

Linking entrepreneurship education and entrepreneurial intentions: an interactive effect of social and personal factors

Muhammad Shehryar Shahid* and
Saad Raafay Ahsen

Lahore University of Management Sciences,
Sector U, DHA Phase 3, Lahore, Punjab 54792, Pakistan
Email: muhammad.shehryar@lums.edu.pk
Email: saadahsen@gmail.com
*Corresponding author

Abstract: Relatively few studies have sought to investigate the ‘person × context’ interaction in relation to its impact on the effectiveness of entrepreneurship education (EE) in determining an individual’s entrepreneurial intentions (EI). This study endeavours to fill this crucial research gap in an emerging economy context by examining the moderating effect of personal and social factors on the EE-EI link. Using maximum variation sampling to survey 1,046 students in the urban city of Lahore, Pakistan and employing a hierarchical multiple regression analysis, this study examines the influence of explanatory variables on EI sequentially. Our counter-intuitive findings reveal that the rewarding impact of EE with regards to EI is greater for students with higher need for academic achievement (NAA) than for those with a lower NAA, and for non-business majors than for business majors, while EE has negligible effect on the EI of students from a family business background.

Keywords: entrepreneurial intentions; entrepreneurship education; moderating effect; personal factors; university students; entrepreneurship; Pakistan.

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Biographical notes: Muhammad Shehryar Shahid is an Assistant Professor of Entrepreneurship at the Lahore University of Management Sciences in Pakistan. Since completing his PhD in Entrepreneurship from the University of Sheffield, UK, he has published extensively in the fields of informal entrepreneurship and entrepreneurship education. His work has appeared in prominent journals such as *World Development*, *Entrepreneurship and Regional Development*, as well as *International Journal of Urban and Regional Research*. Most recently, He has been at the forefront of a concerted effort to publish teaching case studies in Entrepreneurship for MBA students, grounded in Pakistan’s local context.

Saad Raafay Ahsen is a Research Associate in Entrepreneurship at the Lahore University of Management Sciences. Since completing his MSc in Supply Chain and Operations Management from the University of Nottingham, UK, he has also worked as a Visiting Faculty member at Information Technology

University, Pakistan. He has co-authored numerous teaching case studies in Entrepreneurship, as well as academic papers in the field of entrepreneurship education. His sub-interests include entrepreneurial intentions, as well as humanitarian logistics.

1 Introduction

In recent times, there has been a growing realisation that entrepreneurs need to be nurtured as they can play a pivotal role in revitalising the economy of a country and allocating jobs; since entrepreneurship can lead to high growth rates and opportunity creation for society at large. Scholarship in this arena asserts that unique entrepreneurial expertise can be derived from entrepreneurship education (EE) and exposure to entrepreneurial activities (e.g., Fayolle et al., 2006; Lans et al., 2008; Zhang et al., 2014). In this study, EE is defined as enrolling in any of the entrepreneurship courses (e.g., entrepreneurship and social entrepreneurship) being offered at one's university (Wilson et al., 2007; Karimi et al., 2016). Prior scholarship has highlighted that EE enhances student awareness, highlights the entrepreneurial path as a viable career option, and improves students' entrepreneurship levels by increasing their knowledge, building their confidence, and enhancing their self-efficacy (Krueger and Brazeal, 1994; Fayolle and Gailly, 2015; Wilson et al., 2007). As such, it has a direct cognitive link with the concept of entrepreneurial intentions (EIs); here, defined as one's desire to own one's own business (Crant, 1996), or to start a new business (Krueger et al., 2000).

Still, there is a dearth of research on the entrepreneurship education-entrepreneurial intentions link, especially in the developing countries context. Moreover, apart from EE, certain personal and social factors have also been known to influence one's EIs in past scholarship, although, once again largely absent from the developing countries context. As such, this paper attempts to determine which factors (personal, social and educational) are a strong determinants of one's EIs; and whether personal and social factors moderate the relationship between EE and EI. In this regard, our study examines the entrepreneurial intentions of university students in an urban setting of a developing country, i.e., Pakistan.

The country has been deemed a suitable setting for this study for a variety of reasons. Firstly, there is an urgent need to foster entrepreneurship to uplift the Pakistan's economy, and this urgency is increasing over time particularly due to the country's escalating population size. Currently, Pakistan has a population of over 180 million, and a population growth rate of 2%, due to which its population is expected to double in the next 36 years. Additionally, the age-distribution of the population makes a compelling case for promoting entrepreneurship in the country. This is because currently, almost 50% of Pakistan's population is below the age of 20, and over 60% is below the age of 30, due to which the working-age population is swelling, but jobs are not being created fast enough. This situation is highly generalisable across other developing countries in South America, Africa, and East Asia as well. Secondly, although entrepreneurial thinking has recently taken root in the country at the policy level (Haque, 2011), the new business ownership rate in Pakistan is 3%, which is lower than the average rate for Asia Pacific and South Asia (5%), and the established business ownership rate in Pakistan is

4%, which was lower than the average rate for Asia Pacific and South Asia (10%) (Qureshi and Mian, 2012). This highlights a gap in policy makers' current understanding of start-up motivation and EI in the developing countries context. As such, we put forward that to promote entrepreneurship nationally, it is first essential to understand the process that underlies the emergence of EIs of the country's youth. Consequently, a need exists to meticulously explore the entrepreneurship education-EIs link in Pakistan.

