree. Besides, the demographic factors such as age and gender were also observed to notice the demographic trend of the respondents.

Data analysis and findings
Demographic information of the respondents
The software such as Statistical Package for Social Sciences (SPSS) version 26.0 for windows and Analysis of Moment Structures (AMOS) were applied for data analysis. The demographic information shows that 69% ($n = 214$) were males and 31% ($n = 96$) were females. Similarly, 87% ($n = 271$) respondents were between 21 and 30 years of age, 10% (31) were less than 21 years of age and 2% ($n = 08$) respondents were between 31 and 40 years of age (Table 1).

The descriptive statistics were conducted to observe the fundamental distribution for data. The range of mean was noticed between 2.78 and 3.01. Likewise, the range of standard deviation was found between 0.99 and 1.33 (Table 2).

Moreover, Cronbach's alpha (α) was applied to ensure the internal consistency among the items of the survey questionnaire. As a result, overall reliability was observed to be 0.830,

which is considered to be excellent/outstanding (George and Mallery, 2003). Nonetheless, the reliability of every factor was noted as satisfactory (Table 2).

Structure equation modelling (SEM) technique was applied to confirm the relationships between dependent and independent variables through path analysis. Initially, the scores of model fit were noticed as CMIN = χ^2/Chi-square (3.393); goodness of fit index (0.940); adjusted goodness of fit index (0.950); normed fit index (0.943); comparative fit index (0.922) and root mean square error of approximation (0.041) (Table 3). These scores of the goodness of fit suggest the fitness of the model with available data (Marsh and Hancover, 1985; Hair *et al.*, 2006) (Figure 2 and Table 3). The hypotheses were confirmed by applying maximum likelihood estimates based on regression scores (weights) of critical ratio (CR) and standard error (ER) by highlighting significant path at the level of significance at 0.05 with the help of asterisks (***) pointing to the significance at smaller than 0.01.

For the first hypothesis (H1), the weights of regression show (SE = 0.026; CR = 8.261; p = < 0.01) (Table 4 and Figure 2) a positive and significant impact of PF on EI. Therefore, H1 was supported. In a similar manner, results (SE = 0.024; CR = 7.950; p = < 0.01) (Table 4 and Figure 2) show a positive and significant impact of PD on EI. Hence, H2 was supported. Finally, the results (SE = 0.022; CR = 5.723; p = < 0.01) (Table 4 and Figure 2) for the H3 revealed a significant and positive effect of self-efficacy on EI. Thus, the final hypothesis (H3) was also accepted.

Discussion and conclusion

The entrepreneurship is an essential appliance for prosperity, income generation and economic development. To attain the economic growth, deviation of individuals' intention towards entrepreneurship is a precondition of every state. Bearing in mind such a position, the purpose of the current study is to examine the EI of university business students through the EEM. To prove such critical phenomena, a theoretical framework was developed based on one dependent variable (EI) and three independent variables (PF, PD and self-efficacy). In addition to it, two demographic variables, i.e. age and gender, were examined without mentioning their paths with dependent and independent variables. A survey questionnaire was applied to get the responses from participants. We targeted the business students of

	Category	Frequency	Percent
Gender	Male	214	69.0
	Female	96	31.0
	Total	310	100.0
Age	Less than 21	31	10.0
	21–30	271	87.4
	31–40	8	2.6
	Total	310	100.0

Table 1.
Demography information of the respondents

S.No	Variables	Variable code	M	SD	Alpha (α)
1	Entrepreneurial intention	EI	2.99	1.22	0.80
2	Perceived feasibility	PF	2.87	1.29	0.87
3	Perceived desirability	PD	3.01	0.99	0.72
4	Self-efficacy	SE	2.78	1.33	0.89
Note(s): *M*, mean; SD, standard deviation; alpha, Cronbach's alpha reliability					

Table 2.
Descriptive statistics and reliability assessment

different public sector universities of Pakistan. The descriptive statistics, reliability calculation and demographic information were also assessed. We dropped or excluded some items while performing the EFA due to low factor loadings.

