

# Specialized entrepreneurship education: does it really matter? Fresh evidence from Pakistan

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## Abstract

**Purpose** – There is a long-standing debate on whether the entrepreneurship education program (EEP) of university graduates can promote entrepreneurship intention and behaviour. The purpose of this paper is to use the theory of planned behaviour as a conceptual framework and compare the differences in entrepreneurial attitude, subjective norms, perceived behavioural control and intentions among students who participated in entrepreneurship education with a control group of Master of Business Administration (MBA) students in Pakistan. The study further examines what drives intentions between the two groups.

**Design/methodology/approach** – Data were collected using a questionnaire survey from 348 entrepreneurship students and 329 MBAs in their final year (both groups did a total of four years' tertiary study). One-way analysis of variance test and regression analysis were used to examine the differences and the antecedents of entrepreneurship intention between the two groups.

**Findings** – MBAs have higher entrepreneurial intentions (EIs) than EEP students and the EIs are statistically significant. Nevertheless, the authors did not find any differences in attitude, perceived control behaviour and subjective norms towards entrepreneurship in both the groups. The entrepreneurship intentions of the MBA students are more influenced by social pressure as opposed to EEP students who are influenced by perceived control behaviours.

**Research limitations/implications** – First, although the study introduced a control group, comparisons were based only on EIs and their antecedents in participants' final year of study. This cross-sectional design provides no information about how much intentions and antecedents changed over time. A longitudinal study would provide information about such changes. Second, the groups in the study were matched in terms of gender, age distribution, family background, years of study and presumed disposition towards running their business. It would be useful if future comparative and longitudinal research measured these individual factors and their effects.

**Practical implications** – Educational activities render the starting of a business desirable and feasible by changing the attitudes and intentions. Nevertheless, various exposures to the challenges of being an entrepreneur via the education programmes may lower their intention to be entrepreneurs. As such, entrepreneurial programmes should be designed with care.

**Social implications** – The study provides some insights on improving EIs especially in understanding the antecedents that are important for nations, such as Pakistan which has high unemployment and widespread poverty.

**Originality/value** – This study provides fresh evidence on the role of entrepreneurship education by comparing EIs and the cognitive antecedents of intentions of the two groups – entrepreneurship as well as MBA students.

**Keywords** Entrepreneurship education, Theory of planned behaviour, Entrepreneurial intentions

**Paper type** Research paper



## Introduction

Scholars as well as policy makers, including university administrators, have long debated over the effectiveness of entrepreneurship education in promoting entrepreneurship among university graduates. In developing countries, influenced by ideas of the West, specialized entrepreneurship education programs (EEPs), as distinct from the inclusion of entrepreneurship classes in business or engineering degree programmes are offered in the belief that such programmes will assist the nations in promoting entrepreneurship. Nonetheless, uncertainty remains on the link between specialized entrepreneurship education and promoting entrepreneurship. Several empirical studies suggest that entrepreneurship education (Dainow, 1986; Gorman *et al.*, 1997) and particularly specialized entrepreneurship programmes (McMullan *et al.*, 2002) encourage individuals to start a business. In particular, entrepreneurship education appears to have a positive impact on the perceived attractiveness and feasibility of new venture initiations (Fayolle *et al.*, 2006; Tkachev and Kolvereid, 1999). These findings are however tempered by the methodological shortcomings that conclusions have been drawn from cross-sectional studies without basic controls such as comparison with control groups who do not study entrepreneurial programmes or pre- and post-programme testing. In addition, there is a potential bias in favour of educational interventions because students who enrolled in entrepreneurship programmes were likely to have an existing predisposition towards entrepreneurship (Gorman *et al.*, 1997). For two decades, calls have been made to remedy these shortcomings through quasi-experimental studies that compared participants in entrepreneurial education (treatment group) and control groups in order to improve scholarly knowledge and to add new value in assessing the effectiveness of the entrepreneurship education especially for practitioners[1] (Block and Stumpf, 1992; Oosterbeek *et al.*, 2010).

In this study, the likely positive impact of entrepreneurship education on entrepreneurial outcomes is acknowledged. However, we pose the question of whether participation in specialized entrepreneurship education is likely to produce better entrepreneurship outcomes than other types of university education, for example, the Master of Business Administration (MBA) programmes. The comparison is particularly pertinent for business and management education, whereby students, some of whom are likely to have a predisposition towards self-employment, are exposed to some concepts similar to those in entrepreneurship programmes. The study has important policy implications, especially for university administration, in deciding on the value of designing and running a specialized entrepreneurship educational programme for creating entrepreneurs. It also has cost implications for universities which have limited resources. In practical terms then, the question that we aim to answer here is whether universities need to design and offer specialized entrepreneurship programmes to improve entrepreneurship among university graduates, or if existing business and management programmes are sufficient. By comparing graduating students who have participated in an EEP with a control group of MBA students, this study provides fresh evidence, in the case of Pakistan, on the value of entrepreneurship education in promoting entrepreneurship intentions.

