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The Role of Perceived University Support in the Formation of Students' Entrepreneurial Intention

Saadat Saeed, Shumaila Yousafzai, Mirella Yani-de-Soriano, and Moreno Muffatto

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Abstract.

Entrepreneurship education is central to student entrepreneurship. Previous research has attempted to understand the role of entrepreneurship education in the formation of students' entrepreneurial intention and behavior, albeit in an isolated manner. Universities can support entrepreneurship in many ways, but it is important to measure students' perception of the support that they receive in order to understand the extent of such support and its impact on students. The current study proposed and tested an integrative, multi-perspective framework. We have hypothesized that the three dimensions of university support, i.e., perceived educational support, concept development support, and business development support, together with institutional support shape students' entrepreneurial self-efficacy. In turn, entrepreneurial self-efficacy and individual motivations constitute the fundamental elements of the intention to start a business. A sample of 805 university students took part in the study and data were analyzed using structural equation modelling (SEM). Our findings showed that perceived educational support exerted the highest influence on entrepreneurial self-efficacy, followed by concept development support, business development support and institutional support. Self-efficacy in turn had a significant effect on entrepreneurial intention. Individual motivations such as self-realization, recognition and role had an additional impact on intention. However, intention was not related to financial success, innovation and independence. The findings suggest that a holistic perspective provides a more meaningful understanding of the role of perceived university support in the formation of students' entrepreneurial intention. Practical implications are discussed.

Keywords: entrepreneurship education, motivations, institutional support, perceived university support, entrepreneurial intention

Introduction

The impact of entrepreneurship education, training and support has been recognized as one of the crucial factors in developing positive perceptions of competence for start-up firms (Hartshorn and Hannon 2005; Zhao, Seibert, and Hills 2005), the development of favorable attitudes toward self-employment (Krueger and Brazeal 1994), and related entrepreneurship preferences and intentions (Chen, Greene, and Crick 1998).

Despite the increasing interest in academic entrepreneurship and new venture creation by students, very little empirical research has identified entrepreneurship education and the support factors that can foster entrepreneurship among university students (Walter, Auer, and Ritter 2006). Furthermore, in spite of the growth in the number of entrepreneurship courses and curricula and the link between entrepreneurship education and entrepreneurial behavior (Galloway and Brown 2002; Lüthje and Franke 2003), student entrepreneurship figures still remain low (Kraaijenbrink, Groen, and Bos 2010).

Previous studies, which have attempted to examine the effectiveness of formal entrepreneurship education, have been inconclusive, perhaps due to the outcome measures they have used including student satisfaction and performance in the course, which may be insufficient indicators of educational effectiveness (Cox, Mueller, and Moss 2002). Interestingly, although self-efficacy has been rarely used as an outcome measure, one study by Peterman and Kennedy (2003) found that participation in an entrepreneurship program significantly increased the perceived feasibility (entrepreneurial self-efficacy) of starting a business, which implies that entrepreneurship education can enhance entrepreneurial intention. Kraaijenbrink et al. (2010) suggested that although universities can support entrepreneurship in many objectively measured ways, in order to understand the effect of such measures it was crucial to gauge the extent to which they could have an impact on students. This can be achieved by measuring students' perceptions of the university support that they receive or "perceived university support". In the remainder of this paper we have used "entrepreneurship education and support" and "perceived university support" interchangeably.

Although entrepreneurship education can increase entrepreneurial intention, it is not the only influence affecting it. Therefore, it is important to understand the process that underlies the emergence of entrepreneurial intention and behavior. Some scholars have focused primarily on the level of individual factors as the potential determinants of entrepreneurial intention. These factors include: demographic characteristics, the status of parents and grandparents, role models, entrepreneurial self-efficacy, locus of control, self-realization, independence, recognition, entrepreneurial experience, personality traits and subjective norms. Other researchers have focused on organizational factors, such as organizational culture and organizational norms (Louis, Blumenthal, Gluck, and Stoto 1989), university quality (Di Gregorio and Shane 2003), and the impact of entrepreneurship education on students' entrepreneurial intention (Souitaris, Zerbinati, and Allaham 2007). At the institutional level, research has focused on economic stability (McMillan and Woodruff 2002), capital availability (de Bettignies and Brander 2007), and reduced personal income taxes (Gentry and Hubbard 2000) as some of the important factors for entrepreneurial development.

Recognizing that these multi-level factors may interact with each other to synergize entrepreneurial intention, most researchers have treated them independently, rather than considering the effects of their potential inter-relations and inter-dependency. However, social science research expects a more holistic view to explain phenomena by taking into

account the inter-connections of various factors, rather than considering the impact of a single factor. Research has emphasized that although individual-level factors have some impact on entrepreneurial intention, it may be better to consider the impact of some contextual factors as well (Turker and Selcuk 2009). Following the argument of Ireland and Webb (2007) that a single perspective in behavioral studies offers an incomplete account of phenomena, our study takes a multi-perspective approach to assess the impact of entrepreneurship education.

This paper proposes the following questions: (1) How do students perceive the entrepreneurship education and support that they receive from their universities? (2) Does perceived university support have an impact on students' entrepreneurial self-efficacy? (3) How important is perceived university support in influencing students' entrepreneurial intentions within the context of other factors, such as institutional support and individual motivations? (4) How can universities be more effective in their provision of entrepreneurship education and support to their students? To answer these questions, we have developed a conceptual framework that reflects the role of entrepreneurship education within the context of other influences such as institutional support and individual motivations, rather than studying it in an isolated manner. This should permit a deeper and more meaningful analysis and understanding of the topic.

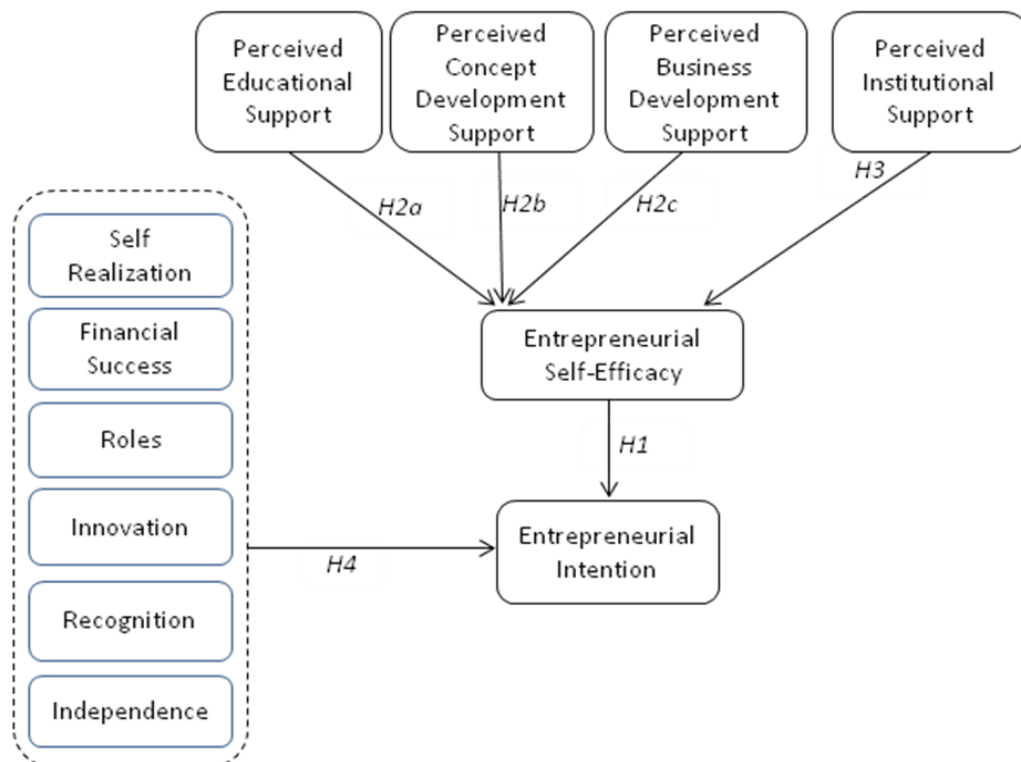
In our conceptual framework, entrepreneurial intention represents a university student's intent to start a new business (Krueger and Brazeal 1994). Such intention is a conscious state of mind that precedes action but directs attention toward the goal of establishing a new business (Bird 1988). In order to understand how this intention is formed, following Shapero and Sokol (1982), we aim to examine the impact of perceived desirability and perceived feasibility on entrepreneurial intention. Perceived desirability constitutes our individual-level perspective, comprising six individual motivation factors used by Carter, Gartner, Shaver, and Gatewood (2003): self-realization, financial success, role, innovation, recognition and independence. These factors differentiate individuals on the basis of how they discover, evaluate and exploit entrepreneurial opportunities. Perceived feasibility has been conceptualized as entrepreneurial self-efficacy (Chen et al. 1998). We propose that individuals with a sense of entrepreneurial self-efficacy may be drawn to the desirable opportunities and benefits of self-employment and thus they are likely to form intentions and goals for self-employment. Previous research indicates that self-efficacy is not a static trait, but rather that it can be changed (Hollenbeck and Hall 2004). These changes may come from targeted educational and institutional efforts. Therefore, we aim to examine whether there is a link between entrepreneurship education, institutional support and entrepreneurial self-efficacy.