The findings supported the hypothesis (H1), by ensuring a significant and positive impact of PF on EI. Such positive associations were supported by researchers like Krueger (1993); Segal *et al.* (2002); Fitzsimmons and Douglas (2005) and Ali *et al.* (2016) who have been investigated the positive associations between PF and EI. Such evidence from the context of Pakistan (positive association between PF and EI) may provide possibilities of individuals' willingness to accomplish the entrepreneurial activities or goals. They want to look upon a suitable and feasible tendency to act upon an opportunity. In the same sense, the individuals have a positive reflection along with capability and ideas to start a firm or business successfully.

Likewise, results also confirmed the positive impact of PD on EI. These positive results are consistent with the numerous field scholars like Shapero and Sokol (1982); Krueger and Brazeal (1994); Krueger *et al.* (2000); Fitzsimmons and Douglas (2005) and Ali *et al.* (2016). These scholars confirmed the positive correlations in different contexts. These findings from the business students of Pakistan may highlight that they have been more attracted to and want to divert their attitudes towards a specific behaviour (business). Such a strong desire to perform the responsibilities to achieve success in business may further make them interested in involving in entrepreneurship activities.

Lastly, the results for H3 revealed a significant and positive impact of self-efficacy on EI. The findings are in line with Linan *et al.* (2013) and contradictory to Owoseni and Olakitan (2014) and Ali *et al.* (2016). However, these outcomes propose that students who exhibited higher entrepreneurial self-efficacy beliefs have higher attitudes toward entrepreneurial acts which ultimately may make higher intentions to new venture creation. Interestingly, students have also strong belief and capabilities to complete the tasks in problematic or ambiguous

Model fit indicators	CMIN/df	GFI	AGFI	NFI	CFI	RMSEA
Present values	3.393	0.940	0.950	0.943	0.922	0.041
Suggested values	<3	>0.90	>0.90	>0.90	>0.90	<0.05

Note(s): CMIN = χ^2/Chi-square/df; df = degree of freedom; GFI = Goodness of fit index; AGFI = Adjusted goodness of fit index; NFI = Normed fit index; CFI = Comparative fit index; RMSEA = Root mean square error of approximation

Table 3.
Overall fit indices from SEM analysis
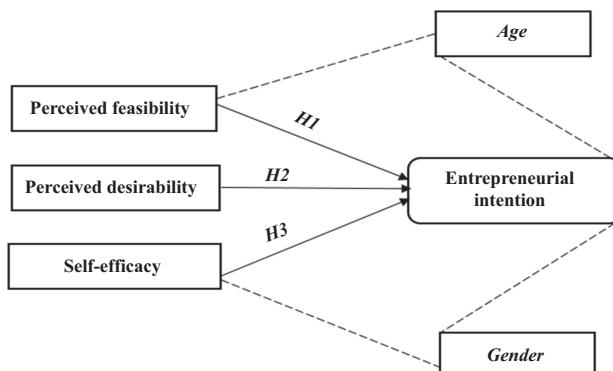
Figure 1.
Theoretical model
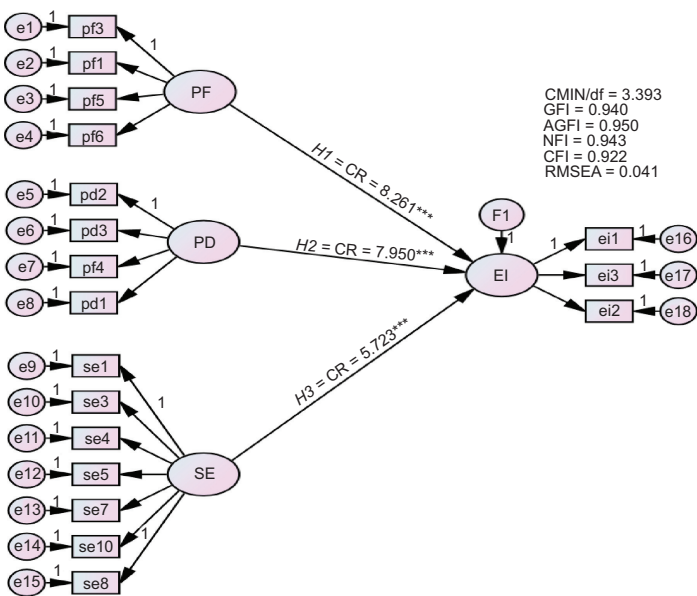
Figure 2.
Structure
equation model

