

An investigation of the relationship between proactive personality and entrepreneurial intentions using PLS-SEM among potential entrepreneurs in Pakistan

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Abstract: This study attempts to investigate the role of proactive personality in fostering students' Entrepreneurial intentions by adding the mediator of self-efficacy and moderator of innovativeness. Data has been taken from students enrolled in universities of Pakistan; who have studied entrepreneurship course and not yet formulated any business. Response has been obtained from 350 respondents selected through stratified sampling technique. The partial least squares (PLS) technique was applied to measure the model by using Smart PLS software. Structural equations method (SEM) has been used to test the hypothesis. Results suggest that there is positive significant relationship between Proactive personality and entrepreneurial intentions. Further, self-efficacy act as mediator between the relationship of Proactive personality and entrepreneurial intentions. However, innovativeness does not moderate between the relationship of Proactive personality and entrepreneurial intentions. Further, discussion and implications are elucidated.

Key words: *Entrepreneurial intentions; Proactive personality; Self-efficacy; Innovativeness; Entrepreneurship*

1. Introduction

The academia promotes the idea of entrepreneurship as an intervening catalyst of creating self-employment to lessen the dependence on employment. This has been cited by the large number of literature available on enterprise, entrepreneurship and business creation. Education and entrepreneurship are positively associated with each other (Fayolle, Gailly, & Lassas-Clerc, 2006; Gorman, Hanlon, & King, 1997; Harry Matlay et al., 2013; Henry, Hill, & Leitch, 2003; Oosterbeek, Van Praag, & Ijsselstein, 2010; Peterman & Kennedy, 2003; Raposo, Ferreira, do Paço, & Rodrigues, 2008; Von Graevenitz, Harhoff, & Weber, 2010; Wilson, Kickul, & Marlino, 2007). It is suggested by (Kuratko, 2005) that entrepreneurship, or its obvious aspects are learnt. Precisely, it is believed that entrepreneurship education can increase Entrepreneurial intentions (EI) among students (Nabi, Holden, & Walmsley, 2010; Pittaway & Cope, 2007).

It is equally important in both developed and developing countries to endorse entrepreneurship. Less developed countries can reboot economy and trouble-shoot the economic and social problems. So, issue arises how countries and education sector can help youngsters to become entrepreneurs? The answer lies in the knowledge of components related to entrepreneurial intention in varied cultural settings. Individual's behavior is preceded by Entrepreneurial intention so, it is assumed that EI has strong predictive ability for entrepreneurship

(Brush, Manolova, & Edelman, 2008; Davidsson, 1995; Fishbein & Ajzen, 1977; Katz & Gartner, 1988; Krueger, Reilly, & Carsrud, 2000; Shook, Priem, & McGee, 2003). This view is supported by the theoretical framework of planned behavior that finds behavioral intent as an instant contributing factor of planned behavior (Fishbein & Ajzen, 1977). Consequently, identifying which factors contribute in forming the EI is a notable debate in entrepreneurship domain. Entrepreneurial intention is defined as one's idea or readiness to create an enterprise and gaining much popularity among social researchers (Edelman & Yli-Renko, 2010; Krueger et al., 2000; Shook et al., 2003).

Globally, entrepreneurship is considered as feasible substitute of employment among business students. There are a number of explanations for this view. Firstly, there are more chances of entrepreneurial success for educated personnel than others. Academia and practitioners highlighted the role of education in enterprise development (Kennedy & Drennan, 2001). Secondly, in highly competitive era, organizational structural changes threatens the lucre of job benefits in large size organizations therefore, creating the demand for entrepreneurs than employees (Franke & Lüthje, 2004; Kolvereid, 1996b). This is particularly essential in Pakistan (which is now considered to be the sixth largest populated country in the world, WPP, 2009) where organizations are restructuring and people are facing layoffs issues. Thirdly, unemployment rate among students in developing countries has been increasing during previous years. Unemployment rate in Pakistan is 5.9 in January 2016 (Pakistan bureau of statistics) which is estimated by financial

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analyst to rise in the next coming years. Increasing unemployment is driving high crime rates in Pakistan (Saboor, Sadiq, Khan, & Hameed, 2016). It is also producing other unwanted social and societal issues for instance; stealing, robbery, suicide, killing and a risk to the safety countrywide. These crime have negative impact on nation as well as economy condition. (Kamran, Shujaat, Syed, & Ali, 2014). In these dismal days, the universities in Pakistan, especially the ones that are targeted in this study must have to step forward to train their graduates to become entrepreneurs. Such entrepreneurs may come in the market with innovative ideas and create small and medium sized enterprises that will not only provide jobs for unemployed graduates but will also positively contribute towards economy development.