Entrepreneurship education is the focus of our paper and constitutes our organizational-level perspective. Following Kraaijenbrink et al. (2010), we have conceptualized perceived university support by means of three separate but related constructs: perceived educational support, perceived concept development support and perceived business development support. In our framework we have integrated an institutional-level perspective by conceptualizing students' perception of the support that they receive from the government as perceived institutional support. This support refers to the policies, regulations and programs that the country has undertaken to support entrepreneurship (Turker and Selcuk, 2009). We have hypothesized that, in addition to perceived institutional support, and perceived educational support, perceived concept development support and perceived business development support would increase perceived feasibility, as measured by entrepreneurial self-efficacy.

The main contribution of the paper is to provide a better understanding of the role of entrepreneurship education and support and its impact on entrepreneurial intention. The aim of the study is to discover the extent of students' perceived university support and whether it affects their entrepreneurial self-efficacy, which in turn may have an impact on entrepreneurial intention. We examine this within the context of other influences, such as institutional support and individual motivations, which allow us to assess the relative importance of entrepreneurship education and support. There are few studies focuses on measuring the impact of entrepreneurship education. The current study fills a gap in the literature by measuring the impact of entrepreneurship education within an integrative, multi-perspective framework, thus providing a broader view of this topic.

Finally, the findings will help university managers and policy-makers to understand the effectiveness of current practices and initiatives, particularly in developing economies such as Pakistan. During the last decade, Pakistan has been trying to build its economic growth on the basis of educational policies. The Higher Education Commission (HEC) of Pakistan has recently developed the National Business Education Accreditation Council (NBEAC) to promote business education, particularly with the aim to stimulate entrepreneurship education and culture in Pakistani universities. Entrepreneurship has been selected by students as an elective subject during the final semester of their undergraduate programs. Nevertheless, the NBEAC seeks to promote entrepreneurship as a major field of study in higher education. This increasing focus on entrepreneurship education allows us to measure the impact of the new government initiatives on university students' entrepreneurial intention, thus making Pakistan a model context for our study. Our proposed research framework is presented in Figure 1.

Figure 1. Proposed Research Framework



Entrepreneurial Intention

Entrepreneurship is the process of venture creation and entrepreneurial intention is crucial in this process. Entrepreneurial intention identifies the link between ideas and action which is critical for understanding the entrepreneurial process (Bird 1988; Krueger and Carsrud 1993). According to Ajzen (1991), intention captures the degree to which people show their motivation and willingness to execute the desired behavior. Intention has also been defined as a state of mind that directs a person's attention (and therefore experience and actions) toward a specific object (goal) or path in order to achieve something (for example, becoming an entrepreneur) (Bird 1988). Intention has been shown to be the best predictor of planned behavior (Bagozzi, Baumgartner, and Yi 1989), particularly when that behavior is rare, hard to observe, or involves unpredictable time lags (Bird 1988; Krueger and Brazeal 1994). A new business emerges over time and involves considerable planning and thus entrepreneurship is exactly the type of planned behavior (Bird 1988) for which intention models are ideally suited. The objective of intention models is to examine the intent rather than the timing of business creation (Krueger, Reilly, and Carsrud 2000).

Previous research has proposed several conceptual models for understanding entrepreneurial intention, including the Entrepreneurial Event Model (Shapero and Sokol 1982); the Entrepreneurial Attitude Orientation (Robinson, Stimpson, Huefner, and Hunt 1991); the Intentional Basic Model (Krueger and Carsrud 1993); the Entrepreneurial Potential Model (Krueger and Brazeal 1994); and the Davidsson Model (Davidsson 1995). However, research has shown that there is little difference in the approaches taken by these models (Krueger et al. 2000). In the current study, our understanding of entrepreneurial intention has been guided primarily by two models: (1) Ajzen's (1991) Theory of Planned Behavior (TPB) and (2) Shapero and Sokol's (1982) model of Entrepreneurial Event (SEE). Although both models vary in terms of their underlying concepts, they provide comparable interpretations of entrepreneurial intention (Krueger et al. 2000).

Ajzen (1991) argues that intentions in general depend on the attitude toward the act, social norms, and perceived behavioral control. The attitude toward the act reflects an individual's assessment of the personal desirability of creating a new business. Subjective norms reflect an individual's perceptions of what important people in his or her life think about business creation. Finally, perceived behavioral control reflects an individual's perception of his or her ability to initiate a new business successfully. Interestingly, the domain of entrepreneurship had already provided a model quite similar to the TPB well before Ajzen formulated it. Shapero (1975) proposed that the entrepreneurial event (defined as initiating entrepreneurial behavior) depends on the presence of a salient, personally credible opportunity, which in turn depends on perceptions of desirability and feasibility. Shapero (1975) defined perceived desirability as the attractiveness (both personal and social) of starting a business, and perceived feasibility (both personal and social) as the degree to which an individual feels capable of starting a business.

The fact that two different scholars in two different academic areas produced highly similar models attests to the value of intention models. Krueger et al. (2000) tested the TPB and SEE, and found support for both models. They demonstrated that attitudes and subjective norms in the TPB model are conceptually related to perceived desirability in the SEE, while perceived behavioral control in the TPB corresponds with perceived feasibility in the SEE model. Considering that perceived behavioral control is largely synonymous with entrepreneurial self-efficacy (Boyd and Vozikis 1994), entrepreneurial self-efficacy would be the main indicator of perceived feasibility. Essentially, it can be concluded that perceived

desirability and perceived feasibility are the fundamental elements of entrepreneurial intention (Douglas and Shepherd 2002).