	Dependent variable	Path	Independent variables	Estimate	SE	CR	P	Decision
H1	EI	<—	PF	0.215	0.026	8.261	***	Accepted
H2	EI	<—	PD	0.205	0.024	7.950	***	Accepted
H3	EI	<—	SE	0.128	0.022	5.723	***	Accepted

Note(s): EI, entrepreneurial intention; PF, perceived feasibility; PD, perceived desirability; SE, self-efficacy; SE, standard error; CR, critical ratio; p***, significance at < 0.01

Table 4.
SEM outcomes

conditions. This is because the self-confidence is a dominant factor which develops the knowledge and awareness regarding entrepreneurship (Linan *et al.*, 2013).

To sum up, the findings of SEM highlighted a positive and significant impact of PF, PD and self-efficacy on EI among business students of Pakistani universities. It may be possible that the public university business students have captivating notions, abilities and trustworthy that they can adjust and run the business positively. To some extent, they may observe the point of attraction or appeal through which they move towards the accomplishment of the specific behaviour. Apart from this, the business university students are more talented at performing entrepreneurial activities. This may have happened due to possession of enormous confidence, awareness or knowledge about entrepreneurship and its outcomes. This awareness and confidence may pull the university business students towards the expansion of EI in Pakistan.

The study has some limitations. The study employed only the quantitative approach to investigate EI. Such an approach does not overlook the phenomenon deeply but offers the snapshots of the situations (Rahman, 2017). Thus, it may fail to ascertain deeper underlying meanings and explanations of the actual phenomena. This approach also measures variables at a specific moment in time and disregards whether the picture happened to catch one looking one's best or looking disarranged (Schofield, 2007). The present study, which engaged a more significant number of participants, showed statistical testing significance.

Henceforth, it has not been probable to take information deeply; rather, it has given the overall picture of the variables (Fidalgo *et al.*, 2014).

Further, the study applied a single source of data collection (survey questionnaire) on a cross-sectional basis. It may create some attitudinal and behavioural issues due to its every time change. The study is restricted only to the business students of the different public sector universities of Pakistan. Finally, only EEM was applied to investigate the EI of the students.

In future, in the same perspective, more qualitative studies may be applied to an in-depth overlook of the EI phenomena. In future, also more longitudinal studies are needed to examine the attitudes and behaviours of the students. Further, the mixed method approaches (quantitative followed by qualitative) are required to observe the actual picture of the EEM approach. Finally, the students of other disciplines such as commerce, economics or management of the private and public universities may be targeted to validate the EEM model in the context of Pakistan further.

References

Ajzen, I. (1991), "The theory of planned behavior", *Organizational Behavior and Human Decision Processes*, Vol. 50 No. 2, pp. 179-211.

Alam, M., Kousar, S. and Rehman, C.A. (2019), "Role of entrepreneurial motivation on entrepreneurial intentions and behaviour: theory of planned behaviour extension on engineering students in Pakistan", *Journal of Global Entrepreneurship Research*, Vol. 9 No. 50, pp. 1-20.

Ali, B., Shah, N. and Anwar, S. (2016), "Investigating entrepreneurial intention through entrepreneurial event model (EEM) among graduate and master students in public sector universities of Thailand", *Asia Pacific, Research Journal of Far East and South East Asia*, Vol. 34 No. 1, pp. 36-53.

Autio, E., Keeley, R.H., Klofsten, M., Parker, G.G.C. and Hay, M. (2001), "Entrepreneurial intent among students in Scandinavia and in the USA", *Enterprise and Innovation Management Studies*, Vol. 2 No. 2, pp. 145-160.