Factors affecting EI e.g., personality traits, attitudes toward entrepreneurship, and social environment have attracted the attention of scholars widely (Brandstätter, 2011; Davidsson, 1995; Franke & Lüthje, 2004; Segal, Borgia, & Schoenfeld, 2005; E. R. Thompson, 2009) personality characteristics on decision-making process (Bonnert & Furnham, 1991; Wahrig, Krämer, & Zimmermann, 1980). A common inquiry was to identify the determinants of EI among school/university students. Nevertheless, deep investigation is required to unfold the path ways of entrepreneurial intent as it is still in its infancy stage and researchers emphasized the need to investigate further as little is known regarding effect of personality type. According to (Altınay, Madanoğlu, Daniele, & Lashley, 2012) based on the scholars suggestion (Mueller & Thomas, 2001; Nabi, Liñán, Iakovleva, Kolvereid, & Stephan, 2011), variety of situational and personality related components should be further examined to reach more reliable answers of the questions raised in entrepreneurship domain.

The objective of the current research is thus to find the predecessors and determinants of entrepreneurial intentions among Pakistani youth. It adopts personality traits perspective to examine the entrepreneurial intentions which has yielded contradictory findings and subject to criticism due to its predictive ability Shook et al. (2003) (de Janasz, de Pillis, & Reardon, 2007; Hisrich, Langan-Fox, & Grant, 2007). To increase the predictive ability of entrepreneurial traits to entrepreneurial intentions, this paper investigates the relationship between Proactive personality and entrepreneurial intentions by mitigating considerable attention to moderating (innovativeness) and mediating variables (self-efficacy).

2. Literature review

2.1. Proactive personality

Proactive personality refers as comparatively one's consistent temper towards proactive behavior (Bateman & Crant, 1993). Studies on proactive behavior proclaim that the proactive personality

demonstrate variant facets of proactive behavior and initiative (Crant, 2000). proactive personality differentiate individual on the basis of their decision power of changing their surroundings. In fact, proactive behavior is an inherent temperament or inclination to initiate steps while, proactive personality is narrated as a person who is not limited due to external factors (Bateman & Crant, 1993). Proactive people have strong desire to control and effect their situation (Crant, 1996). Proactive personnel are long term oriented, can foresee circumstances, and handle problem before they arises (Frese & Fay, 2001). Proactive personality who score high on proactivity scale can explore prospects and endure till they make desirable modifications in the environment (Crant, 1996).

2.2. Entrepreneurial intentions

Intentions are predecessors of individual's behavior and behavior is deliberate effort to reach some definite goal (Bird, 1988; Krueger et al., 2000). Entrepreneurial intention is described as individual's plan to create new enterprise in coming future (Bird, 1988; E. R. Thompson, 2009). Entrepreneurship is defined as an inherent behavior (K. E. Thompson & Panayiotopoulos, 1999), whereas others (Robinson et al., 1991; Solomon, Duffy, & Tarabishy, 2002) suggests it as an attitude which may be acquired over period of time. The decision to become entrepreneur is dependent on one's own situation for instances, Family background, studies level, positive or negative perceptions regarding venture creation prospects, economy & environment situation (E. R. Thompson, 2009).

2.3. Proactive personality and Entrepreneurial intentions

The construct of entrepreneurial intentions has gained popularity among psychologists and researchers recent years. Yet, it is still unclear which approach should be used for identifying determinants of EI since each emphasizes on varied field and features (Singh Sandhu, Fahmi Sidique, & Riaz, 2011). Previous studies, in the area of entrepreneurship was on the presence of particular personality characteristics for example, big five personality traits (extraversion, agreeableness, openness, conscientiousness, and neuroticism), the need for achievement, risk taking propensity, innovation focus, need for power, communication, and decision-making skills. Possession of these skills determine the ability of becoming entrepreneur (Cox & Jennings, 1995; McClelland, 1987). Afterwards, scholars have investigated the role of other personal demographic factors e.g, age, gender difference, qualification, job experience, religion, family business entrepreneurship education etc. (Robinson, Stimpson, Huefner, & Hunt, 1991). Although these variables may predict someone's intentions yet researchers (Ajzen, 1991; Shapero & Sokol, 1982)

have critiqued its predictive ability due to its method and theoretical approach.

The construct of proactive personality can be applied to the field of entrepreneurship as entrepreneurs have to proactively scan environment and find emerging prospects for creating new enterprises (Rauch & Frese, 2007). It is very obvious that people who have proactive personality will attempt to seek entrepreneurial ventures. Results have demonstrated that proactivity has an impact on entrepreneurial intentions (Crant, 1996). Proactivity even can act like a measuring instrument to distinguish among personalities for instance, to determine who can be more suitable to entrepreneurship.

Rauch and Frese (2007) have empirically proved that personality has significant role in determining entrepreneurial intentions. In order to see which personality is more relevant in creating entrepreneurial intention, their study particularly investigates the role of the traits of proactive personality, personal initiative and perseverance, in entrepreneurial activities. Based upon above discussion, following hypothesis is articulated.