Perceived feasibility: entrepreneurial self-efficacy

If the perception that a new venture is feasible is a predictor of the intention to launch it, then it is critical to examine the key indicator of perceived feasibility: entrepreneurial self-efficacy. Self-efficacy is the academic term for the belief that one can execute a target behavior. It is firmly based in a person's self-perceptions of their skills and abilities (Bandura 1986). It reflects an individual's innermost thoughts on whether they have what is needed to perform a certain task successfully. Actual abilities only matter if a person has self-confidence in those abilities, and also the self-confidence that they will be able to convert those skills effectively into a chosen outcome (Bandura 1989). Evidence suggests that general self-efficacy is central to most human functioning and is based more on what people believe than on what is objectively true (Markham, Balkin, and Baron 2002). Research in this area has consistently emphasized the importance of perceived self-efficacy as a key factor in determining human agency (Bandura 1989), and has shown that those with high perceptions of self-efficacy for a certain task are more likely to pursue and persist in that task (Bandura 1992).

In the field of entrepreneurship, entrepreneurial self-efficacy has proved to be a remarkable predictor of entrepreneurial intention (Chen et al. 1998; Krueger et al. 2000). Boyd and Vozikis (1994, p. 66) defined entrepreneurial self-efficacy as “an important explanatory variable in determining both the strength of entrepreneurial intentions and the likelihood that those intentions will result in entrepreneurial actions”. Similarly, Krueger and Brazeal (1994) proposed that entrepreneurial self-efficacy constitutes one of the key prerequisites for the potential entrepreneur. Therefore, we hypothesize that:

H1. Entrepreneurial self-efficacy positively influences entrepreneurial intention.

In turn, entrepreneurial self-efficacy can be influenced by experience, vicarious learning, social persuasion, and support and personal judgments or physiological states, such as arousal (Boyd and Vozikis 1994; Krueger and Brazeal 1994). In addition, Peterman and Kennedy (2003) showed that exposure to entrepreneurship education programs increases entrepreneurial self-efficacy. Next, we discuss the role of perceived university support and perceived institutional support in shaping entrepreneurial self-efficacy.

Perceived university support and entrepreneurial self-efficacy. Previous research has recognized the value of entrepreneurship education and support in the development of favorable perceptions of competence for start-up firms (Hartshorn and Hannon 2005; Zhao et al. 2005). Entrepreneurship education has been associated with enhanced attitudes and intentions toward starting a new business (Chen et al. 1998; Krueger and Brazeal, 1994).

The development of entrepreneurial universities constitutes a widespread phenomenon across the world, which has attracted the attention of policy-makers. Entrepreneurial universities are valued because of their economic outputs (such as patents, licenses and start-up firms) and technology transfer mechanisms (Tijssen 2006). Furthermore, a significant amount of scholarship has considered universities as seedbeds for fostering entrepreneurial spirit and culture. Universities can play an important role in identifying and developing entrepreneurial traits and inclinations among students and making them capable of starting their own venture, thus effectively contributing to economic prosperity and job creation (Debackere and Veugelers 2005). It is, therefore, important for universities to position themselves as a hub of new venture creation by nurturing an entrepreneurial

environment and contributing substantially to the economy and society (Gnyawali and Fogel 1994).

Previous research has suggested that certain university support policies and practices can foster entrepreneurial activities among students, for example, technology transfer offices and faculty consultants (Mian 1996); university incubators and physical resources (Mian 1997); and university venture funds (Lerner 2005). Research has also shown that university students who took entrepreneurship courses had a greater interest in becoming entrepreneurs in comparison to others who did not take it (Kolvereid and Moen 1997). Upton, Sexton, and Moore (1995) reported that 40 percent of those who attended entrepreneurship courses had started their own businesses. It is clear that an effective entrepreneurship education program and the entrepreneurial support provided by universities are efficient ways of obtaining the necessary knowledge about entrepreneurship and motivating young people to seek an entrepreneurial career (Henderson and Robertson 2000).

However, despite the increasing number of entrepreneurship courses and the link between entrepreneurship education and entrepreneurial behavior (Galloway and Brown 2002; Lüthje and Franke 2003), student entrepreneurship figures still remain low (Kraaijenbrink et al. 2010). Wang and Wong (2004, p. 170) pointed out to the fact that the entrepreneurial dreams of many students are hindered by inadequate preparation: “their business knowledge is insufficient, and more importantly, they are not prepared to take risks to realize their dreams”. Timmons and Spinelli (2004) suggested that entrepreneurship education is effective when it enables participants to develop a higher capacity for imagination, flexibility and creativity, as well as developing the ability to think conceptually and perceive change as opportunity.

Empirical research attempting to identify university support factors that can foster entrepreneurship among university students have remained limited (Walter et al. 2006). Previous studies which have attempted to examine the effectiveness of formal entrepreneurship education have been inconclusive, perhaps due to the outcome measures that they have used, including student satisfaction and performance in the course, which may be insufficient indicators of educational effectiveness (Cox et al. 2002). Although self-efficacy has rarely been used as an outcome measure, Peterman and Kennedy (2003) found that participation in an entrepreneurship program significantly increased perceived feasibility (entrepreneurial self-efficacy) of starting a business. In addition, those who perceived that their entrepreneurship education was a positive experience showed higher scores of perceived feasibility than those who thought that it was negative. Therefore, entrepreneurial education can enhance entrepreneurial intention (Peterman and Kennedy 2003).

One way for an entrepreneurship education program to increase the entrepreneurial self-efficacy of students is to provide mastery experiences or “learning by doing”. This type of learning can give them more self-confidence in their abilities to perform specific future tasks that are perceived to be similar or related (Bandura 1992; Cox et al. 2002). Therefore, entrepreneurial self-efficacy can be developed through entrepreneurship education which provides students with elements such as the opportunity to conduct feasibility studies, and develop business plans, and to benefit from business simulation, case studies, guest speakers and meaningful apprenticeships (Cox et al. 2002). Another way for an entrepreneurial education program to increase the entrepreneurial self-efficacy of students is to have a supportive environment, for example, by offering resources such as a network of individuals to provide specific expertise in areas such as marketing or accounting, the inclusion of role models, and the provision of one-to-one support.

According to Chen et al. (1998), the design of an entrepreneurship education program should have a support system to increase students' entrepreneurial self-efficacy. This could include engaging students in "real-life" business situations to encourage risk-taking and innovation, as opposed to general management skills or more specific technical skills. Previous research has proposed that entrepreneurship-related support may give some people the confidence to initiate their own business venture (Kraaijenbrink et al. 2010). Most previous studies have attempted to explain students' entrepreneurial intent as a result of the education that they have received. Hatten and Ruhland (1995), for example, analyzed the effect of an entrepreneurship course on students' attitudes and concluded that entrepreneurship attitudes can be measured and changed. Similarly, other researchers have suggested that the attitude model of entrepreneurship has implications for entrepreneurship education programs, as attitudes are open to change and, therefore, can be influenced by educators and practitioners (Robinson et al. 1991; Souitaris et al. 2007; Wang and Wong 2004).

Kraaijenbrink et al. (2010) suggested that although universities can support entrepreneurship in many objectively measured ways, in order to understand the effect of such measures, it was crucial to gauge the extent to which they could have an impact on students. This can be achieved by measuring students' perceptions of the university support that they receive. Kraaijenbrink et al. (2010) proposed three aspects of perceived university support. First, as part of their traditional teaching role, universities can provide educational support by teaching students the general knowledge and skills that are needed to initiate a new venture. Second, considering their commercialization role, universities can also provide individual students or groups of students with a more targeted and specific support for starting their own firm. This targeted support can be of two types: concept development support and business development support. Concept development support can provide awareness, motivation and business ideas in the early stages of the entrepreneurial process, in which opportunity recognition and development take place (Shane and Venkataraman 2000). Business development support is typically given to the start-up firm rather than to individual students in the later stages of the entrepreneurial process.

