Entrepreneurial Business and Economics Review

2021, Vol. 9, No. 3

10.15678/EBER.2021.090302

Does entrepreneurial self-efficacy moderate effects of cognitive flexibility and entrepreneurial alertness on entrepreneurial intentions?

Shabeeb Ahmad Gill, Nelly Bencheva, Selcuk Karayel, Muhammad Usman

ABSTRACT

Objective: The objective of this article is to empirically investigate whether entrepreneurial self-efficacy moderates the effects of cognitive flexibility, entrepreneurial alertness on entrepreneurial intentions. It is based on social cognitive theory and person-environment fit theory; the present study aimed to identify the impact of cognitive flexibility, entrepreneurial alertness on entrepreneurial intention.

Research Design & Methods: The sample of this study comprised 486 respondents from the public sector business schools of Pakistan. Data were gathered using a self-report administered questionnaire, and hypotheses were tested with structural equation modelling.

Findings: The results supported the structured hypotheses of the study where cognitive flexibility positively predicts the conditional direct relationship between entrepreneurial alertness and entrepreneurial intentions.

Implications & Recommendations: Our study has some practical implications for the researcher, educationist, and policymakers who are directly and indirectly involved in enhancing the growth of entrepreneurship.

Contribution & Value Added: A unique technique adopted to run a second-order moderated mediation model through AMOS v.26 in one-shot. This study contributes to the emerging research of cognitive psychology and entrepreneurship fields and concludes that individuals with a high level of cognitive flexibility, alertness, and self-efficacy are more inclined to pursue a career in entrepreneurship.

Article type: research article

Keywords: entrepreneurial self-efficacy; entrepreneurial alertness; entrepreneurial intentions; second-order moderated mediation; model 15; user-defined estimand; robust one-shot model; new venture creation

JEL codes: L26, M13

Received: 1 January 2021 Revised: 12 April 2021 Accepted: 2 May 2021

Suggested citation:

Gill, S.A., Bencheva, N., Karayel, S., & Usman, M. (2021). Does entrepreneurial self-efficacy moderate effects of cognitive flexibility and entrepreneurial alertness on entrepreneurial intentions?. *Entrepreneurial Business and Economics Review,* 9(3), 25-41. https://doi.org/10.15678/EBER.2021.090302

INTRODUCTION

Entrepreneurship is an essential driver of societal health, wealth and a formidable engine of economic growth. The debate is ongoing on the vocational studies for new business start-ups that why some individual wants to pursue a career in entrepreneurship rather than others (Obschonka & Hahn, 2018; Dheer & Lenartowicz, 2019). As suggested by several authors, intentions are assured the best predictor for measuring entrepreneurial behaviour (Yi, 2020; Neneh, 2019a). Prior researchers found that individuals with a high level of entrepreneurial intentions positively and significantly influence entrepreneurial behaviour (Shirokova *et al.*, 2016; Kautonen *et al.*, 2015).

Existing studies investigated the role of personality factors such as positive (Mahmood *et al.*, 2019) and negative traits (Wu *et al.*, 2019) to predict the entrepreneurial intention of individuals and examine the importance of cognitions perspective of humans in developing their entrepreneurial behaviour to

start a new business (Brännback & Carsrud, 2018; Treffers *et al.*, 2017). Cognitive flexibility refers to "a person's awareness that in any situation there are many options alternatives available, a willingness to be flexible and adapt to the situation and self-efficacy in being flexible (Dheer & Lenartowicz, 2019; Dajani & Uddin, 2015; Arán Filippetti & Krumm, 2020)."