H1: There is positive significant relationship between proactive personality and entrepreneurial intentions

2.4. Proactive personality and self- efficacy

Few years back, scholars of proactive personality (Bateman & Crant, 1993; Crant, 2000; Parker & Collins, 2010) and Job Demands-Resources (JDR) Model (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) suggested that proactive people tend to possess self-efficacy. Highly proactive personality exerts an increased level of self-efficacy in their professional career (Seibert, Kraimer, & Crant, 2001). Positive relation exist between proactive personality and self-efficacy (Li, Liu, Liu, & Wang, 2016). However, there is less literature available that study the link between proactive personality and self-efficacy. From academic point of view, individual traits are unchanging and comparatively constant whereas, self-efficacy is flexible and can vary (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009). Researchers (Griffin, Neal, & Parker, 2007; Parker & Collins, 2010) have advocated that proactive personalities are characterized by self-initiation, change orientation, and future orientation. Such individuals are not limited by external variables. Consequently, they can solve problems in a better way to gain improved work outcomes than the passive individuals. According to literature on proactive personality (Crant, 2000; Parker & Collins, 2010), proactive individual persuasively search for the relevant information and prospects. Self-efficacy can be assumed as a significant construct in the study of proactive personality (Bakker, Tims, & Derks, 2012; Frese & Fay, 2001).

Proactive people experience positive trait and definite work behavior, e.g., self-confidence, self-efficacy, and work engagement (Crant, 2000; Seibert,

Crant, & Kraimer, 1999) that subsequently drive desirable outcomes (Hsieh & Huang, 2014; Parker & Collins, 2010). Some others have claimed that proactive personality may effect work behavior and outcomes through self-efficacy (Frese & Fay, 2001; Kanfer, 1992).

More recently, researchers have explored other forms of self-efficacy. They (Lin, Lu, Chen, & Chen, 2014) cited that proactive people may influence his academic self-efficacy. Proactive personality is logically considered as a predecessor of creative self-efficacy (Li et al., 2016).

H2: There is positive significant relationship between Proactive personality and Self-efficacy.

2.5. Self-Efficacy and entrepreneurial intention

The concept of Self-efficacy is rooted in social cognitive theory (Bandura, 1997). This theory describes that individual behavior is a combination of environmental effect on intrapersonal and interpersonal behavior (Bandura, 2011, 2012). The interplay among these forces outline individual's view of his own capability of doing some task, behavior in particular circumstances and his anticipation on the results of his behavior (Bandura, 1999). The intensity of the effect of self-efficacy on individual behavior enforces researchers to implement it in different behavioral areas for example, entrepreneurship which increases its versatility. Self-efficacy effects the one's decision making although other factors exist such as availability of options, exertions incurred, determination and attainment of results (Bandura, 1997; Dwyer & Cummings, 2001). It influence one's confidence to complete present work and guide for future performance (Bandura, 2000). Career selection is a difficult task and demand greater level of self-efficacy (Betz & Hackett, 2006; Bryant, 2007; Schjoedt & Shaver, 2007). Self-efficacy plays vital role in deciding among the various career choices that require one's deep insight (Bandura, 2012, 2013). Self-efficacy has strong effect on varied facets during establishment of innovative enterprise. Entrepreneurial self-efficacy is defined as individual's perceived capabilities to effectively execute the activities of an entrepreneur and his belief on the outcomes of developing an enterprise (Barbosa, Kickul, & Smith, 2008; BarNir, Watson, & Hutchins, 2011; C. C. Chen, Greene, & Crick, 1998; McGee, Peterson, Mueller, & Sequeira, 2009). Investigations provide evidences that self-efficacy is powerful individual aspect that may impact one's entrepreneurial intention (Carr & Sequeira, 2007; Lans, Biemans, Mulder, & Verstegen, 2010; Zhao, Seibert, & Hills, 2005). Bandura (2000) showed that individuals who demonstrate greater sense of self-efficacy are likely to assume that they may bring change, and they can govern their own thinking process and activities.

Markman, Balkin, and Baron (2002) commented that general self-efficacy has strong link with the field of entrepreneurship, consequently, this has

been empirically tested with the concept of entrepreneurial intentions. Piperopoulos and Dimov (2015) demonstrated that according to practice greater sense of self-efficacy lead to decreased level of entrepreneurial intention. Similarly, Wang, Chang, Yao, and Liang (2016) described that self-efficacy has significant impact on entrepreneurial intention. Thus, past researches proved that there is positive association of Self-efficacy with entrepreneurial intention (C. C. Chen et al., 1998; Liñán, Rodríguez-Cohard, & Rueda-Cantuche, 2005; Zhao et al., 2005); Zhao et al., 2005).