It is important to note that up till now, not only does empirical research on the effectiveness of EE with regard to fostering entrepreneurship among university students remain highly deficient, but what little research has been done has yielded mixed results (Saeed et al., 2015). Firstly, therefore, this paper aims to contribute to the paucity of studies that investigate the impact of EE, as distinct from general education, on university students' EI, so as to provide a clear path forward for future scholarship in this area. Secondly, the deficiency of studies investigating the effectiveness of EE becomes even more glaring in the context of developing countries such as Pakistan. In fact, the literature on the determinants of EIs in Pakistan, in general, remains profoundly deficient in terms of empirical data; Saeed et al. (2014, p.300) claim that they "conducted a review of the literature published between 2000 and 2012 and found that, among the 85 most relevant papers, only a few address the developing part of the world, and none address Pakistan." This paper, therefore, aims to contribute to this paucity of studies in the context of Pakistan, the findings of which are deemed to be highly generalisable across other developing country contexts. Thirdly, the final contribution of this paper lies in the fact that by disentangling the ways in which certain personal and social factors interact with EE to influence EIs, it demonstrates how different university students respond differently to the same contextual stimuli, thereby providing a more fine-grained understanding of the EE-EI relationship. It thus builds on the growing sentiment within scholarship in this arena that a contextual understanding of the configuration behind EIs is critical in enhancing our understanding of the phenomenon (Fayolle and Liñán, 2014). Thus far, no known study has sought to investigate person \times context interactions in Pakistan using moderation effects, consequently, this is perhaps the most significant contribution of this study.

The paper is organised as follows. First, we examine prior scholarship on the EE-EIs link, and lay the theoretical foundation of our study. Next, we review the variables under consideration and derive our hypotheses. Next, we describe our methodology and present the results. Finally, we discuss our findings, state the implications of our study, and conclude our paper, after identifying directions for future research.

2 EI: a conceptual model

The origins of planned behaviour can be traced to social cognitive theory, which puts forth several building blocks guiding the formation of EIs (Prodan and Drnovsek, 2010). Historically, three theoretical frameworks have informed the study of EIs; Ajzen's (1991) theory of planned behaviour, Shapero's (1975) model of the entrepreneurial event, and the EIs model put forth by Bird (1988), along with Boyd and Vozikis (1994). Laying the early groundwork for the theoretical model proposed in our study, Ajzen (2006) argues that intention is based on two predictors, i.e., desirability (attitude toward the behaviour, subjective norm) and feasibility (perceived behavioural control). As such, Ajzen (2002)

states that the more favourable the desirability, and greater the feasibility, the stronger is a person's intention to perform the said behaviour, because a person has to cognitively process the intention for it to become a behaviour. Why people choose to become entrepreneurs, the EI model put forth by Krueger (1993) and Krueger et al. (2000) remains to be the most predominant one. Building on this early groundwork in the literature of planned behaviour, Krueger et al. (2000) argue that starting one's own business is an intentional act, and 'intentions are the single best predictor of any planned behaviour', acknowledging the 'entrepreneurial event' as a dynamic interaction between an individual and their environment (Shane and Venkataraman, 2000). Consequently, as a result of robust empirical research, EIs are widely recognised as the primary predictor of future entrepreneurial behaviour which is in agreement with the social cognitive perspective of entrepreneurship.

In bringing together existing studies on planned behaviour in psychology, and intentionality in entrepreneurship, our model of EIs (Figure 1), draws inspiration from the work of Shapero (1975), Ajzen (1991) and Krueger et al. (2000). We define EIs as one's desire to own one's own business (Crant, 1996), or to start a new business (Krueger et al., 2000), with planned behaviour here being the actual pursuit of a business venture. In other words, EI in this context can be said to be "the self-acknowledged conviction by a person to set up a new business venture, and to consciously plan to do so at some point in the future" (Thompson, 2009).

Over the years, numerous studies have attempted to pinpoint the factors which inform an individual's EI. While the effect of the entrepreneur's characteristics (personal factors) and their societal environment (social factors) on their EI has been robustly tested in prior scholarship, studies examining this relationship in emerging economies have only recently started to emerge (Anggadwita et al., 2017; Lacap et al., 2018). More pressing however, is a lack of scholarship examining the link between EE and EI in the developing countries context. EE, here defined as enrolling in any of the entrepreneurship courses (e.g., entrepreneurship and social entrepreneurship) being offered at one's university (Wilson et al., 2007; Karimi et al., 2016), has been at the forefront of the call for a more in-depth examination of the factors influencing an individual's EI (Liñán and Fayolle, 2015). This is a result of emerging empirical research which has revealed significant differences in the intention levels of students who partake in EE and those who do not (Zhao et al., 2005). The role of EE has been highlighted as a key factor in enhancing entrepreneurial attitude in individuals (Potter, 2008), with EE demonstrating a stronger effect on entrepreneurial self-efficacy for women than for men (Wilson et al., 2007), and elective entrepreneurship education programs (EEPs) displaying a more significant positive relationship with EI than compulsory EEPs (Karimi et al., 2016). Still, for these findings to be generalisable across a variety of contexts, there is a need for robust empirical examination. While sporadic attention has been given to the study of EE over the years (Dana, 1987, 1993, 2001; Fayolle and Gailly, 2015; Feltnhofer, 2017), there is a general dearth of empirical scholarship examining the EE-EIs link, especially in the developing countries context.