The compact evidence related to the substance of cognitions is that in exploring entrepreneurial intentions. It needs to expand the literature of prior researchers and contribute to cognitive flexibility abilities that impact individuals perceived fit to become an entrepreneur (Dheer & Lenartowicz, 2019; Obschonka & Hahn, 2018; Shepherd & Patzelt, 2018). This study contributes to the literature on the mediating role of entrepreneurial alertness on entrepreneurial intentions. Previous studies have explored entrepreneurial alertness as a predictor and outcome variable to examine entrepreneurial intention (Hu & Ye, 2017; Obschonka *et al.*, 2017; Bueckmann-Diegoli & Gutiérrez, 2020). The mediation role of alertness on intention is relatively obscure in the existing literature (Hu *et al.*, 2018; Campos, 2017).

The lens of social cognitive theory to understand the mechanism of cognitive flexibility and entrepreneurial self-efficacy on entrepreneurial intention. This theory developed mutual association among personal factors, behavioural factors, and environmental factors (Dheer & Lenartowicz, 2019). Finally, the relationship between cognitive flexibility, entrepreneurial alertness, entrepreneurial self-efficacy, and entrepreneurial intention is under-explored; limited studies have examined the direct and indirect effect of cognitive flexibility or entrepreneurial alertness and entrepreneurial self-efficacy on entrepreneurial intention covered Western culture (Obschonka *et al.*, 2017).

We have used two famous theories of entrepreneurship to strengthen our hypotheses relationship. First, social cognitive theory (SCT) was proposed by Bandura (1997). It is associated with the motivational, learning, and behavioural processes that could be achieved through three bidirectional and reciprocal elements of personal factors; environmental inputs and behavioural results (Wang *et al.*, 2019).

Second, the person-environment fit proposed by Dheer and Lenartowicz (2019). The importance of this theory is underlying in different perspectives. It suggests that every individual's needs, desires, wishes, actions, skills, and abilities are different. It also states that individuals incline toward the environment where they would evaluate their skills and abilities according to the environmental situation (Tepper *et al.*, 2018).

LITERATURE REVIEW

Cognitive flexibility and entrepreneurial intention

Prior studies suggest that individuals with cognitive minds are more active in perceiving, identifying, recognising, and exploiting opportunities to start new ventures (Dheer & Lenartowicz, 2019; Obschonka & Hahn, 2018). Moreover, some scholars state that cognitive abilities and skills facilitate an individual to perceive opportunities and apply knowledge to pursue a career in entrepreneurship (Treffers *et al.*, 2017; Krueger, 2017). Cognitive flexibility influences individuals to engage in entrepreneurial activities and create cognitive abilities in individuals to become an entrepreneur (Baron, 2000).

Roberts *et al.* (2017) have stated that in the process of cognitive flexibility, a theory of cognitive flexibility highlights the individual's necessary beliefs and information play a significant part in developing their entrepreneurial intention and exploring the cognitive abilities and recognition of new opportunities to solve social and environmental hurdles in shaping the new ventures (Spiro *et al.*, 2003). Thus, we hypothesised that:

H1: Cognitive flexibility positively related to entrepreneurial intention.

Cognitive flexibility and entrepreneurial alertness

Entrepreneurs may differ from each other as they are from the rest of the population (Puhakka, 2011). In precursor, it found that entrepreneurs who do not take risks to start a new business compared to

non-entrepreneurs are more likely to have cognitive abilities and control in uncertain situations positively (Obschonka & Hahn 2018; Tang *et al.*, 2012; Roundy *et al.*, 2018). Some researchers argued that the entrepreneur's traits are different from non-entrepreneurs and think differently to pursue a career in entrepreneurship (Gozukara & Colakoglu, 2016).

Tang *et al.* (2012) individuals who are more alert have extra knowledge of the market, internal and external abilities, and a greater intelligence level, which encourages them to start new ventures (Roundy *et al.*, 2018). Therefore, it is possible to discuss that entrepreneurs who have cognitive traits can see business opportunities better than non-entrepreneurs who do not have cognitive abilities (Shepherd, 2015; Obschonka *et al.*, 2017). Hence, we have assumed this hypothesis:

H2: Cognitive flexibility is positively related to entrepreneurial alertness.