C. C. Chen et al. (1998) further explained that one's self-efficacy level effect his career choice in a way that higher the level of self-efficacy the greater the capacity to cope up with the challenges and ambiguities arises in entrepreneurial environment than others with lower self-efficacy. These authors demonstrated that construct of self-efficacy is explicitly connected with entrepreneurial actions thus can be used as powerful determinant of entrepreneurial intention. Measure of self-efficacy can be applied to differentiate between entrepreneurs and those who are not (Markman, Baron, & Balkin, 2005).

H3: There is positive significant relationship between self-efficacy and entrepreneurial intentions.

2.6. Self-Efficacy as a mediator of proactive personality and EI relationship

Motivational factors mediate between the individual traits and entrepreneurial outcomes (e.g., Baum, Frese, & Baron, 2007; Baum & Locke, 2004; Herron & Robinson, 1993; Rauch & Frese, 2007). Yet, very few has investigated the role of mediators in the area of entrepreneurship (Rauch & Frese, 2007). Similarly, Birley, Cromie, and Myers (1991) explained that study on the combined effect of proactive personality and entrepreneurial self-efficacy on EI are scarce. To name a few are, empirical testing by (Zhao et al., 2005), they have confirmed that entrepreneurial self-efficacy mediates between the link of risk propensity (individual trait) and entrepreneurial intention. Self-efficacy is partially mediated between the relationship of Personality traits and EI (Wang et al., 2016). Additionally, (Miao, 2015) has found that there is full mediation of Entrepreneurial self-efficacy in the relationship between EI and proactive personality. While self-efficacy is a motivational construct (Chen et al., 1998; Fleischhauer et al., 2010; Sadowski & Cogburn, 1997), it is logical to assume that self-efficacy will mediate the association between individual traits and entrepreneurial intentions which is already described by previous studies.

Hence, the current study hypothesized following on the basis of above literature.

H4: Self-efficacy mediates the relation between Proactive personality and entrepreneurial intentions

2.7. Innovativeness as a moderator of proactive personality-EI relationship

Earlier researches report that personality determinants of EI have presented widely dissimilar responses, emphasizing the urge to identify moderating variables between their relationship (Brandstätter, 2011; Schlaegel & Koenig, 2014; Zhao & Seibert, 2006). Thus, this study attempts to empirically test the moderators between the relationship of proactive personality and EI.

Innovation can be defined as the process of altering thoughts and information into new worthy form via creative thinking. Innovativeness refers to entrepreneur's trait of creative thinking, exploring prospects & horizons to implement unique ideas to add value by introducing new products and services (M. H. Chen, 2007; Gupta, MacMillan, & Surie, 2004). Innovativeness drive people to explore novel strategies for business accomplishments (Robinson et al., 1991).

Innovativeness is strongly associated with EI (Krueger & Carsrud, 1993; Thomas & Mueller, 2000). Entrepreneurs always attempts to find different ways of production", emphasizing innovativeness as centric factor of entrepreneurship and an integral entrepreneurial trait (Schumpeter, 1934). Innovation is used as special instrument to do business related activities (Drucker, 2014). Innovativeness ability forces individual's intention to introduce new business in unique pathways (Carter, Gartner, Shaver, & Gatewood, 2003). Innovativeness is the fundamental aspect in initiating any business (Hmieleski & Corbett, 2006; Shane, Kolvareid, & Westhead, 1991) (Altinay et al., 2012). Many scholars suggest chances to implement innovation as main purpose of creating a venture (Blaise, Toulouse, & Clement, 1990; Scheinberg & MacMillan, 1988). According to Schumpeter (1990), innovation is such an integral factor of entrepreneurship that an entrepreneur can be truly views as an innovator. There is positive significant relation between innovativeness and entrepreneurial intention (Chye Koh, 1996; Gurel, Altinay, & Daniele, 2010; Gürol & Atsan, 2006; Mueller & Thomas, 2001).

To summarize, prior findings, characteristic of innovativeness is common among entrepren; 8eurs. However, some scholars have demonstrated contradictory findings while empirically testing this in variant cultural contexts. Innovation is not found to be significantly related to intentions to start a venture in the sample entrepreneurs from Great Britain, New Zealand and Norway; Turkish students and secondary school students (Shane et al., 1991); (Nabi, Liñán, İlhan Ertuna, & Gurel, 2011); (Harry Matlay et al., 2013). Although the students under analysis present a high degree of innovativeness but does not find positive relation. (Harry Matlay et al., 2013) advocates that innovativeness might be a particular trait but not the prime motive of entrepreneurship. Though their study uses teenage students as the sample who demonstrated greater level of innovativeness yet did not find strong

relation between innovativeness and intentions to start business. So, these authors associate ability to innovate with their age group not certainly with entrepreneurial intentions. This led us to believe that further investigation is required regarding clarity between the innovativeness-EI relations. Since, in order to bring innovation, one need to get others assistance and opinion. People have to win management endorsement and agreement on their creative plans. This in turn, forces them to meet people proactively (Crant, 2000). Thus, it may be assumed that innovativeness can act as moderator between Proactive personality and entrepreneurial intentions relationship.