Therefore, given the discussion above, this paper proposes two key research questions:

- 1 How important is EE in influencing students' EIs within the context of certain personal and social factors?

- 2 Is the rewarding impact of EE with regard to EIs higher for students who have a higher need for academic achievement (NAA) than for those who have a lower NAA; for females than for males; for students with non-business majors than for those with business majors; and for students from with a non-entrepreneurial family background than for those with an entrepreneurial family background?

3 Hypotheses development

Drawing upon the literature pertaining to entrepreneurship in general and EIs in particular, distinct sets of educational, personal and social variables have been largely found to influence the EIs of students. Each of these variables is subsequently reviewed and hypothesised for the purpose of this study.

3.1 *Educational variables*

3.1.1 *Entrepreneurship education*

The potential impact of EE on students' EIs primarily includes two aspects. Firstly, EE leads to a change in students' attitudes and perceptions (Liñán, 2008). For instance, Wilson et al. (2007) argue that EE can play an important role in developing students' entrepreneurial self-efficacy, which is a well-known determinant of EIs (Fitzsimmons and Douglas, 2011; Krueger et al., 2000). Secondly, EE develops students' human capital (Davidsson and Honig, 2003). For example, Martin et al. (2013) find a statistically significant relationship between EE and entrepreneurship-related knowledge and skills, which in turn trigger EIs (Cho, 1998; Martin et al., 2013). In Pakistan too, scholars have concluded that EE boost students' EIs (Hussain and Hashim, 2015; Saeed et al., 2014, 2015). Thus, we offer the following hypothesis:

Hypothesis 1 EE is positively associated with students' EIs.

3.1.2 *Pedagogical methods*

Numerous studies in the field of EE have attempted to identify specific pedagogical methods that enhance and foster students' entrepreneurial spirit and expertise. These include, among others, case studies, project-based learning, creativity enhancing assignments, guest speakers and field trips (Gatchalian, 2010; Solomon et al., 2002). Moreover, Sherman et al. (2008) concluded that an experiential pedagogical approach to entrepreneurship is positively related to students' interest in new venture start-ups. Accordingly, we propose:

Hypothesis 2 Use of experiential pedagogical methods is positively associated with students' EIs.

3.1.3 *Faculty profile*

The faculty teaching entrepreneurship related courses may spur students' EIs by enhancing their self-efficacy (Krueger and Brazeal, 1994). This is explained by the fact that entrepreneurship faculty provides students with the information transmission, social persuasion, and positive encouragement and feedback to engage in entrepreneurship

(Karimi et al., 2014). The quality of entrepreneurship faculty is essentially measured by their professional experience and actual ownership of business, as opposed to just having a PhD (Gatchalian, 2010). Owning a business and having a strong professional background is, in fact, an epitome of the instructor's entrepreneurialism and practical experience, which is likely to have a direct positive effect on students' self-efficacy, and hence their EIs. No known study, however, has thus far attempted to examine the effect of the profile of the entrepreneurship instructor on students' EIs. Therefore, we hypothesise:

Hypothesis 3 An entrepreneurship course being taught by a faculty member who has a strong professional experience and/or owns a personal business himself/herself will have a positive association with students' EIs.

3.2 Personal factors

3.2.1 Need for academic achievement

High need for achievement has emerged as an important personality characteristic of entrepreneurs (Indarti et al., 2010). In Pakistan too, Hussain et al. (2014) and Saeed et al. (2014) found a significant positive relationship between need for achievement and EIs of students. Therefore, since need for achievement has emerged as a well-known trigger of EIs, it is reasonable to expect that for students, their NAA will also have a significant positive impact on EIs. NAA is here defined as the motivation to perform well academically. Furthermore, Tang and Tang (2007) suggested that students having a higher achievement motivation tend to exhibit a higher level of risk-taking propensity than students having a lower achievement motivation. Since EE is also found to have a positive impact on students' risk-taking propensity by improving their entrepreneurial self-efficacy (Hassan and Wafa, 2012), we anticipate that students having a lower achievement motivation will benefit more from EE as opposed to the students who already have relatively higher risk-taking tendencies. Thus, we hypothesise:

Hypothesis 4a NAA is positively associated with students' EIs.

Hypothesis 4b The positive relationship between EEs and entrepreneurial education will be stronger for students who have a lower NAA than for those who have a higher NAA.