Entrepreneurial alertness and entrepreneurial intention

The connection between entrepreneurial alertness and entrepreneurial intention has well established by the antiquities (Neneh, 2019a; Campos, 2017; Tang *et al.*, 2012; Hu & Ye, 2017; Obschonka *et al.*, 2017; Hu *et al.*, 2018; Gozukara & Colakoglu, 2016). It associated with the self-acknowledged belief by an individual that they aim to start a new business and intentionally plan to do so in the future (Tsai *et al.*, 2016).

Entrepreneurial intention helps individuals shape their entrepreneurial behaviours to start a new business (Neneh, 2019b). Tang *et al.* (2012) found that entrepreneurial alertness measure through three dimensions; 1) scanning and searching; systematically and non-systematically scan the internal and external environment and gather information, 2) association and information; associate together scanned and searched unconnected information, 3) judgment and evaluation; make judgment and evaluation according to the commercialise ability of the idea to pursue new business. Accordingly, we have predicted the following hypothesis:

H3: Entrepreneurial alertness is positively related to entrepreneurial intention.

Second-order moderated-mediation of entrepreneurial self-efficacy and entrepreneurial alertness on the relationship between cognitive flexibility and entrepreneurial intention

Many researchers have been highlighted the importance of entrepreneurial self-efficacy in the area of entrepreneurship because of its direct and mediator role to explore the individual entrepreneurial intentions, opportunity recognition, and organisation performance (McGee *et al.*, 2009; Barbosa *et al.*, 2007; Zhao *et al.* 2005; Fuller *et al.*, 2018; Nowiński *et al.*, 2019; Nowiński *et al.*, 2020; McGee & Peterson, 2019; Wach & Bilan, 2021). According to Bandura (1997), entrepreneurial self-efficacy states to "a cognitively created motivation." A few researchers in the past have studied the literature on self-efficacy and cognitive flexibility.

The social cognitive theory's role facilitates the individual's beliefs and develops a high level of self-efficacy toward engaging in new business formation actions (Boyd & Vozikis, 1994; Odoardi *et al.*, 2019; Dheer & Lenartowicz, 2019). This study aims to explore and extend the previous literature using entrepreneurial self-efficacy as a moderator in the relationship between cognitive flexibility and entrepreneurial intention. Therefore, we assumed the following hypotheses:

H4: Entrepreneurial self-efficacy moderates the strength of the direct relationship between cognitive flexibility and entrepreneurial intentions. The relationship will be stronger for the higher entrepreneurial self-efficacy individuals than those who are lower in entrepreneurial self-efficacy.

H5: Entrepreneurial self-efficacy moderates the mediated relationship between cognitive flexibility and entrepreneurial intentions by entrepreneurial alertness in the way that the mediated relationship will be stronger for those who are higher in entrepreneurial self-efficacy.

In the continuity of the hypotheses constructed above, in the literature review chapter and has a solid theoretical foundation. Figure 1 demonstrates the research model of the study.