This study attempts to fill the gap due to absence of sufficient studies on moderating variable and minimize the ambiguity and confusion exist between innovativeness and entrepreneurial intentions relationship, following hypothesis is formulated.

H5: There is positive significant relationship between innovativeness and entrepreneurial intentions.

H6: Innovativeness moderates the relation between Proactive personality and entrepreneurial intentions

3. Research model

Model represented in Fig. 1 is developed on the basis of above literature. The current study is underpinned with two models namely, Shapero's entrepreneurial event model (SEE) Shapero (1982) and the Ajzen (1987) theory of planned behaviour (TPB). Primarily, three theoretical models have been elucidated in connection with entrepreneurial intention (Shook, Priem, & McGee, 2003), namely;

- (1) model of implementing entrepreneurial ideas (IEI) Bird (1988);
- (2) model of the entrepreneurial event (SEE) Shapero (1982); and
- (3) theory of planned behavior (TPB) Ajzen (1987).

PB is one of pioneer models that narrates intention as an instantaneous predecessor of behavior (Ajzen, 1991, 2011). This model has strong prediction power and examined by earlier researchers (Kautonen, Gelderen, & Fink, 2015; Kolvereid, 1996a; Krueger et al., 2000). TPB is unique and presents broader perspective to determine the entrepreneurial intention of an individual by taking individual and social aspects as well (Krueger et al., 2000). SEE model, infers that entrepreneurial intentions are formed primarily due to three factors such as perceived desirability, perceived feasibility, and propensity to act. The perceived desirability shows the extent to which one is powered by the desire of being entrepreneur. The perceived feasibility determines one's capability of initiating a venture. This factor of SEE has laid basis from the notion of self-efficacy Bandura's (1977) which directly not suggests what actually individual

can perform but with the one's belief in his own abilities to successfully performing the tasks within the given resources. The propensity to act explicate individual inclination towards taking initiative and action. SEE considers aforesaid factors as antecedents of entrepreneurial intentions while adopting narrow personality trait perspective. The current research takes insight from SEE model because of three main reasons. First, SEE model discuss intention and behaviour particularly from entrepreneurial perspective in comparison to Ajzen's TPB that highlight individual behaviour and attitude in general context. Second, two constructs of this study are self-efficacy & proactive personality; which are synonyms with the SEE' elements of perceived feasibility, and propensity to act. Third, SEE Theory provides solid theoretical base through which individual traits of proactive personality and innovativeness along with self-efficacy can be linked to entrepreneurial intentions.

4. Research methodology

4.1. Sample and data collection

The sample size of this study was 350 business degree students from private universities (located in Lahore, Pakistan) listed on Higher education Pakistan (HEC) website; who were taught entrepreneurship course either in BBA or MBA program. Data was collected by surveying people who have passed or part of entrepreneurship course. Because, it is more relevant to collect data from those who had been part of entrepreneurial activities/projects. The sample was selected through systematic stratified sampling technique. It was ensured to collect data from the proposed heterogeneous sample and ensures the generalizability of these results to overall population. 400 questionnaires were distributed and 250 were returned back representing 62.5% response rate. 183 responses were used for further analysis after reducing unengaged responses and missing values thereby with an actual response rate of 45.8%.

The partial least squares (PLS) technique was applied to measure the model by using Smart PLS software (Ringle et al., 2005). This methodology comprised of a statistical modelling-based technique which allows simultaneous modeling of relationships by using Structural equations method (SEM). This incorporated measurement model to confer reliability & validity and structural model to test the hypothesis. PLS algorithm was calculated to find reliability and validity of the proposed scale. PLS algorithm did not assign equal weights to all items of scale instead it permitted each indicator to fluctuate according to its influence on the composite construct score. To measure the structural model, the study also deployed the bootstrapping technique at sample of 1000 that created a larger set of sub-samples from the actual sample to generate purified results through the automatic reduction of observations.