3.2.2 Gender

Women have a less positive attitude toward entrepreneurship, and tend to have lower entrepreneurship aspirations than their male counterparts (e.g., Indarti et al., 2010; Schwarz et al., 2009). In Pakistan, too, it is often contended that women have lower EIs than men (Aslam et al., 2012; Azhar et al., 2011). Not only do women tend to exhibit a perceived lack of necessary skills (Bandura, 1992), but the perceived knowledge gap for entrepreneurship is also wider for women than for men (BarNir et al., 2011). Therefore, EE may act as an equaliser (Wilson et al., 2007) for women, helping them strengthen their skills and increase their EIs. Resultantly, we expect that the effect of EE on EIs may be more rewarding for women than for men (Bae et al., 2014). Thus, we infer the following hypotheses:

Hypothesis 5a Male students have higher EIs than females do.

Hypothesis 5b The positive relationship between EE and EIs will be stronger for female students than for male students.

3.2.3 *Subject major*

Students' subject major is another factor potentially affecting the relationship between EE and EIs. Specifically, it is revealed that graduates who opt for entrepreneurship, management, or business as a subject major have stronger EIs than other graduates (Harris and Gibson, 2008; Shinnar et al., 2009). This can be explained by the fact that the possession of business and management skills improves their perceived feasibility to undertake a business venture on their own (Harris and Gibson, 2008). However, since EE also attempts to instil basic entrepreneurial skills and characteristics in students, non-business students, who otherwise lack the fundamental business management skills, are likely to benefit more from enrolling in an entrepreneurship course than business students, who may have already attained such skills in other management and business related courses. One may also assume that non-business students are likely to experience a more pronounced change in their given mindset through entrepreneurial education due to an increased exposure to activities such as guest speaker sessions, which are otherwise not very common in their curriculum. Since exposure to such activities has a direct positive effect on individuals' EI (Sherman et al., 2008), we hypothesise:

Hypothesis 6a Students with business majors have higher EIs than those with non-business majors.

Hypothesis 6b The positive relationship between EE and EI will be stronger for students with non-business majors than for those with business majors.

3.3 *Social environment*

3.3.1 *Social norms*

TPB (Ajzen, 1991) identified three cognitive antecedents to behavioural intent: attitudes toward the behaviour, perceived behavioural control, and social norms. According to the TPB, social norms refer to the perception that reference people may or may not approve of the decision to become an entrepreneur. Some scholars did find the social norms antecedent as significantly related to EIs (e.g., Engle et al., 2011; Tkachev and Kolvereid, 1999). However, the bulk of scholarship has asserted that the social norms antecedent is uncorrelated to EIs (e.g., Krueger et al., 2000; Liñán and Chen, 2009; Li, 2007), that is, students' perceptions that family and friends approve or disapprove of their decision to become an entrepreneur have no influence on their intentions to pursue a career in entrepreneurship. Hence, we offer the following hypothesis:

Hypothesis 7 Social norms do not have any significant impact on students' EIs.

3.3.2 *Family business background*

Individuals from families that own businesses are likely to use that exposure as a socialisation source, which positively contributes to their intentions to become an entrepreneur (Parcel and Menaghan, 1994). Evidence from Pakistan also reveals that

family business background has a significant positive impact on the entrepreneurial intents of students (Ahmed et al., 2010; Aslam et al., 2012). However, it is argued that students coming from entrepreneurial family backgrounds may already have the values, critical resources, and social networks required to start their own businesses, which reduces their necessities of additional inputs from EE (Bae et al., 2014). Resultantly, Zellweger et al. (2011) assert that the rewarding impact of EE is expected to be lower for students coming from entrepreneurial family backgrounds. Therefore, we hypothesise:

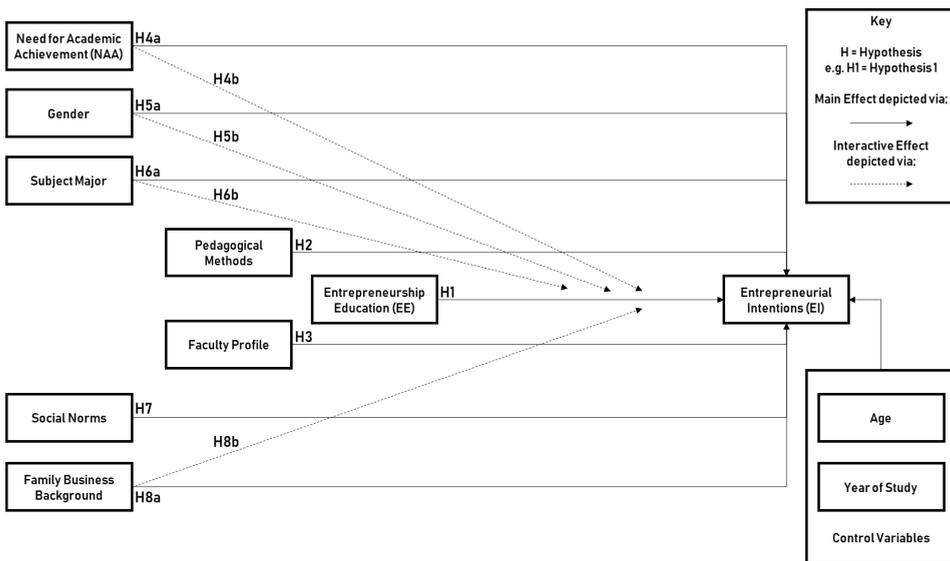
Hypothesis 8a Students from an entrepreneurial family background will have higher EIs than those who do not come from one.