In addition, Krueger and Brazeal (1994) suggested that entrepreneurship education should improve perceived feasibility of entrepreneurship by increasing the knowledge of students, building confidence and promoting self-efficacy. Therefore, it can be inferred that the entrepreneurship programs and related support provided by academic institutions can play an important role in fostering entrepreneurial self-efficacy among their students. Hence, we propose:

***H2a.** Perceived educational support positively influences entrepreneurial self-efficacy.*

***H2b.** Perceived concept development support positively influences entrepreneurial self-efficacy.*

***H2c.** Perceived business development support positively influences entrepreneurial self-efficacy.*

Perceived institutional support and entrepreneurial self-efficacy. Entrepreneurs do not exist in isolation and many social, cultural, economic and political factors may affect their entrepreneurial behavior. A country's public and private institutional structures establish the rules of the game for organizations and determine which specific skills and knowledge result in the maximum payoff (North 2005). While public institutions create laws, regulations and policies regarding government assistance for the promotion of entrepreneurship, private

institutions define the culture, norms, beliefs and expectations of this activity (Ingram and Silverman 2002). Previous research has found a correlation between a country's GDP per capita, national economic growth rate, and the level and type of entrepreneurial activity in the country (Bosma, Wennekers, and Amoros 2011). The positive relationship between economic growth and entrepreneurial activity has been demonstrated by means of different measures, including capital availability (de Bettignies and Brander 2007), economic stability (McMillan and Woodruff 2002), and reduced personal income taxes (Gentry and Hubbard 2000). These studies suggest that an individual's entrepreneurial intention is a reflection of the institutional structure and the economic and political stability of the country.

Entrepreneurship research indicates that institutional support is an important determinant of the entrepreneurial process. Previous studies have shown the significant impact that institutional support factors have on determining new directions for entrepreneurial activity, which lead to economic development (Sobel 2008). Baumol (1993) emphasized the role that the institutional environment plays in fostering entrepreneurial development by suggesting that productive entrepreneurship would be at low levels where the incentives supporting it are weak. This means that institutional structures are crucial as they provide the incentives for different types of economic activity. Some of the critical incentives that impact on the success and growth of entrepreneurial ventures include capital access, access to markets and availability of information (Basu 1998). Entrepreneurs who are setting up a new business face the obstacle of obtaining the necessary funds in a banking system where collaterals and track records are required (Cressey 2002). Similarly, studies on students have revealed that the lack of funds is a major barrier to entrepreneurship (Henderson and Robertson 1999; Robertson et al. 2003; Li 2007).

An institutional environment can use both tangible and intangible measures to support entrepreneurship activities. Intangible support measures include flexible and friendly credit conditions, venture capital availability, physical infrastructure, corporate physical assets, R&D laboratories, training opportunities and business plan competition. Intangible support measures include making human capital available and providing sufficient legitimacy for entrepreneurship. If individuals perceive that the institutional environment is supportive, they will be more confident in their ability to become entrepreneurs and thus their entrepreneurial self-efficacy would increase (Luthje and Franke 2003; Schwarz, Wdowiak, Almer-Jarz, and Breitenacker 2009; Turker and Selcuk 2009). Therefore, we propose:

H3. Perceived institutional support positively influences entrepreneurial self-efficacy.

Perceived desirability

Schumpeter (1934 p. 132) defined entrepreneurs as those individuals who attempt to reform or revolutionize the pattern of production by exploiting an invention or untried technical possibility for producing a new commodity or producing an old one in a new way. He further mentioned that these efforts require aptitudes that are present in only a small fraction of the population. It can be inferred from Schumpeter's definition that, in addition to a supportive organizational (entrepreneurship education) and institutional (government) environment, the success of entrepreneurial activity depends upon the attitudes, interests and values of the individuals who are likely to form a new venture (Bird 1988). Thus, the reasons that these potential entrepreneurs give for starting a business should have a significant influence on whether they would actually engage in entrepreneurial activity, that is, their entrepreneurial intentions (Ajzen 1991; Krueger and Brazeal 1994; Krueger and Carsrud 1993; Kolvereid 1996). According to the TPB, these reasons are salient beliefs which determine individuals' attitudes toward self-employment. Similarly, within the SEE framework, these reasons can be

identified as perceived desirability factors leading to the development of entrepreneurial intention.

Although a number of researchers have attempted to identify relevant reasons for new business formation, the specific individual motives that are consistently related to entrepreneurial intention have shown mixed results. For example, Scheinberg and MacMillan (1988) reported that the need for approval, the perceived instrumentality of wealth, the degree of community, the need for personal development, the need for independence and the need for escape are factors which have led individuals toward new firm formation. However, these motivational factors were not always supported in other studies (Stewart et al. 1999). Following a thorough review of the entrepreneurship literature and after careful consideration, we decided to represent perceived desirability by means of the six factors identified by Carter et al. (2003) as major reasons or motivations for starting a new venture, namely: self-realization, financial success, role, innovation, recognition and independence.

Self-realization refers to the motivations involved in pursuing self-directed goals (Carter et al. 2003). This measure corresponds to Birley and Westhead's (1994) need for personal development and McClelland's (1961) need for achievement. Individuals with a high level of self-realization are expected to show a greater willingness to engage in entrepreneurial activity because this provides them with challenges that are associated with goal achievement and personal development (Carree and Thurik 2005). Selecting an entrepreneurial career is no longer under-employment or a "mom and pop" establishment; it is a way to achieve a variety of personal goals (Kirchhoff 1996). A propensity toward self-realization will result in a higher level of entrepreneurial intention.

Financial success is described as an individual's desire to earn more money and achieve financial security (Carter et al. 2003). Previous research has shown mixed results for this construct. On the one hand, McQueen and Wallmark (1991) found that most of the founders of new ventures did not establish their companies to generate wealth, but rather to fulfil their goal of commercializing their technologies. Similarly, other researchers found that the prospect of making more money ranks low in entrepreneurs' stated motivations for founding their own business (Hamilton 1988). On the other hand, Scheinberg and MacMillan (1988) and Birley and Westhead (1994) both labelled financial success as perceived instrumentality of wealth and found it to be related to entrepreneurial intention. In addition, a high valuation of money was the second most important variable in Lynn's (1991) study. Therefore, financial success has been included in the current study in order to clarify these previous findings.

Role is the individual's desire to follow family tradition and emulate the example of others (Birley and Westhead 1994; Carter et al. 2003; Shane, Kolvereid, and Westhead 1991). Research has shown that individuals are attracted to role models who can help them to develop themselves further by learning new tasks and skills (Gibson 2004). It has long been acknowledged that role models may have a profound influence on career decisions (Kolvereid 1996; Krueger et al. 2000). Wernerfelt (1984) argued that individuals who obtain resources from successful entrepreneurial role models in their social network are more likely to choose an entrepreneurial career.