4.2. Measures

The present research employed self-administered survey questionnaire consisting of 41 items. This study measured entrepreneurial intention through an instrument consisting of 6 items adapted from Entrepreneurial Intention Questionnaire (EIQ) (Liñán & Chen, 2009). One of the items was; “I am ready to do anything to be an entrepreneur”. Whereas, in order to measure “innovation” the innovative scale adapted from Jackson personality inventory (1994) as utilized by (Thomas & Mueller, 2000) comprised of eight statements was used. Sample item included; “I often surprise people with my novel ideas”. Proactive personality was evaluated with the shortened version of proactive personality scale (S-PPS) developed by (Seibert et al., 1999). This scale encompassed 10 items, sample item was “I am constantly on the lookout for new ways to improve my life”. Self-efficacy was measured using 8-item GSES provided by (G. Chen, Gully, & Eden, 2001). Sample item incorporated; “I can achieve most goals that I set for myself”. Rationale behind choosing this scale underlined with a view that general measures of self-efficacy was more adequate when job demanded multiple skills set (Markman, Baron, & Balkin, 2005). Response was obtained using a 5-point liker scale ranging from 1 (strongly disagree) to 5 (strongly agree) on all four constructs.

5. Results, data analysis and findings

Table 1 entailed the ‘factor loadings’, ‘composite reliability’ (CR) and ‘average variance extract’ (AVE), which were found to measure the “convergent validity” of variables. The validity of “measurement scale” had been considered as convergent when all items loaded had high value (i.e., > 0.50) on their variables (Hair, Ringle, & Sarstedt, 2011). Variables was considered significant when each signified item showed a strong correlation with their own Variables than with any other Variables and demonstrated that items were assumed relevant by respondents. As shown in Table 1, all those items were part of analysis which had values above the acceptable range. Calculation of Convergent validity had been made by AVE and CR value. According to (Barclay, Higgins, & Thompson, 1995) the value of AVE should be 0.50 or above considered acceptable. Hence following aforesaid claim, result demonstrated that “**convergent validity**” of measured variables had been sufficiently accepted since the AVE value were above 0.50, and CR was above 0.80 for all tested variables.

Later studies used “Fornell-Larcker criterion” and the measurment of “cross-loadings” to investigate discriminant validity (Henseler, Ringle, & Sarstedt, 2015).

The contemporary techniques criticized “Fornell-Larcker approach” to calculate the discriminant validity in varied research questions. Therefore, the present research proposed a substitute method namely, “multitrait-multimethod matrix”, to

calculate discriminant validity referred as “heterotrait-monotrait ratio” of correlations (Henseler et al., 2015). Table 2 showed the HTMT ratio to find the discriminant validity. Kline (2011) proclaimed that “Heterotrait-Monotrait ratio” should be “less than 0.85” to confirm the discriminant validity of variables. Considering this criterion, it was observed that all the values were less than 0.85 and ensured that there was no issue of discriminant validity. Hypothesis 1 predicted an effect of proactive personality on entrepreneurial intentions and self-efficacy.

Table 1: Confirmatory Factor Analysis

Constructs	Loadings	Alpha	CR	AVE	
Proactive Personality (PP)	PP10	0.66	0.834	0.878	0.548
	PP2	0.672			
	PP5	0.75			
	PP6	0.748			
	PP7	0.824			
	PP9	0.773			
Innovativeness (IN)	I2	0.63	0.744	0.839	0.567
	I4	0.825			
	I6	0.782			
	I7	0.762			
Self-efficacy (SE)	SE1	0.689	0.803	0.859	0.507
	SE2	0.772			
	SE3	0.804			
	SE5	0.697			
	SE6	0.703			
	SE8	0.587			
Entrepreneurial Intentions (EI)	EI3	0.772	0.751	0.843	0.573
	EI4	0.798			
	EI5	0.736			
	EI6	0.722			

Note: Items which have less than 0.50 value are not included for further analysis

Table 2: Discriminant validity

	EI	IN	Moderating Effect 1	PP	SE
EI					
IN	0.718				
Moderating Effect 1	0.183	0.372			
PP	0.613	0.724	0.41		
SE	0.847	0.801	0.303	0.775	

Results (Table 3) concluded a significant positive effect of proactive personality on entrepreneurial intentions ($\beta = 0.311$; $t = 3.772$; $LL=0.179$, $UL=0.446$) and self-efficacy ($\beta = 0.644$; $t = 14.656$; $LL=0.555$, $UL=0.732$), thus supports H1 and H2. Moreover, findings divulged that self-efficacy is significantly and positively related to entrepreneurial intentions ($\beta = 0.518$; $t = 6.656$; $LL=0.359$, $UL=0.663$) and supported to H3. Similarly results of Table 3 signified that there is insignificant relationship between innovativeness and entrepreneurial intentions ($\beta = 0.196$; $t = 2.383$; $LL=0.014$, $UL=0.342$), thus H5 is also supported. Lastly, hypothesis 6 proposed that innovativeness moderates the relation between proactive

personality and entrepreneurial intentions yet, results purported that innovativeness does not moderate the relation between proactive personality and entrepreneurial intentions ($\beta = -0.047$; $t = 0.312$; $LL=-0.242$, $UL=0.317$); Subsequently, the study does

not support H6. Findings (Refer to Table 4) revealed that self-efficacy mediates the relation between proactive personality and entrepreneurial intentions ($\beta = 0.334$; $t = 5.786$; $LL=0.226$, $UL=0.453$) and supported to H4.