Hypothesis 8b The positive relationship between EE and EIs will be weaker for students from an entrepreneurial family background than for those who do not come from one.

3.4 Theoretical model

An illustration of our theoretical model is shown in Figure 1.

Figure 1 Theoretical model



4 Methodology

4.1 Data

The population of this study comprises of students enrolled in all the universities in Lahore, Pakistan. In total, there are 37 universities in Lahore. Out of these, 24 universities are owned by the private sector, whilst 13 universities are owned by the public sector. Out of these 37 universities, evidence was drawn from three universities of

Lahore, Pakistan: Lahore University of Management Sciences (LUMS), University of the Punjab (PU), and University of Central Punjab (UCP). These universities were purposely chosen based on their stark contrast in terms of their size, as well as the type and the background of students they cater to; while PU is the largest public sector university of Pakistan, LUMS and UCP are both private sector universities. Besides, even though both LUMS and UCP are privately owned, LUMS is one of the most competitive universities of the country, and its students predominantly come from relatively privileged academic and socio-economic backgrounds. Conversely, UCP is a middle-tier private university with a slightly bigger student body than LUMS, but is much more lenient in terms of academic rigor and admission criteria, with students coming mainly from the middle and upper-middle socio-economic strata of the society. PU, meanwhile, caters to the widest range of students coming from diverse geographical, socio-economic, and professional backgrounds. Furthermore, whilst LUMS and UCP students predominantly reside in urban areas, the students of PU hail from both urban and rural areas.

Table 1 Characteristics of the study sample

<i>Characteristic</i>	<i>Percentage (LUMS)</i>	<i>Percentage (PU)</i>	<i>Percentage (UCP)</i>
<i>Age</i>			
17–19 years	21%	10%	6%
20–22	73%	71%	51%
23+	6%	19%	43%
<i>Sex</i>			
Females	47%	42%	17%
Males	53%	58%	83%
<i>Family business background</i>			
Yes	49%	51%	71%
No	51%	49%	29%
<i>Year of study</i>			
First	18%	6%	1%
Second	13%	7%	18%
Third	16%	22%	48%
Fourth	53%	65%	33%
<i>CGPA</i>			
2.000–2.500	4%	2%	14%
2.501–3.000	16%	8%	40%
3.001–3.500	47%	43%	37%
3.501–4.000	33%	47%	9%

To select participants from these three universities, maximum variation sampling was employed within each university. A maximum variation sample (sometimes called a maximum diversity sample or a maximum heterogeneity sample) is a special kind of purposive sample, and if carefully drawn, can be as representative as a random sample (Patton, 2002). At the outset, therefore, the class schedules of these three universities were acquired, and the maximum variation sampling technique was then employed to purposely select classes from different departments within each university. Subsequently, e-mails were sent out to the instructors of these classes, requesting permission to conduct

the survey questionnaires in their class. Once this permission was acquired, the authors personally conducted the survey questionnaires in these classes during spring 2016. In total, 550 filled out questionnaires were collected from within each university. Thereafter, the incomplete and bogus questionnaires were disposed of. The resulting sample size was 470 students from LUMS, 259 students from PU, and 286 students from UCP. Since maximum variation sampling was employed, a fair representation of respondents from different departments, genders, years of study, and programs was ensured from within each university (see Table 1 for the demographic break-up of the sample).

4.2 Variables

4.2.1 Dependent variable

- *EIs*: Composed of items from the version of entrepreneurial intentions questionnaire (EIQ) used by Jaén and Liñán (2013). In this version, EIs have been measured using a five-item Likert scale. However, following a confirmatory factor analysis, the third item was excluded by us, as shown in Table 2. Responses were obtained on a scale ranging from 1 – ‘totally disagree’ to 5 – ‘totally agree’.

Table 2 Confirmatory factor analysis results (pooled sample)

<i>Constructs and items</i>	<i>Factor loading</i>
EI (CR = 0.85, AVE = 0.62, α = 0.86)	
It is very likely that I will start a venture someday	0.72
I am willing to make any effort to become an entrepreneur	0.77
I have serious doubts whether I will ever start a venture*	0.21
I am determined to start a business in the future	0.77
My professional goal is to be an entrepreneur	0.79
Pedagogical methods (CR = 0.60, AVE = 0.54, α = 0.61)	
A majority of the courses that I have taken made extensive use of case studies	0.60
A majority of the courses that I have taken employed a project-based learning approach	0.60
A majority of the courses that I have taken included assignments that enhanced my creative thinking skills	0.50
A majority of the courses that I have taken included guest speakers and field trips	0.40
Social norms (CR = 0.72, AVE = 0.46, α = 0.74)	
Please, think now about your family and close friends. To what extent would they agree if you decide to become an entrepreneur and start your own business?	
My immediate family (parents and siblings)	0.60
My close friends	0.78
My colleagues or mates	0.69

Notes: *Item excluded after CFA. AVE = Average variance extracted, CR = composite reliability and α = Cronbach's alpha.