Bandura, A. (1995), *Self-efficacy in Changing Societies*, Cambridge University Press, Cambridge.

Baskaran, S., Mutalib, S., Safri, S.N.N. and Mahadi, N. (2019), "Entrepreneurial intention among community college students: a conceptual attempt to understand early adoption of entrepreneurial career", *International Journal of Academic Research in Business and Social Sciences*, Vol. 9 No. 6, pp. 744-758.

Bell, R. (2019), "Predicting entrepreneurial intention across the university", *Education + Training*, Vol. 61 Nos 7/8, pp. 815-831.

Dabic, M., Daim, T., Bayraktaroglu, E., Novak, I. and Basic, M. (2012), "Exploring gender differences in attitudes of university students towards entrepreneurship: an international survey", *International Journal of Gender and Entrepreneurship*, Vol. 4 No. 3, pp. 316-336.

Elfving, J., Brannback, M. and Carsrud, A. (2009), "Toward a contextual model of entrepreneurial intentions in Understanding the entrepreneurial mind", in Carsrud, A. and Brannback, M. (Eds), *Opening the Black Box*, Springer, Heidelberg, pp. 23-34.

Farooq, M. (2018), "Modelling the significance of social support and entrepreneurial skills for determining entrepreneurial behaviour of individuals: a structural equation modelling approach", *World Journal of Entrepreneurship, Management and Sustainable Development*, Vol. 14 No. 3, pp. 242-266.

Farrukh, M., Khan, A., Shahid Khan, M., Ravan Ramzani, S. and Soladoye, B. (2017), "Entrepreneurial intentions: the role of family factors, personality traits and self-efficacy", *World Journal of Entrepreneurship, Management and Sustainable Development*, Vol. 13 No. 4, pp. 303-317.

Fidalgo, A.M., Alavi, S.M. and Amirian, S.M.R. (2014), "Strategies for testing statistical and practical significance in detecting DIF with logistic regression models", *Language Testing*, Vol. 31 No. 4, pp. 433-451.

Filho, L.S., Silva, V.M.S., Moraes, C.B., Fernandes, F.K. and Morales, J.L.C. (2015), "The influence of teachers with non-academic experience on entrepreneurial intent student administration", *Business and Management Review*, Vol. 4 No. 5, pp. 751-760.

Fitzsimmons, J.R. and Douglas, E.J. (2005), "Entrepreneurial attitudes and entrepreneurial intentions', A cross-cultural study of potential entrepreneurs in India, China, Thailand and Australia", *Babson-Kauffman Entrepreneurial Research Conference*, Wellesley, MA, June, 2005.

Francis, J.J., Eccles, M.P., Johnston, M., Walker, A., Grimshaw, J., Foy, R., Kaner, E.F.S., Smith, L. and Bonetti, D. (2004), *Quality of Life and Management of Living Resources*, ISBN: 0-9540161-5-7, published by Centre for Health Services Research, University of Newcastle, available at: www. rebeqi.org/ViewFile.aspx?itemID¼212 (accessed 20 September 2019).

Galloway, L. and Brown, W. (2002), "Entrepreneurship education at university: a driver in the creation of high growth firms?", *Education + Training*, Vol. 44 Nos 8/9, pp. 398-405.

George, D. and Mallery, P. (2003), *SPSS for Windows Step by Step: A Sample Guide and Reference*, Allyn & Bacon, Boston.

Gibb, A.A. and Hannon, P.D. (2006), "Towards the entrepreneurial university?", *International Journal of Entrepreneurship Education*, Vol. 1 No. 4, pp. 73-110.

Hair, J., Black, W., Babin, B., Anderson, R. and Tatham, R. (2006), *Multivariate Data Analysis*, 6th ed., Pearson Prentice Hall, Pearson Education, Upper Saddle River, New Jersey, 07458.