Table 3: Path Coefficients

Hypothesis	Relationships	Std. Beta	Std. Error	t value	P Values	LL	UL	R2	Q2	VIF
H1	PP -> EI	0.311	0.082	3.772	P<0.01	0.179	0.446	0.436	0.228	2.101
H2	PP -> SE	0.644	0.044	14.656	P<0.01	0.555	0.732	0.414	0.193	1.98
H3	SE -> EI	0.518	0.078	6.656	P<0.01	0.359	0.663			
H5	IN -> EI	0.196	0.082	2.383	P<0.01	0.014	0.342			1.808
H6	Moderating Effect 1 -> EI	-0.047	0.152	0.312	0.755	-0.242	0.317			1.204

Table 4: Indirect Effect

Hypothesis	Relationships	Std. Beta	Std. Error	t value	P Values	LL	UL
H4	PP -> SE -> EI	0.334	0.058	5.786	0	0.226	0.453

6. Discussion and conclusion

This research provides deep insight from psychological and personality perspective into phenomenon of entrepreneurial intention accounting large sample size of Pakistani university business students. This study proclaims that proactive personality, Self-efficacy and innovativeness are significant predictors of entrepreneurial intentions. The study investigates the relation between proactive personality and entrepreneurial intentions and the extent to which the relationship is mediated by Self-efficacy and is moderated by innovativeness. Proactive personality is positively related to entrepreneurial intentions (H1) and has the capacity to describe the variance in entrepreneurial intentions. This relation has been widely confirmed by (Crant, 1996; Rauch & Frese, 2007). Thus, it is very important to appreciate proactive traits in students so that they may start thinking of being entrepreneur as their future career choice. According to this study, there is positive significant relationship between Proactive Personality and Self-efficacy (H2). Which has been also widely accepted by previous scholarly research (Bakker et al., 2012; Frese & Fay, 2001; Li et al., 2016; Seibert et al., 2001). Since, Proactive people are self-determined and have believed in their can-do attitude. Finding infers that high self-efficacy level of proactive students determine the extent to which they can contribute positively towards society as well as country. Self-efficacy further positively

effects entrepreneurial intentions (H3). This has been empirically supported by other studies of entrepreneurship line (Carr & Sequeira, 2007; Lans et al., 2010; Zhao et al., 2005). This led us to believe that having youngsters' perception of occupying competencies can lead the desire to start the venture.

Furthermore, self-efficacy mediates the relation between proactive personality and entrepreneurial intentions (H4). Similar to other results who empirically find mediating role of self-efficacy between the personality and entrepreneurial intentions relation (Miao, 2015; Wang et al., 2016; Zhao et al., 2005). This suggests that self-efficacy is a significant mechanism between this relation and should be increase in order to create new businesses by proactive individuals. This study empirically finds that innovativeness is significantly related to entrepreneurial intentions (H5). Individual trait of innovativeness strengthens this relation; reinforcing to promote innovative behaviour to increase the probability of new enterprise development by youth. Similar to this study, innovativeness is strong predictor of entrepreneurial intentions has been significantly tested and confirmed (Altinay et al., 2012; Chye Koh, 1996; Gurel et al., 2010; Gürol & Atsan, 2006; Hmieleski & Corbett, 2006; Mueller & Thomas, 2001; Shane et al., 1991). However, this study does not find moderation between proactive personality and entrepreneurial intentions relation and consequently, does not support to H6.