4.2.2 Educational variables

- *Entrepreneurship education*: A dummy variable with value 1 if the response to 'have you taken any of the entrepreneurship courses (e.g., entrepreneurship, social entrepreneurship) being offered at your university?' is positive, and 0 otherwise.
- *Pedagogical methods*: Measured on a four-item Likert scale developed specifically for this study. The factor loadings and the values of average variance extracted (AVE), composite reliability (CR), and Cronbach's alpha (α) for this scale have been provided in Table 2. Responses range from 1 – 'totally disagree' to 5 – 'totally agree'.
- *Faculty profile*: Measured on a newly developed two-item Likert scale (the entrepreneurship instructor(s) who taught me owns and runs a business; the entrepreneurship instructor(s) who taught me possesses immense professional experience; Cronbach's alpha = 0.92). The anchor points for item rating were 1 – 'totally disagree' to 5 – 'totally agree'.

4.2.3 Personal factors

- *NAA*: This continuous variable is measured by the cumulative grade point average (CGPA) scored by the students, which is an objective indicator of their motivation to perform well academically, in other words, their NAA.
- *Gender*: This dummy variable takes the value of 1 for female and 0 for male.
- *Subject major*: A dummy variable which takes on the value 1 if the respondent is specialising in a business subject area, and 0 if he/she is specialising in a non-business subject area.

4.2.4 Social environment

- *Social norms*: Measured on a three-item Likert scale, ranging from 1 – 'totally disagree' to 5 – 'totally agree', composed of items from the version of EIQ used by Jaén and Liñán (2013). Factor loadings and the values of AVE, CR, and α for this scale have been provided in Table 2.
- *Family business background*: A dummy variable with value 1 if the response to 'are any of your immediate family members (parents, siblings), or have they been, a business-owner?' is positive, and 0 otherwise.

4.2.5 Control variables

- *Age*: This continuous variable is measured by the age of the respondent.
- *Year of study*: This ordinal variable, coded 1, 2, 3 and 4, indicates how far the student has progressed in his/her degree.

4.3 Methods

In order to examine the influence of the explanatory variables in a sequential manner, hierarchical multiple regression analysis is used, employing a simple OLS technique.

A series of three blocks of independent variables are consequently entered into the regression analysis in a sequential way, with EIs as the dependent variable. The first model (M1) includes solely the educational and personal factors, the second model (M2) includes the personal, educational, and social variables, and the third model (M3) covers the interaction terms in addition to the personal, educational and social variables. As suggested by Aiken and West (1991) for moderated regression analysis, we centre the continuous variables in order to avoid high multicollinearity. To check the validity of the final model (M3), a multicollinearity test was conducted; it was found that all the variance inflation factors (VIF) were less than 10 and all the values of tolerance ($1 / \text{VIF}$) were greater than 0.1, revealing that there are no multicollinearity issues in this model. Furthermore, a linktest reveals that the model is well-specified, and an ovtest reveals that the model does not have an omitted variable bias. Lastly, though heteroskedasticity was revealed in the model, the *rvfplot* did not show a problem. To fix the problem of heteroskedasticity, robust errors were used in the regression.

5 Results

The results of the hierarchical regression analysis are summarised in Table 3. Model 1 endeavours to explore the impact of the educational and the personal variables on the EIs of university students in Pakistan ($R\text{-squared} = 0.17$). Subsequently, when the social variables are added alongside the educational and the personal variables in Model 2, the $R\text{-squared}$ is 0.27, depicting that adding the social variables in the model leads to a 10% improvement in the model fit. Thereafter, when the interaction terms are added in Model 3, the $R\text{-squared}$ is 0.28, therefore, the interaction effects lead to an improvement of only 1% in the model fit.

The results in Table 3 show that Hypothesis 1, which predicted that EE is positively associated with students' EIs, is significantly supported ($\beta = 2.38, p < 0.01$, Model 2). Meanwhile, the results are consistent with Hypothesis 2 ($\beta = 0.12, p < 0.01$, Model 2), which argued that the use of experiential pedagogical methods is positively associated with students' EIs. The results also offer support for Hypothesis 3 ($\beta = 0.09, p < 0.1$, Model 2), which posited a significant positive association between an experiential entrepreneurship faculty and students' EIs.

Moving on to the personal factors, Hypothesis 4a suggested that the NAA is positively associated with students' EIs. Whilst the effect of the NAA is significant in Model 1, the results in Model 2 show otherwise. Therefore, Hypothesis 4a is not supported. Likewise, Hypothesis 4b, which predicted that the positive relationship between EE and EIs will be stronger for students who have a lower NAA than for those who have a higher NAA, is also rejected. Contrastingly, Hypothesis 5a is supported ($\beta = -2.26, p < 0.01$, Model 2), proving that male students have higher EIs than female students do. Furthermore, Hypothesis 5b is also validated ($\beta = 0.98, p < 0.1$, Model 3), evidencing that the positive relationship between EE and EIs is stronger for female students than for male students. Hypothesis 6a posited that students with business majors have higher EIs than those with non-business majors. Model 2, nevertheless, did not find support for this hypothesis. It was revealed, however, that the positive relationship between EE and EIs is weaker ($\beta = -0.88, p < 0.1$, Model 3) for students with business majors than for those with non-business majors, which validates Hypothesis 6b.