Innovation relates to an individual's desire to accomplish something new (McClelland 1961). It is often referred to as a primary motive behind entrepreneurial intention (Mueller and Thomas 2001) and has been shown to have a significant effect on venture performance (Utsch and Rauch 2000). Feldman and Bolino (2000) found that individuals with a strong desire for innovation were motivated to become self-employed because of the opportunity to

use their skills and be creative as well as to capitalize on a good business idea. Similarly, Shane et al. (1991) found that the opportunity to innovative and be at the forefront of new technology was frequently given as a reason for starting a business, although they labelled it “learning”.

Recognition describes an individual’s desire to gain status, approval and recognition from family, friends and the community (Carter et al. 2003). Manolova, Brush and Edelman (2008) defined recognition as an individual’s position relative to others in a given social situation. According to Gatewood (1993) recognition is a second-level outcome or reason for desiring to start a new venture. In our proposed framework, recognition corresponds to the measures “recognition” in Shane et al.’s (1991) new firm formation typology, and “need for approval” in the studies of Birley and Westhead (1994), and Schienberg and MacMillan (1988).

Independence describes an individual’s desirability for freedom, control and flexibility in the use of time (Carter et al. 2003; Birley and Westhead 1994; Scheinberg and MacMillan 1988). As a general rule, individuals requiring a strong need for independence seek careers with more freedom. They choose an entrepreneurial career because they prefer to make decisions independently, set their own goals, develop their own plans of actions, and control goal achievement themselves (Wilson, Kickul and Marlino 2004). Following the preceding discussion, we propose:

H4: *Perceived desirability (measured by self-realization, financial success, roles, innovation, recognition, and independence) positively influences entrepreneurial intention.*

Method

Sample and procedure

To ensure the variability and representativity of respondents, we selected universities in the largest province of Pakistan, Punjab. In Punjab we targeted Lahore, Faisalabad and Sahiwal, which are considered the educational hub in this region. First, we selected five universities on the basis of their provision of entrepreneurship education and whether they were registered with HEC and thus offered approved programs. Second, we contacted undergraduate students who had studied or were studying a course of entrepreneurship in those universities that had agreed to participate in our study.

One thousand questionnaires were distributed and 850 were returned, of which 45 were subsequently discarded. The final sample consisted of 805 participants. Of these, 547 were males (68%) and 258 females (32%). The average age was 21 years ($SD = 0.54$).

Measurement variables

Table 2 presents the scales used to measure the main variables. All the constructs were measured on a five-point Likert scale that ranged from (1) strongly disagree to (5) strongly agree, unless otherwise indicated.

Entrepreneurial Intention was measured with three statements to assess whether participants intended to start a new business. The first statement, “Have you ever seriously considered becoming an entrepreneur?” was adapted from Veciana, Aponte, and Urbano (2005) and was measured on a dichotomous scale of “yes/no”. The other two statements were adapted from Liñán and Chen (2009).

Perceived feasibility was measured through *entrepreneurial self-efficacy* by employing a task-specific scale from Chen et al. (1998). Given the multifaceted nature of the entrepreneurial process, the importance of using multi-item measures of entrepreneurial self-efficacy which cover different aspects of venture creation is widely recognized (Chen et al. 1998). Respondents were asked to indicate their skill level in 26 roles and tasks related to five main areas of entrepreneurship: marketing, innovation, management, risk taking, and financial control. The four factors hypothesized as having an impact of self-efficacy (perceived educational support, perceived concept development support, perceived business development support, and perceived institutional support) were measured as follows:

Perceived educational support was measured by means of a six-item scale developed by Kraaijenbrink et al. (2010), which measures students' perception of the traditional teaching role of universities, and included statements such as "my university offers project work focused on entrepreneurship".

Perceived concept development support was measured by means of a four-item scale developed by Kraaijenbrink et al. (2010), which measures students' perception of the support that the university can provide to students beyond teaching, and this would be at the early stages of the entrepreneurial process to help them with opportunity recognition. For example, it included statements such as "my university provides students with ideas to start a new business".

Perceived business development support was measured by means of a three-item scale developed by Kraaijenbrink et al. (2010), which measures students' perception of the support that the university can provide to the start-up firm rather than individual students in the later stages of the entrepreneurial process, for example, to help the new firm with financial resources. It included statements such as "my university provides students with the financial means to start a business".

Perceived institutional support was measured through a four-item scale developed by Turker and Selcuk (2009). The questions were related to the opportunities provided to entrepreneurs in terms of the ease or difficulty in taking loans from banks, the legal constraints of running a business, and the economic stability in Pakistan.

Perceived desirability was assessed by means of the following six factors identified by Carter et al. (2003): *Self-realization* (four items); *Financial Success* (four items); *Role* (three items); *Innovation* (two items); *Recognition* (two items); and *Independence* (two items).

Results

Assessment of measures

Prior to the estimation of the measurement model, both exploratory (EFA) and confirmatory factor analyses (CFA) were conducted to assess the convergent and discriminant validity, reliability and unidimensionality of factor structures. Structural equation modelling (AMOS version 18.0) was employed for the CFA and to test the structural models and multi-group moderator analysis by using the maximum likelihood estimation procedure.

Discriminant validity. Discriminant validity measures the extent to which constructs differ from each other. For discriminant validity to be judged adequate, the square root of the AVE for a given construct should be greater than the off-diagonal elements in the corresponding rows and columns. The inter-correlations and square root of AVE are presented in Table 1. These results suggest that each construct shared more variance with its items than with other

constructs. In addition, the correlation matrix provides no evidence of multi-collinearity among the variables as all the coefficients were within an acceptable range ($r = 0.16$ to $r = 0.73$) and none of them exceeded the cut-off point of 0.85 (Fornell and Larcker 1981). These analyses provide evidence of discriminant validity.

Convergent validity. As shown in Table 2, all items loaded significantly on their corresponding constructs with factor loadings ranging from 0.50 to 0.94, thus meeting the threshold of 0.50 set by Hair et al. (2006), and demonstrating convergent validity at the item level. In addition, Fornell and Larcker (1981) recommended assessing the convergent validity through the item reliability of each measure, the composite reliability (CR) of each construct and the average variance extracted (AVE). The reliability coefficients (Cronbach's alpha) for all the constructs were well above the threshold level of 0.70 (Nunnally and Bernstein 1994). Except for the newly developed scales by Kraaijenbrink et al. (2010), which showed somewhat lower reliabilities: perceived educational support ($\alpha = 0.60$), perceived concept development support ($\alpha = 0.65$), perceived business development support ($\alpha = 0.60$). However, in their original work the authors showed reliabilities around 0.90. To address this problem, we followed Hair et al.'s (2006) recommendation that the CR should be used in conjunction with SEM to address the tendency of the Cronbach's alpha to understate reliability. Nunnally and Bernstein (1994) recommended a value of 0.70 and higher for CR to be adequate. The CRs for the three Kraaijenbrink et al.'s (2010) variables ranged between 0.90 and 0.92, which indicates good reliability. The final indicator of convergent validity is the AVE, which measures the amount of variance captured by the construct in relation to the amount of variance attributable to measurement error (Fornell and Larcker, 1981). Convergent validity is judged to be adequate when AVE equals or exceeds 0.50. In addition, comparisons of the average variance extracted (AVE) by each underlying construct with its shared variance (Φ^2) and other constructs indicated that the measures exhibit discriminant validity, since, in each case, the AVE was greater than the proportion of the shared variance (Fornell and Larcker 1981). As shown in Table 2, the convergent validity for the proposed constructs used in the current study is adequate.