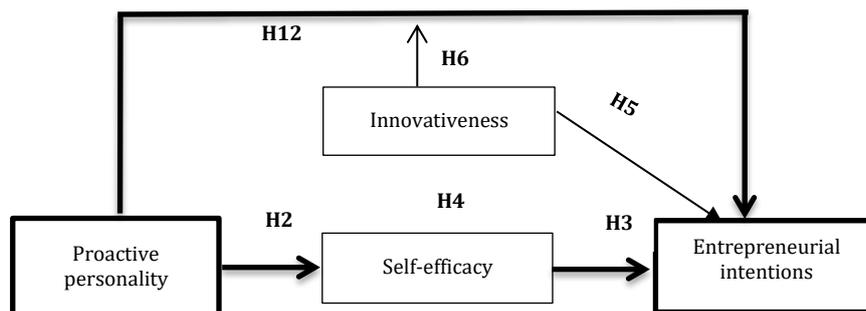


Fig. 1: Research model

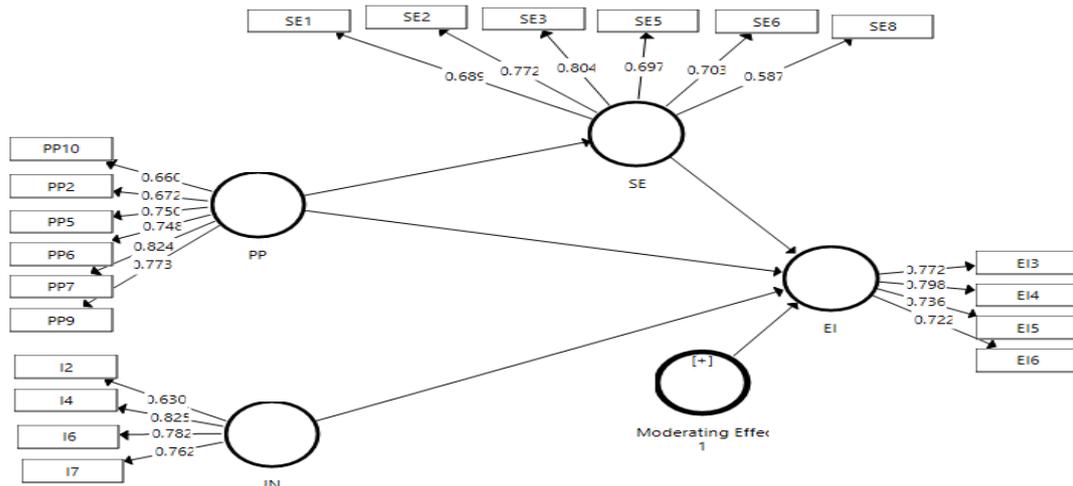


Fig. 2: Confirmatory Factor Analysis

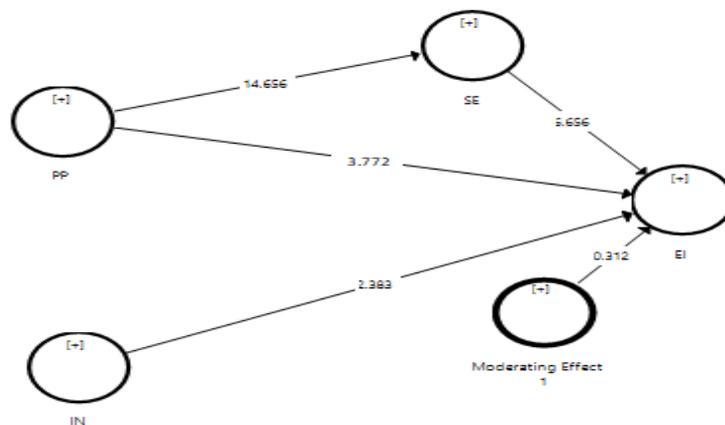


Fig. 3: SEM T-Values

7. Implications

A number of suggestions can be made by this research particularly to students and education sector. Universities can start number of crunching activities to inculcate entrepreneurial abilities and promote young entrepreneurs by i). Establishing business incubation center within the institute, ii). Providing online information portal regarding education, consultancy services, business plan for business creation etc., iii). Developing liaison of students with working alumni and professional network. The education and training should center itself much more in changing personal attitudes than in knowledge, because the effects could be more significant to the process of business creation and a feasible alternate to employment. Academia should re-design their curricula by inclusion of such activities that promote self-efficacy level, innovativeness, initiative and proactive behavior in students and trainees. Entrepreneurial culture conducive to learning should be imparted. This will in turn lead to economy development due to business initiation. Business creation will generate employment consequently lowering crimes in Pakistan. The findings of this study infer that students should actively involve in entrepreneurial related activities and projects in order to enhance

their innovative & creative skills and utilize learning at actual workplace.

8. Limitations and future directions

Similar to other studies, this study is also subject to some limitations. In-fact, these limitations direct avenues for future research. First, the current model can include behavioral dimensions such as antecedents and outcomes of entrepreneurial behaviour. The research model can comprise of other components such as barriers & support from parents, demographic and cultural/environmental variables. Second, general self-efficacy is used to measure self-efficacy while other types of self-efficacy can be used which are related to Entrepreneurial intentions; to name a few are, entrepreneurial self-efficacy, creative self-efficacy, role-breadth self-efficacy and career self-efficacy. It is still un-answered that which factors contribute to realization of intentions to do business. Since the respondents of this study are students who may not actually start any venture in future. Hence, their response may not valid to examine entrepreneurial intention. Addition of some reverse items to assess intentions to create new business may decrease the measurement error. Longitudinal research design would be a better solution to cater this issue. Third,

2nd generation techniques such as PLS-SEM and qualitative techniques can be deployed in order to explore the mechanisms of entrepreneurship intentions. Fourth, this study lens EI from psychological perspective which doesn't supersede from behavioral perspective. Because, entrepreneurial actions are primarily driven from behaviour stream and behaviour are more susceptible to change as compared to stable characteristics of personality.

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