Moving on to the students' social environment, Hypothesis 7 is not supported, since the results reveal that social norms are very significantly and positively associated with students' EIs ($\beta = 0.44$, $p < 0.01$, Model 2). Meanwhile, the results are consistent with Hypothesis 8a ($\beta = 0.74$, $p < 0.01$, Model 2); students from an entrepreneurial family background tend to exhibit higher EIs than those who do not come from one. However, although a main effect for family business background is observed, the interaction term is not significant, as shown in Model 3. This refutes Hypothesis 8b.

Table 3 Hierarchical regression analysis (results)

<i>Variable</i>	<i>M1</i>	<i>M2</i>	<i>M3</i>
Educational variables			
Entrepreneurship education	2.887***	2.378***	2.663***
Pedagogical methods	0.155***	0.117***	0.088**
Faculty profile	0.152***	0.092*	0.084
Personal factors			
NAA	-0.556*	-0.260	-0.742*
Gender	-2.212***	-2.263***	-2.701***
Subject major	-0.013	0.004	0.571*
Social environment			
Social norms		0.443***	0.434***
Family business background		0.741***	0.894***
Interaction terms			
Entrepreneurship education \times NAA			1.180*
Entrepreneurship education \times Gender			0.978*
Entrepreneurship education \times Subject major			-0.878*
Entrepreneurship education \times Family business background			-0.461
Control variables			
Age	0.233***	0.185**	0.243***
Year of study	-0.427***	-0.269*	-0.319**
Number of observations	843	824	824
R-squared	0.17	0.27	0.28

Notes: Dependent variable: EIs. Significance levels: * $p < 0.10$, ** $p < 0.05$ and *** $p < 0.01$.

6 Findings and discussion

Our findings have demonstrated the significant positive role of *EE* on students' career choice intentions, which is consistent with previous research (e.g., Saeed et al., 2015). This may be explained by the fact that entrepreneurship courses aim to develop in the students, certain core values, traits, and skills which typify successful entrepreneurs, including risk-taking propensity, critical thinking, tolerance for uncertainty, and opportunity recognition, which in turn is likely to positively influence their willingness to

start a business. The strong impact of pedagogical methods on students' EIs is another important finding, which is in line with previous research (Sherman et al., 2008). It indicates that employing an experiential approach to teaching entrepreneurship, as opposed to traditional teaching methods, has a higher chance of igniting students' entrepreneurial spirit. This may be because a pedagogical approach that places more emphasis on practical learning tools, such as case studies, project-based learning, creativity enhancing assignments, guest speakers, and field trips, is more likely to cultivate the aforementioned entrepreneurial traits and skills in students. Furthermore, not only do our findings support an experiential pedagogical approach, they also illustrate that the information transmission, social persuasion, and positive encouragement and feedback to engage in entrepreneurship provided by an entrepreneurship instructor is likely to carry more credibility, thereby leading to higher EIs, if the instructor himself/herself has immense professional experience or is a practicing entrepreneur. This finding becomes even more significant in the context of Pakistan, where the traditional emphasis has been on job seeking, as opposed to being an entrepreneur, therefore, an instructor who himself/herself defied society's norms and chose to be an entrepreneur is more likely to effectively guide and inspire students' interest towards entrepreneurship. Moreover, given that Pakistan has a high power distance culture (Hofstede, 1980), teachers are generally perceived as high authority figures and important role models by their students, particularly when it relates to their decisions about their professional careers. Anything said or implied by an instructor, therefore, is held in high regard by most of the students in Pakistan, and they tend to be far more receptive to it as compared to any knowledge imparted by a friend or a colleague. Hence, being taught in a high power distance culture, such as Pakistan, by an instructor who himself/herself is an entrepreneur, will bring more credibility to the notion of entrepreneurship. It will help students overcome their psychological fears in a society where not much support is available for this profession otherwise.

Moving on to the *personal variables*, the NAA has not emerged as a significant determinant of Pakistani students' EIs, which contradicts previous studies that have cited need for achievement as an important determinant of EIs (e.g., Indarti et al., 2010; Saeed et al., 2014). Another striking result is that it is revealed that EE has a more pronounced positive impact on students having a higher achievement motivation. A possible explanation for this may be that in the context of Pakistan, more emphasis has conventionally been placed on face-saving (Saeed et al., 2015) and high academic achievement, and so the potential loss of reputation from failure may in fact make Pakistani students with higher achievement motivation more risk averse than students with lower achievement motivation. Since EE boosts students' risk-taking propensity, the rewarding impact of EE is therefore higher for Pakistani students having a higher NAA than for those having a lower NAA. The results also reveal that males have higher EIs than females do, which is in consonance with earlier literature (e.g., Aslam et al., 2012; Indarti et al., 2010). However, the positive relationship between EE and EIs is stronger for females than for males. This may be because in Pakistan, men and women are still conventionally assigned to different occupational roles, owing to which Pakistani women tend to limit their aspirations for career paths which are typically perceived as more masculine, such as entrepreneurship. Therefore, the value addition from EE will be higher for Pakistani women, since by equipping them with the necessary entrepreneurial knowledge and skills, it will make them feel more confident about becoming an