Finally, a test was performed to investigate the presence for common method variance. The initial EFA with oblique rotation of items measuring the ten constructs of interest produced ten factors with eigen values larger than one, which collectively accounted for 65 percent of the variance. The first factor accounted for 41 percent of the variance, which suggests that common method bias may not be a major concern (Podsakoff et al. 2003).

---INSERT TABLE 1 HERE---

---INSERT TABLE 2 HERE---

Testing the structural model (without moderator variables)

With our measurement model demonstrating adequate discriminant and convergent validity, reliability, and unidimensionality of measures, we tested the hypotheses through the structural model. The results of the structural model are presented in Table 3. The overall model fit statistics are within the recommended values, which suggest a good fit to the observed data and thus provide support to proceed with hypotheses testing. Our first hypothesis, H1, was supported, that is, entrepreneurial self-efficacy positively influenced entrepreneurial intention ($\beta = 0.47$; $p < .05$). The results showed a highly significant influence of perceived educational support ($\beta = 0.37$; $p < .01$), perceived concept development support ($\beta = 0.34$; $p < .01$), perceived business development support ($\beta = 0.32$; $p < .01$) and perceived institutional support ($\beta = 0.17$; $p < .01$) on entrepreneurial self-efficacy. The results explained

a substantial proportion of its variance (42%) thus providing support for H2 and H3, respectively. In H4, we proposed that the six perceived desirability factors (self-realization, financial success, role, innovation, recognition and independence) would be positively associated with entrepreneurial intention. The results, presented in Table 3, partially support this hypothesis. Out of the six variables tested, three showed no significant effect on entrepreneurial intention: financial success, innovativeness and independence. However, self-realization ($\beta = 0.37$; $p < .05$), role ($\beta = 0.30$; $p < .05$) and recognition ($\beta = 0.65$; $p < .01$) were shown to have a significant positive influence on entrepreneurial intention. Together with entrepreneurial self-efficacy, these three constructs explained a total of 64 percent of the variance in entrepreneurial intention. This result is very encouraging considering that typically most previous research using linear models has explained less than 40 percent.

---INSERT TABLE 3 HERE---

Discussion and conclusions

The main aim of this study was to discover how students perceived entrepreneurship education and support and whether this had an impact on their entrepreneurial self-efficacy, which in turn would influence their entrepreneurial intentions. We examined this proposition within the context of institutional support and individual motivations, which allowed us to assess the relative importance of entrepreneurship education and support. Overall, our results support our hypotheses.

As with a number of previous studies, the results in Table 3 showed the important role of students' entrepreneurial self-efficacy in the prediction of their entrepreneurial intention (Boyd and Vozikis 1994; Chen et al. 1998; Krueger et al. 2000) and its usefulness in representing perceived feasibility. They also reflected the importance of perceived organizational-level and institutional-level factors in influencing students' entrepreneurial self-efficacy. Organizational-level factors were represented by the three separate variables of perceived university support: perceived educational support, perceived concept development support and perceived business development support. Institutional-level factors were represented by perceived institutional support. Our results revealed that all these variables exerted a significant positive influence on students' entrepreneurial self-efficacy, which characterizes perceived feasibility. This suggests that self-efficacy is not a static trait, but rather that it can be changed (Hollenbeck and Hall 2004), which has implications for targeted educational and institutional efforts.

Our results have demonstrated the significant role of entrepreneurship education and support as students perceived the education and support that they received from their universities as the most important influence on their ability to become entrepreneurs. Peterman and Kennedy (2003) also found that participation in an entrepreneurship program positively affects perceived feasibility (entrepreneurial self-efficacy) of starting a business. Despite the link between entrepreneurship education and entrepreneurial behavior (Galloway and Brown 2002; Lüthje and Franke 2003), student entrepreneurship figures are still considered to be low (Kraaijenbrink et al. 2010). Previous research has suggested that entrepreneurship education should improve perceived feasibility of entrepreneurship by increasing the knowledge of students, building confidence and promoting self-efficacy (Krueger and Brazeal 1994). Timmons and Spinelli (2004) argued for a more demanding role for entrepreneurship education. They suggested that for entrepreneurship education to be effective it needs to enable students to develop a higher capacity for imagination, flexibility and creativity as well as developing the ability to think conceptually and perceive change as an opportunity.

More specifically, our findings showed that of the three measures of perceived university support, perceived educational support was the most important in developing students' entrepreneurial self-efficacy, followed by perceived conceptual development and perceived business development. Although students perceived that their university was helpful in providing them with the general knowledge and skills to initiate a new venture (educational support), they needed more targeted support in terms of concept development and business development. These results are consistent with those of Kraaijenbrink et al. (2010) and help to demonstrate the validity of the measures that they developed to assess perceived university support. These scales should enable universities to measure the impact of their provision of entrepreneurship education and support, thus providing a broader insight to help them address the specific needs of their students. Considering that most researchers agree that entrepreneurial perceptions and intentions can be enhanced by entrepreneurship education (Cox et al. 2002; Chen et al. 1998; Hatten and Ruhland 1995; Kraaijenbrink et al. 2010; Krueger and Brazeal 1994; Peterman and Kennedy 2003; Wang and Wong 2004), it is important to discuss the implications of our results for university managers and policy-makers.

The result indicating that perceived educational support was shown to be the most important variable in determining entrepreneurial self-efficacy is important. It suggests that the initiatives taken by the Higher Education Commission of Pakistan, such as the creation of the National Business Education Accreditation Council (NBEAC), seem to be effective. This implies that the institutional efforts to promote business education by focusing on stimulating entrepreneurial education and culture in Pakistani universities have been implemented by universities and are being well received by students in general. Perceived educational support showed the highest mean scores of university support ($M = 4.55$) which indicates that students were highly satisfied with the provision of general knowledge and skills to initiate a new venture, which includes programs, electives, project, internships, and conferences and workshops. The variety of these learning strategies is positive as it helps to build students' self-confidence (Bandura 1992; Cox et al. 2002). In addition to these strategies, we suggest that universities can increase students' entrepreneurial self-efficacy by means of providing an opportunity to conduct feasibility studies, develop business plans, and that students would benefit from business simulation, case studies, guest speakers, and long-term, meaningful apprenticeships (Cox et al. 2002).

However, while students seemed satisfied with traditional entrepreneurship learning, they required more support from their universities regarding both concept development and business development. This considers the commercialization role of universities and translates into providing individual students or groups of students with a more targeted and specific support for starting their own firm. As shown in Table 2, perceived concept development support had lower means than perceived educational support ($M = 4.13$). Therefore, universities should provide awareness, motivation and business ideas in the early stages of the entrepreneurial process, in which opportunity recognition and development take place (Shane and Venkataraman 2000). In addition, universities could provide start-up firms with business development support at the later stages of the entrepreneurial process. This support was perceived as the weakest by students ($M = 3.48$). This type of support includes providing students with the funding to start a new business, use the university's reputation to support them and serve as a lead customer for the new venture. This is important as previous studies have shown that the lack funding is a major barrier to student entrepreneurship (Henderson and Robertson 2000; Robertson et al. 2003). Therefore, it can be inferred that the

broader support provided by academic institutions, beyond their traditional teaching role, can play an important role in fostering entrepreneurial self-efficacy among their students.