## Entrepreneurial intention (EI) and entrepreneurship education

This section begins by drawing some insights into the formation of entrepreneurs from the literature of EI and the theory of planned behaviour (TPB), which is adopted as the conceptual framework of the study. The role of entrepreneurship education is further discussed here. Hypotheses are proposed at the end of the section after discussing the link between entrepreneurship education and EIs.

### *EIs model*

EIs have been identified as good predictors of entrepreneurial activities (Kautonen *et al.*, 2013; Krueger and Carsrud, 1993), even though lack of self-confidence and self-management

can reduce the likelihood of conversion of intentions into behaviours (van Gelderen *et al.*, 2015). Understanding the formation of EIs is therefore critical in the development of individuals who are prepared to take entrepreneurial actions.

EI is said to be the state of mind which directs individuals towards the formulation of new business concepts (Bird, 1988). In more general terms, an intention represents an individual's readiness to take action, once external conditions permit and in the case of voluntary behaviours, such as new venture development, the individual perceives that s/he can overcome barriers and constraints (Fishbein and Ajzen, 2010). A variety of determinants of EI, including demographics, personality traits (Gartner, 1988; Shaver and Scott, 1991; Yusof *et al.*, 2007), gender (Boden and Nucci, 2000; Brush, 1992; Brush *et al.*, 2006; Fay and Williams, 1993; Gupta *et al.*, 2008; Marlow and Patton, 2005; Welter *et al.*, 2006), family background (Aldrich and Cliff, 2003; Carr and Sequeira, 2007) and personal and family experience (Krueger, 1993; Raijman, 2001; Shapero, 1982) have been investigated.

Much current research on entrepreneurship is directed at the prediction of EIs. Two models, the entrepreneurial event model proposed by Shapero (1982) and a generic model of human behaviour proposed by Ajzen (1988, 1991) known as the TPB are at the core for predicting EIs. The TPB has significant empirical support and is one of the most widely adopted theories used to explain intentions and predicting human behaviour (Kautonen *et al.*, 2013; Kolvereid, 1996b). TPB framework is adopted in this study due to two reasons. First, there is considerable evidence that intentions predicted using the TPB are good predictors of entrepreneurial behaviour (Kautonen *et al.*, 2013; van Gelderen *et al.*, 2015) and second, the framework specifically incorporates a social antecedent of intention and subjective norm, which are missing from the entrepreneurial event model. The three components which explain intentions (the antecedents of intentions) in the TPB are attitudes, subjective norms and perceived behavioural control (PBC). These components are further explained.

*Attitude towards entrepreneurship.* Attitude towards entrepreneurship refers to the degree to which an individual is positive or negative about being an entrepreneur (Ajzen, 1991, 2002; Kolvereid, 1996b). Thus, attitude towards being an entrepreneur encompasses the perceived desirability of entrepreneurship that has been found to be an important predictor of EI. A positive attitude towards entrepreneurship can be expected to lead to a positive EI. More precisely, a "high" or strongly positive attitude towards becoming an entrepreneur is believed to predict that an individual is more inclined to start his/her own business rather than becoming an organizational employee (Kolvereid, 1996a).

*Subjective norm for entrepreneurship.* Subjective norm for entrepreneurship refers to the influence that important reference groups exert on an individual to become an entrepreneur. In general, perceived social pressure from supervisors, colleagues, relatives and friends can influence behavioural intentions (Ajzen, 1991). Social pressure to become an entrepreneur might come not only from these groups but also from instructors and administrators at the future entrepreneur's university and the officials of government agencies who offer incentives for new venture start-ups.

*PBC for entrepreneurship.* PBC refers to an individual's perception (how easy or difficult) that s/he is able to perform a particular behaviour (Ajzen, 1991), such as starting a business (Kolvereid, 1996a). It is therefore similar to the notion of perceived feasibility in the entrepreneurial event model and the self-efficacy concept of Bandura (1977, 1982). Among the three antecedents of intention, PBC is particularly important because it taps an individual's capacity for self-regulation or self-management when they have the choice of engaging in a behaviour or not (Ajzen, 2002). In relation to the process of new venture creation, PBC indicates how positive an individual's evaluation of his/her capabilities and abilities to take control of new venture creation activities is and to utilize incentives and overcome barriers encountered along the way.