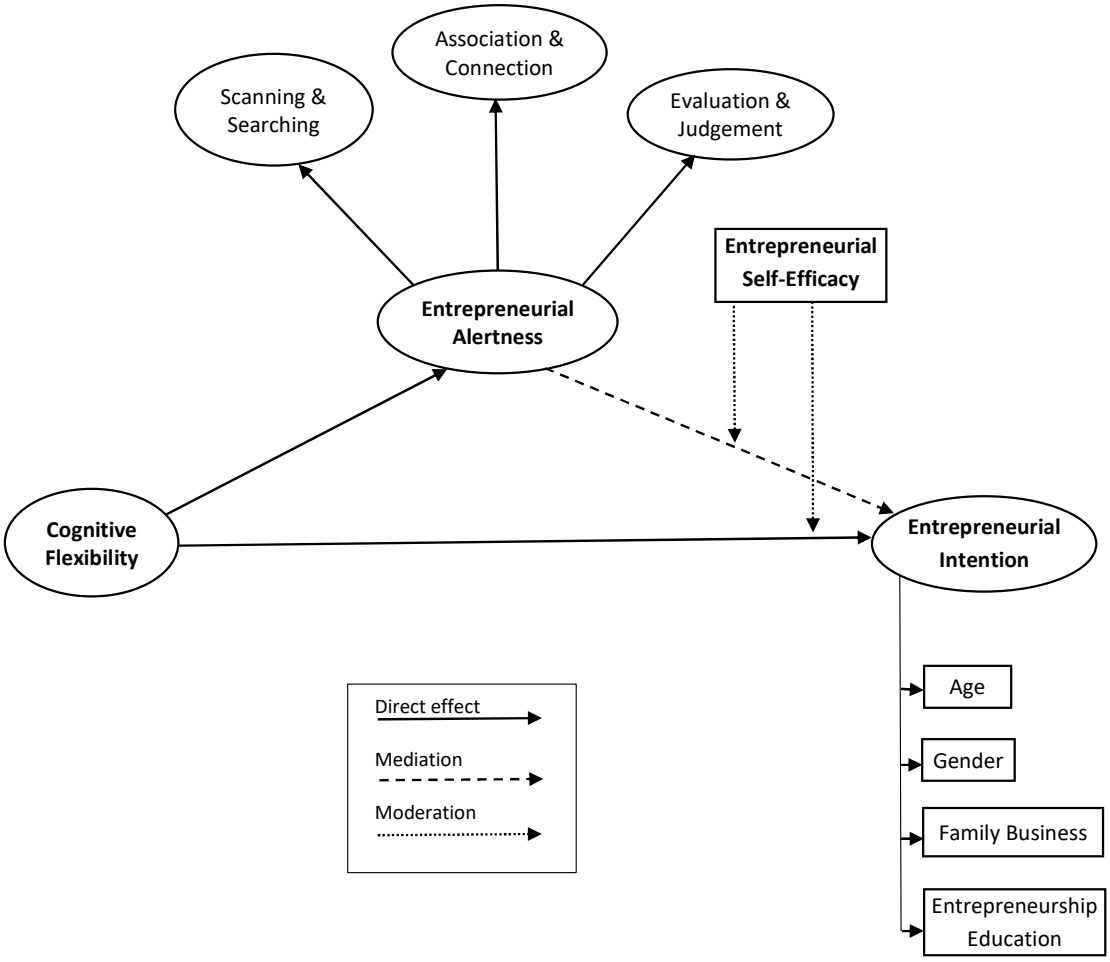

Figure 1. Research Model
Source: own elaboration.

RESEARCH METHODOLOGY

Study Design and Sampling

The study is an empirical analysis using cross-sectional data based on the primary survey. The data came from ten public sector universities working under the umbrella of the higher education department in Punjab, Pakistan. It focused on final year undergraduate and post-graduate students enrolled and studying at business management schools in respective universities (Fuller *et al.*, 2018; Neneh, 2019a; Newman *et al.*, 2019; Shirokova *et al.*, 2016).

According to previous researchers, a sample fall between 400 to 1000 participants significantly contribute to the proposed study (Rouquette & Falissard, 2011; Kyriazos 2018). We randomly distributed the 600 paper-and-pencil questionnaires among the students during their free time using a time lag of three weeks after getting approval from the university administration. Contemplate the Podsakoff *et al.* (2003) approach to reduce the possibility of common method bias. The students' participation was voluntary, and confidentially of their responses was assured. The students returned a total of 530 questionnaires. The overall participation rate was 91.6%. Some of the questionnaires around 44 were discarded due to incomplete forms of filling. Thus, the final sample size was 486 participants and further used for analysis. The participants were 56.7% male and 43.4% female. Also, 77.4% had completed an entrepreneurship education course and most of the participants were between the ages of 18-25 57.4% years. Moreover, 43% of participates came from entrepreneurial family backgrounds.