In addition to perceived education support, institutional support had a highly significant effect on entrepreneurial intention ($\beta = 0.17$). However, this type of support was less important to students than university support ($\beta = 0.33$). This suggests that although the main focus of institutional support is on existing entrepreneurs, students are nevertheless aware of it as it might affect them in the future. This result is important as it means that the initiatives recently taken by the Higher Education Commission of Pakistan to promote business education, particularly focusing on stimulating entrepreneurial education and culture in Pakistani universities, are being well received by students in general. This finding supports previous research which argues that institutional factors are key to the development of entrepreneurs as a hostile institutional environment hinders individuals' willingness to engage in entrepreneurship activities (Luthje and Franke 2003; Schwarz et al. 2009; Turker and Selcuk, 2009).

The strong impact of individual motivation on students' entrepreneurial intention is an important finding. This indicates that the perceived desirability of starting a business is a fundamental element in the formation of entrepreneurial intention. Three factors exerted a significant influence on the formation of entrepreneurial intention: self-realization, recognition and role. No significant impact was found for financial success, innovation and independence. These findings are in line with previous studies which found that entrepreneurial intention is related to self-realization (Carter et al. 2003; Kolvereid 1996), recognition (Birley and Westhead 1994; Schienberg and MacMillan 1988; Shane et al. 1991), and role (Birley and Westhead 1994; Shane et al. 1991; Wernerfelt 1984). However, our results do not support previous studies which have found that the intention to be an entrepreneur is stronger for those with more positive attitudes toward innovation (Birley and Westhead 1994; Carter et al. 2003; Mueller and Thomas 2001; Schienberg and MacMillan 1988; Shane et al. 1991) and independence (Carter et al. 2003; Birley and Westhead 1994; Shane et al. 1991). Our finding that financial success is not significantly important to entrepreneurial intention is in line with some previous studies (McQueen and Wallmark 1991; Hamilton 1988), but not with others which found the opposite to be true (Birley and Westhead 1994; Carter et al. 2003; Lynn 1991).

However, the lack of support in the current study for two important influences on entrepreneurial intentions, namely, innovation and independence, needs further qualification. A possible explanation may be provided in light of the cultural context of the study. According to Hofstede (1980), Pakistan ranks high on power distance (PD), masculinity (MAS) and uncertainty avoidance (UA), but low on individualism (IDV). High PD means that individuals accept and expect that power in organizations and institutions will be unequally distributed, and that there would be strong hierarchies and control mechanisms. High MAS refers to traditional male values, such as income and recognition. In high UA, individuals are likely to avoid novel or unknown situations. Finally, low IND means that collectivism is valued and individuals exhibit long-term commitment and loyalty to their families and relationships, which in turn allows them less freedom and autonomy to pursue individual interests.

Considering Pakistan's low IND, high PD and high UA is helpful when trying to explain the poor results for innovation and independence. This reasoning has been supported by previous research, which has found that high rates of innovation were associated with high IND, low PD and low UA (Shane et al. 1991), and entrepreneurial activity was been

positively associated with high IND (Gupta et al. 2010; Hofstede 1980). Furthermore, Pakistan, as a collectivist society, places significant importance on “face” and so the potential loss of face from failure may also discourage innovativeness. This has been demonstrated in the Global Innovation Index published by INSEAD in 2012, which ranked Pakistan 133 out of 141 countries, which suggests very low levels of innovativeness. However, low IND in this society can help to explain the strong influence of the role factor on entrepreneurial intention. This result may be expected for a collectivist culture such as Pakistan where social ties are important for all members of society. Taking into account that this culture emphasizes conformity, the decision to select a career might be influenced by the individual’s family members and friends. However, the country’s high MAS means that Pakistan is characterized by values such as income and recognition, in which people “live in order to work” and there is emphasis on competition, achievement and success. Self-realization and recognition were shown to have strong effects on entrepreneurial intention, thus reflecting these cultural characteristics.

On the basis of our findings, we can answer the four questions we posed in this paper: (1) students have a positive perception of the entrepreneurship education and the support that they receive from their universities; (2) perceived university support has a significant impact on entrepreneurial self-efficacy. Students perceive educational support as the most important variable influencing their entrepreneurial self-efficacy, followed by concept development support, and business development support; (3) perceived university support exerts a much stronger impact on entrepreneurial intention than institutional support and individual motivations; (4) students are satisfied with the traditional entrepreneurship education that they receive, but they need more targeted support from their universities in terms of concept development and business development. Universities should then address these needs in order to be more effective.

In conclusion, we argue that entrepreneurship education is fundamental to student entrepreneurship. Therefore, to enhance student entrepreneurship, we suggest that universities should continuously measure their students’ perceptions of the support they receive, which allows them to assess the extent of their support and its impact on students. Our findings show that universities are perceived to be strong in their traditional teaching role, but they are falling short in their commercialization role. They can strengthen their provision by providing awareness, motivation and business ideas in the early stages of the entrepreneurial process and by offering business development support to the start-up. Entrepreneurship education is an important influence on entrepreneurial intention, but it is not the only one. Thus, we have proposed that the three-dimensional support of universities together with institutional support increases students’ perceived feasibility, as measured by entrepreneurial self-efficacy. In turn, entrepreneurial self-efficacy and perceived desirability, represented by individual motivations such as self-realization, recognition and role, shape entrepreneurial intention to start a business. Our findings suggest that this holistic approach provides a more meaningful understanding of the role of perceived university support in the formation of students’ entrepreneurial intention which can be employed in future research.

Limitations and directions for future research

Our study is subject to some limitations. First, like the vast majority of studies in the literature, our focus is on behavioral intention rather than actual behavior. Although the predictive validity of intention has been established in a general context, it has yet to be established in the entrepreneurial context. As a consequence, our study is unable to predict how many students will actually materialize their entrepreneurial intention. Second, we made

a selection of individual, organizational and institutional variables that were found to be most influential in predicting entrepreneurial intention through our extensive literature review, but other variables not included could be also important. Third, a longitudinal study could reveal a better understanding of whether entrepreneurial intention actually turns into entrepreneurial behavior. Finally, our study examines university students in Pakistani universities. Therefore, our findings are mostly generalizable to developing countries. Future research can conduct a comparative analysis between developing and advanced economies to understand relevant variations.

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Table 1. Correlations and Square Roots of Average Variance Extracted

Constructs	1	2	3	4	5	6	7	8	9	10	11	12	
1. Entrepreneurial Intentions	<i>0.96</i>												
2. Entrepreneurial Self-Efficacy	0.49*	<i>0.89</i>											
3. Perceived Educational Support	0.43*	0.63*	<i>0.88</i>										
4. Perceived Concept Development Support	0.38*	0.55*	0.63*	<i>0.89</i>									
5. Perceived Business Development Support	0.35*	0.53*	0.60*	0.58*	<i>0.93</i>								
6. Perceived Institutional Support	0.16*	0.31*	0.21*	0.21*	0.21*	<i>0.87</i>							
7. Self-Realization	0.43*	0.49*	0.35*	0.35*	0.35*	0.19*	<i>0.90</i>						
8. Financial Success	-0.09	0.04	-0.01	-0.01	-0.01	0.17*	0.01	<i>0.89</i>					
9. Role	0.40*	0.59*	0.39*	0.39*	0.39*	0.26*	0.44*	0.05	<i>0.91</i>				
10. Innovation	0.24	0.28*	0.28*	0.28*	0.28*	0.07	0.22*	0.02	0.29*	<i>0.89</i>			
11. Recognition	0.73*	0.57*	0.37*	0.37*	0.37*	0.20*	0.45*	-0.10	0.45*	0.26*	<i>0.87</i>		
12. Independence	0.37*	0.52*	0.38*	0.38*	0.38*	0.23*	0.44*	0.04	0.48*	0.23*	0.42*	<i>0.93</i>	
	<i>Mean</i>	3.51	3.75	4.55	4.13	3.48	3.44	3.70	3.0	3.80	3.97	3.52	3.92
	<i>Standard Deviation</i>	1.04	0.69	1.21	1.31	1.4	0.84	0.99	1.14	0.95	0.99	0.98	1.01

*Significant at $p < .01$

Diagonal values represented in italics are square roots of AVE; off-diagonal values are correlations between constructs.