*Entrepreneurship education*

Entrepreneurship education has a relatively long history and is widely adopted around the world (Katz, 2003; Kuratko, 2005). The constructive role of EEPs is acknowledged in the policies of the government. Several types of entrepreneurship education have been identified based on target audience, course content and desired outcomes (Bridge *et al.*, 1998; Gorman *et al.*, 1997). Liñán (2004) identified four types:

- (1) Entrepreneurship education for awareness, which is not specifically devoted to creation of new entrepreneurs but allows students to develop entrepreneurial skills that will assist them as they choose a career. This type of initiative includes optional modules within business and engineering programmes, where the instructors are not trying to transform students into entrepreneurs but rather to broaden their perspectives and improve their career prospects.
- (2) Entrepreneurship education for start-up. This type of entrepreneurship education is offered to prepare individuals who expect to start their own businesses during or after completion of the course. The content of these programmes is typically centred on practical aspects of business start-up (Curran and Stanworth, 1989) and is directed more towards development of entrepreneurship capabilities and development or reinforcement of the EIs of the participants than to raising awareness of the nature of entrepreneurship and employment possibilities.
- (3) Entrepreneurial dynamism. This type of course is concerned with promoting dynamic entrepreneurial behaviour after the start-up phase. Thus, an important objective is to stimulate entrepreneurial behaviours to strengthen and grow an existing enterprise.
- (4) Continuing education for practicing entrepreneurs. Short courses designed to improve specific entrepreneurial skills and abilities (Weinrauch, 1984).

Most entrepreneurial courses at university level are of the first two types. Thus, they are primarily designed to increase entrepreneurial awareness or EIs of the graduates. Specialized EEPs of the second type often combine elements of awareness and development of a positive attitude towards entrepreneurship as well as EIs and start-up skills (Garavan and O'Connell, 1994). Complete EEP programmes are much more extensive than entrepreneurial courses and modules. They typically have four major components (Souitaris *et al.*, 2007):

- (1) taught component: students are expected to gain specific knowledge of entrepreneurship;
- (2) business planning component: aims to motivate and inspire students to come up with business ideas that can be implemented after graduation (if not before);
- (3) interaction with practice component: conducting of seminars, workshops and training that facilitate the building of networks with practitioners; and
- (4) university support component: resources provided by universities to help students experiment with their business ideas with the aim of eventually converting the ideas into a successful venture.

This study is concerned with the relative ability of EEPs as compared to other education programme in influencing attitude, perceived behaviour control, subjective norms and intention towards entrepreneurship among university graduates.

*Entrepreneurship education and EIs*

Entrepreneurship education is found to impact both the entrepreneurship antecedents (attitude, subjective norms and PBC of entrepreneurship) and the entrepreneurship intentions. A number

of studies have found links between entrepreneurship education and entrepreneurial activities (Dainow, 1986; Franke and Lüthje, 2004; Galloway and Brown, 2002; Gorman *et al.*, 1997; Henderson and Robertson, 2000; McMullan *et al.*, 2002; Shepherd and DeTienne, 2005; Souitaris *et al.*, 2007). Entrepreneurial education has a positive impact on the EIs of graduates (Donckels, 1991; Engle *et al.*, 2010; Jones and Iredale, 2010; Jones *et al.*, 2006, 2007a, b, 2008; Kantor, 1988; Pruett *et al.*, 2009). Indeed, participation in entrepreneurship education has been associated with the emergence of new organizations (Dainow, 1986; Gorman *et al.*, 1997; McMullan *et al.*, 2002). Likewise, differences in the entrepreneurial cognitions and intentions of participants in entrepreneurial education, compared to non-participants, have been noted in several studies (Fayolle and Liñán, 2014), although the differences do not always favour entrepreneurship students who have stronger perceptions of the feasibility of becoming entrepreneurs or intentions to become entrepreneurs (Oosterbeek *et al.*, 2010).