Hallam, C., Zanella, G., Dosamantes, C.A.D. and Cardenas, C. (2016), "Measuring entrepreneurial intent? Temporal construal theory shows it depends on your timing", *International Journal of Entrepreneurial Behavior and Research*, Vol. 22 No. 5, pp. 671-697.

Jang, Y., Hadley, B., Son, J. and Song, C. (2019), "Determinants of students' entrepreneurial intention to compete in a fast-pitch competition", *The Journal of Education for Business*, Vol. 94 No. 6, pp. 359-368.

Johansen, V., Schanke, T. and Clausen, T.H. (2012), "Entrepreneurship education and pupils' attitudes towards entrepreneurs", in Burger- Helmchen, T. (Ed.), *Entrepreneurship-Born, Made and Educated*, In Tech, ISBN: 978-953-51-0210-6, available at: www.intechopen.com (accessed 11 September 2019).

Kaijun, Y. and Sholihah, P.I. (2015), "A comparative study of the Indonesia and Chinese educative systems concerning the dominant incentives to entrepreneurial spirit (desire for a new venturing) of business school students", *Journal of Innovation and Entrepreneurship*, Vol. 4 No. 1, pp. 2-16.

Krueger, N.F. and Brazeal, D. (1994), "Entrepreneurial potential and potential entrepreneurs", *Entrepreneurship: Theory and Practice*, Vol. 18 No. 3, pp. 91-104.

Krueger, N.F. Jr, Reilly, M.D. and Carsrud, A.L. (2000), "Competing models of entrepreneurial intentions", *Journal of Business Venturing*, Vol. 15 Nos 5-6, pp. 411-432.

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. 5-21.

Linan, F. and Chen, Y.W. (2006), *Testing the entrepreneurial intention model on a two-country sample', European (Spain) and the other South Asian (Taiwan), Document de Treball Num. 06/7*, Departament d' Economia de l'Empresa, available at: http://selene.uab.es/dep-economia-empresa/UniversitatAutònomadeBarcelona, (accessed 11 September 2019).

Linan, F., Nabi, G. and Krueger, N.F. Jr (2013), "British and Spanish entrepreneurial intentions: a comparative study", *Revista de Economia Mundial*, Vol. 33 No. 1, pp. 73-103.

Mahmood, H., Aliyu, G. and Abdullateef, O. (2017), "Entrepreneurial intentions of business students in Malaysia: the role of self-confidence, educational and relation support", *Journal of Small Business and Enterprise Development*, Vol. 24 No. 1, pp. 54-67.

Mahmood, T.M.A.T., Al-Mamun, A., Ahmad, G.B. and Ibrahim, M.D. (2019), "Predicting entrepreneurial intentions and pre-start-up behaviour among Asnaf millennials", *Sustainability*, Vol. 11 No. 18, pp. 1-26.

Mamun, A., Saufi, R., Mohiuddin, M. and Fazal, S. (2019), "Recycling intentions and behaviors among informal micro-entrepreneurs in Kelantan, Malaysia", *World Journal of Entrepreneurship, Management and Sustainable Development*, Vol. 15 No. 2, pp. 123-138.

Marsh, H.W. and Hocevar, D. (1985), "Application of confirmatory factor analysis to the study of self-concept: first-and higher order factor models and their invariance across groups", *Psychological Bulletin*, Vol. 97 No. 3, pp. 562-582.

Moghavvemi, S. and Salleh, N.A.M. (2014), "Malaysian entrepreneurs propensity to use IT innovation", *Journal of Enterprise Information Management*, Vol. 27 No. 2, pp. 139-157.

Owoseni and Olakitan, O. (2014), "The influence of some personality factors on entrepreneurial intentions", *International Journal of Business and Social Science*, Vol. 5 No. 1, pp. 278-284.

Rahman, R.S.A.R.A., Ismail, M.F. and Sahid, S. (2019), "Strategic domains of social entrepreneurship among students in Malaysian higher education institutions", *Academy of Strategic Management Journal*, Vol. 18 No. 1, pp. 1-7.