Table 2. Results of Confirmatory Factor Analysis

<i>Construct (Items)</i>	Factor loading (t-values*)
Entrepreneurial Intention ($\alpha = 0.80$; $CR=0.90$; $AVE=0.93$; $\Phi^2=0.03-0.52$)	
1. Have you ever seriously considered becoming an entrepreneur? (Yes/No)	0.810 (84.163)
2. I will make every effort to start and run my own firm. ^a	0.820 (94.293)
3. I have got firm intention to start a firm someday. ^a	0.816 (86.577)
Entrepreneurial Self-Efficacy ^c ($\alpha = 0.92$; $CR=0.90$; $AVE=0.89$; $\Phi^2=0.03-0.52$)	
26 items were used. Respondents were asked to rate their skill level in marketing, innovation, management, risk-management, financial control.	0.835 (73.886)
Perceived Educational Support ^a ($\alpha = 0.6$; $CR=0.92$; $AVE=0.88$; $\Phi^2=0.02-0.42$)	
1. My university offers elective courses on entrepreneurship.	0.812 (88.692)
2. My university offers project work focused on entrepreneurship.	0.826 (81.260)
3. My university offers internship focused on entrepreneurship.	0.830 (90.886)
4. My university offers a bachelor or master study on entrepreneurship.	0.854 (89.345)
5. My university arranges conferences /workshops on entrepreneurship.	0.621 (80.110)
6. My university brings entrepreneurial students in contact with each other.	0.652 (78.907)
Perceived Concept Development Support ^a ($\alpha = 0.65$; $CR=0.90$; $AVE=0.89$; $\Phi^2=0.02-0.38$)	
7. My university creates awareness of entrepreneurship as a possible career choice.	0.788 (84.849)
8. My university motivates students to start a new business.	0.609 (66.566)
9. My university provides students with ideas to start a new business from.	0.812 (78.191)
10. My university provides students with the knowledge needed to start a new business.	0.826 (88.471)
Perceived Business Development Support ^a ($\alpha = 0.6$; $CR=0.92$; $AVE=0.93$; $\Phi^2=0.02-0.32$)	
11. My university provide students with the financial means to start a new business.	0.854 (69.541)
12. My university use its reputation to support students that start a new business.	0.621 (75.540)
13. My university serve as a lead customer of students that start a new business.	0.652 (73.823)
Perceived Institutional Support ^a ($\alpha = 0.80$; $CR=0.82$; $AVE=0.75$; $\Phi^2=0.04-0.45$)	
1. In Pakistan, entrepreneurs are encouraged by an institutional structure including private, public, and non-governmental organizations.	0.605 (75.297)
2. Pakistani economy provides many opportunities for entrepreneurs.	0.683 (84.468)
3. Taking bank loans is quite difficult for entrepreneurs in Pakistan. (R)	0.589 (92.943)
4. Pakistani state laws are averse to running a business. (R)	0.509 (92.943)
Self-Realization ^b <i>To what extent is the following reason important to you in establishing a new business:</i> ($\alpha = 0.78$; $CR=0.84$; $AVE=0.81$; $\Phi^2=0.03-0.38$)	
1. To challenge myself.	0.835 (84.235)
2. To fulfil a personal vision.	0.720 (78.231)
3. To grow and learn as a person.	0.701 (76.325)
4. To lead and motivate others.	0.781 (81.254)
Financial Success ^b <i>To what extent is the following reason important to you in establishing a new business:</i> ($\alpha = 0.75$; $CR=0.78$; $AVE=0.79$; $\Phi^2=0.15-0.25$)	
1. To earn a larger personal income.	0.948 (71.258)
2. To give myself, my spouse and children financial security.	0.731 (65.320)
3. To have a chance to build great wealth/high income.	0.746 (81.269)
4. To build business my children can inherit.	0.680 (78.362)
Role ^b <i>To what extent is the following reason important to you in establishing a new business:</i> ($\alpha = 0.80$; $CR=0.87$; $AVE=0.83$; $\Phi^2=0.07-0.30$)	
1. To continue a family tradition.	0.701 (72.356)
2. To follow example of a person I admire.	0.710 (78.246)
3. To be respected by my friends.	0.670 (80.234)
Innovation ^b <i>To what extent is the following reason important to you in establishing a new business:</i> ($\alpha = 0.74$; $CR=0.80$; $AVE=0.80$; $\Phi^2=0.10-0.35$)	
1. To be innovative at the forefront of technology.	0.832 (87.390)
2. To develop an idea for a product.	0.726 (80.236)
Recognition ^b <i>To what extent is the following reason important to you in establishing a new business:</i> ($\alpha = 0.84$; $CR=0.87$; $AVE=0.76$; $\Phi^2=0.12-0.47$)	
1. To achieve something/ get recognition.	0.839 (77.230)
2. To gain a higher position for myself.	0.849 (73.258)
Independence ^b <i>To what extent is the following reason important to you in establishing a new business:</i> ($\alpha = 0.90$; $CR=0.92$; $AVE=0.86$; $\Phi^2=0.09-0.18$)	

1. To get greater flexibility for personal life. 0.777 (75.361)
2. To be free to adapt my approach to work. 0.614 (83.697)

Model Fit Statistics:

$\chi^2_{(94)} = 612.50$ ($p = .036$); RMSEA = 0.046; GFI = 0.95; NFI = 0.95; NNFI = 0.97; CFI = 0.98; TLI = 0.85

(R) reversed coding; α = Cronbach's alpha, CR = composite reliability, and AVE = average variance extracted.

*Significant at $p \leq .01$

^a 5-point Likert Scale (1) strongly disagree (5) strongly agree

^b 5-point Likert Scale (1) to no extent (5) to a very great extent

^c 5-point Likert scale (1) = None, (2) = Basic, (3) = Competent, (4) = Advanced, (5) = Expert

Table 3. Results of the Structural Model

Hypothesis	Hypothesized Path	Standardized Estimates	Results
H1	Entrepreneurial Self-Efficacy → EI	0.47*	Supported
H2a	Perceived Educational Support → ESE	0.37**	Supported
H2b	Perceived Concept Development Support → ESE	0.34**	Supported
H2c	Perceived Business Development Support → ESE	0.32**	Supported
H3	Perceived Institutional Support → ESE	0.17**	Supported
H4a	Self-Realization → EI	0.37*	Supported
H4b	Financial Success → EI	-0.02	Not Supported
H4c	Role → EI	0.30*	Supported
H4d	Innovativeness → EI	0.20	Not Supported
H4e	Recognition → EI	0.65**	Supported
H4f	Independence → EI	0.18	Not Supported
Model Fit Statistics:			
$\chi^2_{(94)} = 612.50$ ($p = .036$), RMSEA = 0.046, GFI = 0.95, NFI = 0., NNFI = 0.95, CFI = 0.98, TLI = 0.85			

**Significant at $p < .01$; *Significant at $p < .05$

EI = Entrepreneurial Intention; ESE = Entrepreneurial Self-Efficacy