In contrast, a few earlier studies also reported a weak relationship between entrepreneurship education and the antecedents of EI and entrepreneurial behaviour (Dyer and Handler, 1994; Krueger and Brazeal, 1994). The results of these studies contradict and provide mixed results despite the well-reasoned argument that participation in EEP impacts individuals' intentions to start their own businesses (Krueger and Carsrud, 1993). Nonetheless, recent published literature supports the claim that entrepreneurship education enhances EIs (Matlay *et al.*, 2010; Packham *et al.*, 2010) as well as the perceived attractiveness and feasibility of venture creation (Fayolle *et al.*, 2006; Peterman and Kennedy, 2003; Souitaris *et al.*, 2007; Tkachev and Kolvereid, 1999). Indeed, EEP can be seen as impacting the antecedents of entrepreneurship intentions (attitude, subjective norms and perceived behaviour control for entrepreneurship as well as EIs themselves). In other words, students participating in the EEP should show a higher entrepreneurship spirit in terms of attitude, subjective norms and PBC and intentions. This system of relationships (since it affects both the antecedents of intentions and the intentions) is congruent with the assumptions that if entrepreneurial education can improve the antecedents of EI, it has achieved its aims (Oosterbeek *et al.*, 2010; Peterman and Kennedy, 2003; Souitaris *et al.*, 2007; Tkachev and Kolvereid, 1999). Drawing on the arguments above, using the TPB as the framework, we hypothesize that:

- H1. Students who participate in EEPs have more positive attitudes towards entrepreneurship than students who do not participate in such programmes.
- H2. The subjective norm of students who participate in EEPs is more favourable to entrepreneurship than that of students who do not participate in such programmes.
- H3. Students who participate in EEPs have greater perceived behaviour control than students who do not participate in such programmes.
- H4. Students who participate in EEPs have stronger intentions to become entrepreneurs than students who do not participate in such programmes.

## Methods

A quasi-experimental field study was used to compare the outcomes of entrepreneurship education for students who had participated in an EEP (the treatment group) with those of students who had completed a comparable number of years of MBA studies and had undertaken entrepreneurship as one of the courses in their final year study (the control group). Our study aims to assess the differences in the attitude, subjective norms, PBC and intentions between the treatment and control groups. We further assess the impact of attitude, subjective norms and PBC on intentions for both the groups' controlling demographical characteristics. The study design follows the quasi experiment design (meaning non-random assignment) which is the non-equivalent control group design with

post-test only. Since the students are already in their final year, we were unable to do the pre and post-test and thus some limitations exist in this study. Indeed, we control the demographical differences in the analysis so that we can at least control the external validity. We used analysis of covariance (ANCOVA) and regression analysis to test the differences and the influence, respectively.

### *Measurement*

Items used to measure the antecedents of EI were all based on scales developed by Kolvereid (1996a) and items to measure EI were adopted from Liñán and Chen (2009). Items and scale development are described in this section and the full set of items is listed in Table AI. Responses to all items were recorded on a five-point scale ranging from 5 (to a great extent) to 1 (not at all). Attitude towards entrepreneurship is measured using a set of items that assesses the respondents' beliefs on being an entrepreneur that gives them greater autonomy, self-realization, economic opportunity, challenge, authority and control. A typical item posed to respondents is this: "To what extent will starting a business provide you with independence?" Subjective norm was measured using the items developed by Kolvereid (1996a). We further added two relevant self-constructed items based on the suggestions by participants in our pilot study. In the questionnaire, the full set of items required the respondents to respond to what extent the respondent believes that his/her closest friends, family, colleagues and business associates, fellow students and the local business community, would like them to start their own business. PBC was measured by five items which were adopted from Kolvereid's (1996a). These items measure the extent to which the respondent is confident in performing tasks associated with entrepreneurship, as in: "To what extent are you confident that you have the ability to become an entrepreneur?" EIs were measured using six items following Liñán and Chen (2009). All items referred to the respondents' determination to establish their own ventures instead of serving others as an employee.

### *Test for common method variance and composite construct scores*

Since the data were obtained by self-reports, we tested for the possibility of a common method variance using a Harman one-factor test (Podsakoff and Organ, 1986). Unrotated principle components analysis extracted 30.0 per cent variance in the first factor, with subsequent factors accounting for 16.5, 10.6 and 5.7 per cent in a four-factor solution respectively. We were able to conclude that common method variance was possible and found no serious problems.

Although the measures used for this study are based on existing scales, two contextual differences indicated a need to test the items and scales before hypothesis testing. First, the study is located in a new national context, Pakistan, and second, participants in the study included MBA students (the control group) as well as entrepreneurship students. We conducted separate principle factor analyses (varimax rotation) for each group to test the items loaded with the expected construct. For comparability purposes, a threshold factor loading of 0.5 was established and items with loadings below this value were eliminated in successive analyses. The final factor structure, as exhibited in Table I, shows that items measuring attitude, subjective norm, PBC and EI, could all be clearly identified, and were distinguished from one another, for both entrepreneurship students and MBAs in Pakistan. Cronbach's  $\alpha$  was above 0.7 for all constructs in both groups, indicating satisfactory internal consistency reliability. A composite score was created for each construct as the mean of the items which was loaded on the construct in the factor analysis.