entrepreneur, thereby mitigating the biased perceptions of entrepreneurship as a career choice that the society might have engraved in their minds. This is consistent with previous research (Wilson et al., 2007), which asserts that EE is more important to women than to men in increasing self-efficacy, and that educational initiatives addressing both entrepreneurial knowledge and self-efficacy are critically important to females (Kourilsky and Walstad, 1998). Moving ahead, the results do not support previous studies which have found that students with business majors have higher EIs than those with non-business majors (e.g., Harris and Gibson, 2008; Shinnar et al., 2009). Nevertheless, whilst a main effect for subject major is not observed, the interaction term is significant, indicating that the positive relationship between EE and EIs is stronger for students with non-business majors than for those with business majors. A possible explanation for this may be that EE attempts to teach students certain skills and knowledge aimed at improving their entrepreneurial self-efficacy. However, since business students might have already had prior exposure to these skills and knowledge during the course of their degrees, non-business students are likely to end up benefiting more from enrolling in an entrepreneurship course than business students. Overall, these findings indicate that not only is EE positively associated Pakistani students' EIs, but its rewarding impact is higher for students who have a higher NAA than for those who have a lower NAA; for female students than for male students; and for students with non-business majors than for those with business majors.

The positive impact of *social norms* on students' EIs is another important finding, which stands in stark contrast to previous international research (e.g., Engle et al., 2011; Krueger et al., 2000). In fact, according to the findings, this positive impact is so robust that adding social norms, along with family business background, in the model explains an additional 10% of the variance in Pakistani students' EIs. This result is consistent with Hofstede's (1980) assertion that as opposed to most developed nations, Pakistan has a collectivist culture, whereby its individuals have higher conformist tendencies, due to which they accord high importance to the approval of family and friends in their career decision-making process. Another important aspect of students' social environment, their family business background, also positively influences their EIs, which is in line with previous research (e.g., Ahmed et al., 2010; Aslam et al., 2012). However, whilst a main effect for family business background is observed, the interaction term is not significant, revealing that there is no difference in the relationship between EE and EIs of students from an entrepreneurial family background and those who do not come from one. Overall, therefore, the social environment in which the students of Pakistan are embedded plays a pivotal role in shaping their EIs.

7 Implications of our study

Firstly, our findings have important implications for targeted efforts in the realm of *educational* policy-making in Pakistan. Since the findings have demonstrated the significant role of EE in students' career choice intentions, universities in Pakistan should seek to promote entrepreneurship as an integral part of the university curriculum. One way of achieving this is by introducing entrepreneurship as an academic minor in universities. Furthermore, experiential learning tools should not be restricted to EE only. In fact, in order to promote an entrepreneurial climate, universities in Pakistan should increase the use of experiential learning tools in their overall curriculum as well.

Moreover, instead of assigning entrepreneurship courses to pure academicians, they should be assigned to more experiential or entrepreneurial individuals, that is, individuals who have an extensive professional experience or are running their own businesses.

Secondly, upon studying certain *personal factors*, we found that the rewarding impact of EE with regard to EIs is higher for certain types of students, such as for the ones with a higher NAA than for those with a lower NAA, for females than for males, and for the ones with non-business majors than for those with business majors. Consequently, in order to foster entrepreneurship in Pakistan, particular efforts should be made by educators and policy makers alike to encourage these three groups of students to acquire EE. Specifically, with regard to females, a 'one size fits all' approach to curricula (Wilson et al., 2007) may not be appropriate, and gender-sensitive programs, especially with regards to building motivation, may be needed.

Lastly, we concluded that a university student's *social environment* can significantly influence their EIs. This finding has important implications for the country's policy makers. Since conventionally Pakistan's social systems have not encouraged or facilitated entrepreneurship as a preferred career option among its youth (Haque, 2011), meso and micro-level initiatives aimed at breaking the negative stereotypes traditionally affiliated with starting one's own venture, and improving the social acceptability of entrepreneurship as a career choice, should be launched.

8 Conclusions

Whilst a copious amount of literature has explored various antecedents of EIs, there has been little research that has examined the EE-EIs link, particularly in the context of developing countries such as Pakistan. Furthermore, thus far, no known study has sought to investigate person \times context interactions in Pakistan using moderation effects. This study, therefore, focused on exploring these research gaps. On the basis of our findings, we can conclude that:

- 1 EE is very important in influencing students' EIs within the context of other educational, social and personal variables.
- 2 The rewarding impact of EE with regard to EIs is higher for certain types of students, such as for the ones with a higher NAA than for those with a lower NAA, for females than for males, and for the ones with non-business majors than for those with business majors.
- 3 Social norms have a robust positive impact on students' EIs, which is in stark contrast to previous international research.

However, our study results do have certain limitations that are worthy of discussion. Firstly, it must be noted that this study was conducted in the context of only a single country, and further investigation in other socio-spatial contexts is required which will either confirm the generalisability of our model, or yield some intriguing differences between different socio-spatial contexts. Secondly, we used cross-sectional data. To empirically investigate the intention-behaviour link, future research should now use longitudinal data. Nonetheless, notwithstanding these limitations, we believe that we

have been able to make some valuable empirical and theoretical contributions to existing knowledge in the area of EIs.

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