Rahman, M.S. (2017), "The advantages and disadvantages of using qualitative and quantitative approaches and methods in language 'Testing and assessment' research: a literature review", *Journal of Education and Learning*, Vol. 6 No. 1, pp. 102-122.

Ramoni, S.A. (2016), "Determinants of entrepreneurial intention among Nigerian university graduates", *World Journal of Social Sciences*, Vol. 6 No. 1, pp. 45-59.

Rittippant, N., Kokchang, W., PanisaraVanichkitpisan, P. and Chompoodang, S. (2011), *Measure of Entrepreneurial Intention of Young Adults in Thailand*, EPPM, Singapore, pp. 20-21.

Rosenberg, M. (1965), *Society and the Adolescent Self-Image*, Princeton University Press, Princeton, NJ.

Schofield, J.W. (2007), "Increasing the generalizability of qualitative research", in Hammersley, M. (Ed.), *Educational Research and Evidence-Based Practice*, SAGE Publications, London, pp. 181-203.

Segal, Z.V., Williams, J.M.G. and Teasdale, J.D. (2002), *Mindfulness Based Cognitive Therapy for Depression: A New Approach to Preventing Relapse*, Guildford Press, New York.

Shah, N. and Soomro, B.A. (2017), "Investigating entrepreneurial intention among public sector university students of Pakistan", *Education + Training*, Vol. 59 Nos 7/8, pp. 841-855.

Shane, S. and Venkataraman, S. (2000), "The promise of entrepreneurship as a field of research", *Academy of Management Review*, Vol. 25 No. 1, pp. 217-226.

Shapero, A. (1975), "The displaced, uncomfortable entrepreneur", *Psychology Today*, Vol. 9 No. 6, pp. 83-88.

Shapero, A. (1982), "Social dimensions of entrepreneurship", in Kent, C., Sexton, D. and Vesper, K. (Eds), *The Encyclopedia of Entrepreneurship*, Prentice-Hall, Englewood Cliffs, pp. 72-90.

Shapero, A. and Sokol, L. (1982), "The social dimensions of entrepreneurship", in Kent, C., Sexton, D. and Vesper, K.H. (Eds), *The Encyclopedia of Entrepreneurship*, Prentice-Hall, Englewood Cliffs, NJ, pp. 72-90.

Solesvik, M.Z., Westhead, P., Kolvereid, L. and Matlay, H. (2012), "Student intentions to become self-employed: the Ukrainian context", *Journal of Small Business and Enterprise Development*, Vol. 19 No. 3, pp. 441-446.

Soomro, B.A. and Shah, N. (2015), "Developing attitudes and intentions among potential entrepreneurs", *Journal of Enterprise Information Management*, Vol. 28 No. 2, pp. 304-322.

Soomro, B.A., Shah, N. and Memon, M. (2018), "Robustness of the theory of planned behaviour (TPB): a comparative study between Pakistan and Thailand", *Academy of Entrepreneurship Journal*, Vol. 26 No. 3, pp. 1-18.

Soomro, B.A., Shah, N. and Memon, M. (2019), "Investigation the intention to adopt smartphone apps among the entrepreneurs of a developing country", *World Journal of Entrepreneurship, Management and Sustainable Development*, Vol. 15 No. 4, pp. 341-353.

Taha, K.A.S., Ramlan, S.N. and Noor, I.M. (2017), "The factors affecting entrepreneurial intentions of university students in Malaysia", *International Journal of Business and Technopreneurship*, Vol. 7 No. 2, pp. 189-202.

Tateh, O., Latip, H.A. and Awang Marikan, D.A. (2014), "Entrepreneurial intentions among indigenous dayak in Sarawak, Malaysia: an assessment of personality traits and social learning", *The Macrotheme Review*, Vol. 3 No. 2, pp. 110-119.

Vajihe, B. and Mehdi, G. (2014), "The effect of entrepreneurial education on university of Tehran students' entrepreneurial intention", *Asian Journal of Research in Business Economics and Management*, Vol. 4 No. 4, pp. 202-207.

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