### *Participants and procedure*

The data were collected in the classroom from students in their final year of study at eight well-known universities in Pakistan by the lead researcher. The participating universities included Institute of Business Administration Karachi, Karachi Institute of Economics and



**Table I.**  
Factor structure,  
measurement of  
entrepreneurial  
intention and its  
antecedents

Item	EEP students (treatment group)				MBA students (control group)			
	ATE	SN	PBC	EI	ATE	SN	PBC	EI
ATT1	0.68				0.58			
ATT2	0.93				0.74			
ATT3	0.89				0.80			
ATT4	0.54				0.69			
SN1		0.65				0.57		
SN2		0.76				0.69		
SN3		0.84				0.69		
SN4		0.75				0.73		
PBC1			0.78				0.72	
PBC2			0.82				0.78	
PBC3			0.65				0.52	
PBC4			0.75				0.75	
PBC5			0.83				0.72	
EI1				0.72				0.77
EI2				0.84				0.86
EI3				0.83				0.80
EI4				0.55				0.81
EI5				0.87				0.77
Cronbach's $\alpha$	0.87	0.84	0.76	0.88	0.75	0.81	0.78	0.87

**Notes:** ATT, attitude towards entrepreneurship; SN, subjective norm; PBC, perceived behavioural control; EI, entrepreneurial intention. Full-item content and details of deleted items are provided in Table A1

Technology, Government College Lahore, Ghulam Ishaq Khan Institute of Engineering Sciences and Technology, Comsat Institute of Information Technology Islamabad and Institute of Southern Punjab. The universities are located in three metropolitan cities in different provinces. At each university, data were collected from a treatment group of entrepreneurship (EEP) students and a control group of MBA students.

The entrepreneurship students were all final year students enrolled in four-year bachelor degree programmes in entrepreneurship. All of the programmes have the objective of offering entrepreneurship education to foster start-ups and offer an integrated curriculum focussing on developing key competencies of opportunity recognition, risk-taking, self-confidence, communication skills, decision making, networking and critical thinking (European Commission., 2012). The MBA students were also in their final year of study. Take note that the universities participating in the study all offer the MBA as a four-year degree in which a two-year undergraduate business administration programme is followed by two years of MBA study completion[2]. Thus, they had completed the same number of consecutive years of study as the entrepreneurship students. These students, who opted for MBA, were taking a single entrepreneurship course designed primarily to raise their awareness of entrepreneurship as a subject of study and a potential source of employment or self-employment. They acted as a control group by virtue of the number of years of university study and the fact that there was some common ground with entrepreneurship students in the courses that they studied for their degree and the disposition towards a career in business that they shared with entrepreneurship students. However, they did not particularly specialize in entrepreneurship majoring. The purpose of the study and the voluntary and confidential nature of responses were explained to the students before handing out the questionnaires. Thus, students were assured that they could return an empty or incomplete questionnaire without their teacher knowing who had and who had not participated.

A total of 480 and 400 questionnaires were distributed to the EEP and MBA students respectively. Of the 480 handed out, 421 questionnaires were returned, equivalent to an 87.7 per cent response rate. The high response rate reflected the fact that the questionnaires

were distributed and collected in class. Among the received questionnaires, 59 respondents failed to respond to at least 75 per cent of the items and were excluded from analysis. A further 14 questionnaires were excluded for response bias; in these cases, the respondents had provided the same response (5) to all items in the questionnaire. The remaining 348 useable survey questionnaires, equal to 72.5 per cent, were found to be satisfactory. We employed the same procedure to obtain data from the MBA students. Of 400 distributed questionnaires, 357 were retrieved, equivalent to an 89.0 per cent response rate. In total, 21 respondents failed to respond to at least 75 per cent of items and a further eight respondents were excluded because of response bias (score of 5 to all items). In total, 329 completed questionnaires (72.7 per cent) were suitable for analysis.

Table II summarises the characteristics of the respondents. Both groups were similar in terms of gender, age and family background. There were more male than female participants and most were aged below 27. Most of the participants came from families where one or both parents had completed post-secondary education and one-third of the families were classified as entrepreneurial (i.e. the father was self-employed or the family owned its own business). More entrepreneurship students than MBA students had work experience (more than 50 per cent compared to fewer than 40 per cent, respectively) and the entrepreneurship students reported a higher involvement in business activities (55 per cent compared to 28 per cent), reflecting the emphasis on participation in business activities in their courses.

## Results

Table III shows the correlation metrics of the variables under study. The mean values of intentions, PCB, attitude and subjective norms, for the whole sample, are 3.21, 3.61, 4.24 and 3.25, respectively. We used ANCOVA to test the differences in mean scores using the treatment and control group (Souitaris *et al.*, 2007). It is important to note that past studies indicated that demographic variables may influence the attitude, PCB, subjective norms and

Background	Categories	EEP students ( <i>n</i> = 348)		MBA students (control group) ( <i>n</i> = 329)	
		<i>n</i>	%	<i>n</i>	%
Gender	Male	254	73.0	244	74.2
	Female	83	23.9	85	25.8
	No answer	11	3.2	0	0
	Total	348	100	329	100
Age	18-22 years	154	44.3	138	41.9
	23-26 years	114	32.8	166	32.2
	27-30 years	23	6.6	23	7
	31 and above	32	9.1	29	8.8
	No answer	25	7.2	33	10
Father's/family profession	Total	348	100	329	100
	Employed	172	49.4	113	34.3
	Self-employed	116	33.3	168	51.1
	Retired	32	9.2	281	85.4
	No answer	28	8.0	48	14.6
Work experience	Total	348	100	329	100
	Yes	176	50.6	128	38.9
	No	142	40.8	192	58.4
	No answer	30	8.6	9	2.7
Business experience	Total	348	100	329	100
	Yes	191	54.8	93	28.03
	No	118	33.9	200	60.8
	No answer	39	11.3	36	10.9
Total	348	100	329	100	

**Table II.**  
Demographic profile  
of participants



**Table III.**  
Mean, standard  
deviation and  
correlation matrix

	Mean	SD	Education	Attitude	Subjective norm	PCB	Intentions	Gender	Work experience	Business experience	Family profession
Education <sup>a</sup>	0.51	0.5	1								
Attitude	4.24	0.408	0.024	1							
Subjective norm	3.25	0.838	-0.084*	0.461**	1						
PCB	3.61	0.66	-0.119**	0.298**	0.649**	1					
Intentions	3.21	0.97	-0.758**	0.154**	0.376**	0.395**	1				
Gender <sup>a</sup>	0.75	0.44	0.014	0.074	0.126**	0.108**	0.042	1			
Work experience <sup>a</sup>	0.47	0.49	0.154**	-0.008	-0.076	-0.116**	-0.120**	-0.002	1		
Business experience <sup>a</sup>	0.64	0.76	-0.071	-0.108**	-0.215**	-0.174**	0.017	-0.019	0.195**	1	
Family profession <sup>a</sup>	0.73	0.7	-0.182**	-0.042	-0.124**	-0.052	0.096*	-0.055	0.093*	0.375**	1

**Notes:** <sup>a</sup>Indicates dummy variables. \*\*Correlation is significant at the 0.05; 0.01 levels, respectively (two-tailed)

intention. Therefore, to control the demographical variables, we used gender, work experience, business experience and family professions as the covariates.

Table IV shows the results of the mean differences analysis. Both groups had similar attitudes towards entrepreneurship and the MBA students reported a higher mean on subjective norms (3.32), perceived control for entrepreneurship (3.69) and entrepreneurship intentions (3.96). Nevertheless, except for entrepreneurship intentions, in all other dimensions, there is no significant difference between the EEP and MBA students. It implies that EEP run by these universities do not bring any additional benefits in promoting the entrepreneurship spirit among the students. In other words, it seems that specialization and additional courses offer in the EEP do not significantly add value to the respondents' attitude towards entrepreneurship as well as subjective norms and PCB. Indeed, entrepreneurship intentions (3.96) are highly significant ( $F = 57.2; p < 0.00$ ) and much higher for MBA students than EEP students.

Since specialized entrepreneurship does not make much difference, we further assess the impact of the entrepreneurship intentions antecedences by splitting the sample to unveil what drives intentions between the two groups. For robustness check, we also included the control variables. Table V reports the results of the regression analysis on the entrepreneurship intentions. Interestingly, for the EEP students, PBC ( $\beta = 0.314; p < 0.10$ ) influences the intentions. Nevertheless, it is only statistically significant at 10 per cent. The influence of PBC on the EIs of graduating entrepreneurship students, combined with the small impact of subjective norm ( $\beta = 0.012; p < 0.05$ ), suggests that these hands-on components help students learn how to make realistic decisions about the prospects of entrepreneurial opportunities, rather than being influenced by social pressure. The relatively low  $R^2$  (errors are randomly distributed) for the entrepreneurship students could indicate that other, unpredictable external events can affect intentions. By contrast, the MBA students are strongly influenced by subjective norms or social pressure ( $\beta = 0.384; p < 0.01$ ) and appear to be less attentive to their own capability and external influences.

Variables	EEP		MBA		F	p
	M	SD	M	SD		
Attitude towards entrepreneurship	4.25	0.45	4.23	0.36	1.05	0.302
Subjective norm	3.17	0.80	3.32	0.86	0.10	0.753
Perceived behavioural control	3.53	0.68	3.69	0.63	1.00	0.318
Entrepreneurial intention	2.49	0.65	3.96	0.61	57.2	0.000***

**Notes:** EEP ( $n = 282$ ); MBA ( $n = 310$ ) – after dropping all the no answer as the non-responses. Controls are gender, work experience, business experience and family professions. \*\*\* $p < 0.01$

**Table IV.** One-way ANCOVA mean differences between EEP and MBA students

Variables	EEP students		MBA students	
	Model 1	Model 2	Model 1	Model 2
Attitude towards entrepreneurship	0.146*	0.457*	0.137*	0.141**
Subjective norm	0.012**	0.181***	0.385***	0.402***
Perceived behavioural control	0.314*	0.281	0.185***	0.183***
Age		0.047		0.097***
Family profession (1 = self-employed; 0 = employed)		-0.035		0.022
Business experience (1 = yes; 0 = no)		0.042		0.003
Gender (1 = male; 0 = female)		0.055		-0.013
$R^2$	0.140	0.152	0.530	0.546

**Notes:** We used VIF to assess multicollinearity and the value is all below 2. Model 2 controls for demographic variables. \* $p < 0.10$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$

**Table V.** Effects on intentions, comparison between EEP and MBA students

### Discussion and implications

This study poses two important questions: does entrepreneurship education matter in influencing attitudes and intentions among those undertaking specialized entrepreneurship education and those who enrol in general business programmes? And, what if the driving factors of intention differ among the two groups? The results show that there is no significant difference except for intentions, thus supporting the *H4* of the study. In any educational activities, those activities should render starting a business desirable and feasible by changing the attitudes and intentions. Nevertheless, various exposures to the challenges of being an entrepreneur via the education programme among EEP students may have also lower their intention to be entrepreneurs[3]. This is particularly true in the case of Pakistan since various contextual and environmental factors deter the ease of starting a business. This could be the likely explanation for the low intentions. Past researches also show that education programmes which promote inspiration influences intentions the most (Souitaris *et al.*, 2007). And, programmes that just merely provide knowledge, learning and resources utilization are not adequate. As such, the implication is that programme designers should design the programmes purposefully so that trainers or instructors can go beyond just teaching and could inspire students. Our review of the objectives of EEP of the university understudy indicates that the programmes are mainly aimed to increase entrepreneurial knowledge, learning and skills. We further believe that the effectiveness depends on how the programme is implemented. Past evidences suggest that practical activities which include field visits, seminars, business ideas competition, mentoring by industrial experts and lectures delivered by local entrepreneurs can provide more exposure on how to deal with difficulties in venturing into business. Incorporating these types of activities in a specialized programme develops an understanding of the entrepreneurship environmental context of the country and helps participants to develop realistic perceptions of their ability to start a new venture (Chen *et al.*, 1998). In the case of Pakistan, educators and policy makers may have to review the design, effectiveness and implementation of the entrepreneurship programmes, at least in the participating universities.

Our regression results show the different degrees of impact of the three conceptually independent determinants of intentions between the two groups. MBA students are more influenced by subjective norms while EEP students' intentions are driven by PCB. The analysis offers some other interesting facts. First, it confirms the relevance of the TPB model and the importance of antecedents of intentions. Second, the regression results reconfirm our earlier observation and the reasons for the low intentions among EEP students since ease and difficulty of performing the intentions (PCB) exert stronger influence among EEP students. Implications for university administrators are as follows. University administrators and educators should consider improving the attitude, subjective norm and PCB towards entrepreneurship given that TPB can reasonably explain the intentions so the magnitude of impact as well as its significance can be improved in the future especially among EEP students. Similarly, programmes should go beyond promoting awareness and formal knowledge for students to realize entrepreneurship intentions.

### Conclusion

Policy makers and practitioners seeking to promote entrepreneurs increasingly promote specialized entrepreneurship education. With this view in mind, several major universities in Pakistan offer specialized EEPs. However, empirical evidences on the effectiveness of such programmes are lacking. In this study, we examined the role of EEPs by comparing the EIs of two groups, EEP students and MBA students graduating from general management courses and using the TPB as the study framework. By employing a control group, we have been able to provide a more viable comparison as to whether EEP are better than the other programmes. The control groups provide us with an external validity whereby we can be more confident in knowing whether the relationship holds over

variations in groups. Indeed, since we have control over the demographic variables, we can be ensured of internal validity and be more confident that the treatment (education) does not bring any additional benefits.

The results of the study also have theoretical implications and extend the knowledge on entrepreneurship literatures. First, this study is one of the very few studies that compared entrepreneurship-related outcomes of specialized EEPs with those of general business education. By taking this quasi-experimental approach, the study uncovers important, unexpected differences in intentions and their antecedents, with implications for policy makers. Second, the study underlines the value of the TPB as a framework for understanding how the effects of antecedents of EI and behaviour differ in different populations. Finally, the study provides evidence about the role of entrepreneurship education in developing economies specifically in Pakistan that has uncertain socio-political environments that are likely to impact entrepreneurship activities.

This study is not without limitations, which also poses opportunities for future research. First, although the study introduced a control group, comparisons were based only on EIs and their antecedents in the participants' final year of study. This cross-sectional design provided no information on how much intentions and antecedents changed over time. A longitudinal study would have provided information about such changes and allowing pre- and post-testing. Also, a qualitative study is needed to deepen understanding of how students' EIs and cognitions develop through participation in EEPs and their component parts to further strengthen the empirical analysis that uses a quantitative approach. Second, future studies should analyse the impact of the design and implementation of the entrepreneurship educational programme, especially its content on intentions and its antecedents.

### Notes

1. See Rideout and Gray (2013) for a detailed review of the effects of entrepreneurship education and its methodological critics.
2. Although the name suggests a degree at master level, in the Pakistan system, the level of study is considered as a bachelor degree.
3. Our anecdotal evidences via interviews also support this claim.

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Appendix

Item name	Item wording
<i>Attitude towards entrepreneurship</i>	
AA1 <sup>a</sup>	To what extent will starting a business provide you independence?
AA2	To what extent will starting a business provide you with decision-making power?
AA3	To what extent will starting a business provide you with a position of authority?
AA4 <sup>a</sup>	To what extent will starting a business provide you with the opportunity to be your own boss?
SR1 <sup>a</sup>	To what extent will starting a business provide you with an opportunity to know about your abilities?
SR2 <sup>a</sup>	To what extent will starting a business provide you with an opportunity to make use of your creativity?
SR3	To what extent will starting a business provide you with an opportunity to carry out your dreams?
SR4 <sup>a</sup>	To what extent will starting a business provide you with an opportunity to create something new?
AC1 <sup>a</sup>	To what extent will starting a business provide you with an opportunity to have a challenging job?
AC2	To what extent will starting a business provide you with an opportunity to have an exciting job?
AC3 <sup>a</sup>	To what extent will starting a business provide you with an opportunity to have an interesting job?
AAU1 <sup>a</sup>	To what extent will starting a business provide you with an opportunity to have power in making your own decisions?
AAU2 <sup>a</sup>	To what extent will starting a business provide you with an opportunity to have authority in making your own decisions?
<i>Subjective norm</i>	
SN1	To what extent is it important to you that your closest family members think that you should start your own business?
SN2	To what extent is it important to you that your closest friends think that you should start your own business?
SN3	To what extent is it important to you that your colleagues and people around you think that you should start your own business?
SN4	To what extent is it important to you that your fellow graduates of the entrepreneurship programs think that you should start your own business?
SN5 <sup>a</sup>	To what extent is it important to you that the local business community leaders think that you should start your own business?
<i>Perceived behavior control</i>	
PBC1	To what extent would it be easy for you to become an entrepreneur?
PBC2	To what extent would it be easy for you to start your own business?
PBC3	To what extent do you believe that the number of events outside your control which could prevent you from being self-employed is numerous?
PBC4	To what extent are you confident that you have the ability to successfully become self-employed?
PBC5	To what extent are you confident that if you start a business, the chances of failure will be very low?
<i>Entrepreneurial intention</i>	
E11	You are ready to do anything to be an entrepreneur
E12	Your professional goal is to become an entrepreneur
E13	You will make every effort to start your own business
E14	You are determined to create a firm in the future
E15	You have very seriously thought of starting a firm
E16 <sup>a</sup>	You have firm intentions to start a business

Note: Items marked <sup>a</sup> removed from final scales

Table A1.  
Items

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