Instruments

Martin and Rubin (1995) assessed cognitive flexibility with twelve items from previous research on a new cognitive flexibility measure using a five-point Likert scale. To measure entrepreneurial alertness, we used thirteen items scale validated by (Tang *et al.*, 2012) using a five-point Likert scale (Hu *et al.*, 2018; Obschonka & Hahn, 2018). We validate these dimensions using second-order CFA analysis to identify the total variance of these factors. We found 72% variance with each of the three dimensions accounting for 21%, 25%, and 26%. We applied six items based on prior studies to assess entrepreneurial intention, using a five-point Likert scale (Liñán & Chen, 2009). This scale is widely used and acceptable to identify entrepreneurial intention (Neneh, 2019a; Mahmood *et al.*, 2019). To measure entrepreneurial self-efficacy, we used four measurement items on a five-point Likert scale (Zhao *et al.*, 2005).

RESULTS AND DISCUSSION

Model Measurement and Exploratory Factor Analysis

To run this complex model, we used SPSS v.26 and AMOS v.26 for analysis. Three steps approach performed from exploratory factor analysis to confirmatory factor analysis, and then we tested the complex structural model through a single operation.

We conducted principal component analysis (PCA) to reduce and articulate our data. The value of Kaiser-Meyer-Olkin (KMO) is 0.93, which is excellent to attain sample adequacy. After fixing the rotation to six factors study received 75% of the explained variation that is excellent. All the extracted values of commonalities are above the threshold limit (Table 1).

Confirmatory Factor Analysis

We have used confirmatory factor analysis (CFA) using AMOS v.26 software to predict the measurement model, and findings are presented in Table 1 and Figure 2. For the goodness-of-fit the results were stated as follows: X2=1604.354, df=545, X2/df=2.944<5, CFI=0.932, TLI=0.926, IFI=0.932, RFI=0.892, NFI=0.901, GFI=0.835, AGFI=0.809, RMR=0.033, SRMR=0.043 and RMSEA= 0.60. Thus, all the constructs meet the criteria for the measurement model (Hu & Bentler, 1995).

Reliability and Validity Analysis

Cronbach's α of each of the four measurement constructs, such as cognitive flexibility, entrepreneurial alertness, entrepreneurial self-efficacy, and entrepreneurial intention, exceeded the cut-off value of 0.80 showing acceptable reliabilities suggested by (Bagozzi & Yi, 1989). The composite reliability and validity were assessed with the values ranged from 0.916 to 0.960 exceeded the proposed benchmark of 0.70 (Lance *et al.*, 2006). To find out Convergent validity Table 1 shows that the average variance extracted (AVE) values ranged from 0.603 to 0.803, which are acceptable (Fornell & Larcker, 1981).

Discriminant Validity, Descriptive Statistics, and Correlations

Discriminant validity was assessed following criteria (Fornell & Larcker, 1981). Table 2 indicates that values with diagonals are the AVE's square root is discriminant validity, and values under diagonals are correlations between variables. We found a positive and significant correlation between cognitive flexibility and entrepreneurial intention (r=0.408, p=0.01). Moreover, it was positive and significant correlations of scanning and searching (r=0.364, p=0.01), association and connection (r=0.426, p=0.01), evaluation and judgment (r=0.416, p=0.01) and entrepreneurial self-efficacy (r=0.442, p=0.01) with entrepreneurial intention.

Common Method Bias

Harman's single factor test is outdated and not used due to its limitations (Kumar & Shukla, 2019). This study used the common latent factor (CLF) test was recommended by Podsakoff *et al.* (2003). However, the difference between the two situations (standardised regression weights after inclusion and exclusion of CLF) was below the threshold value of (delta>0.2) so, it rejected the possibility of common method variance (CMV) bias.

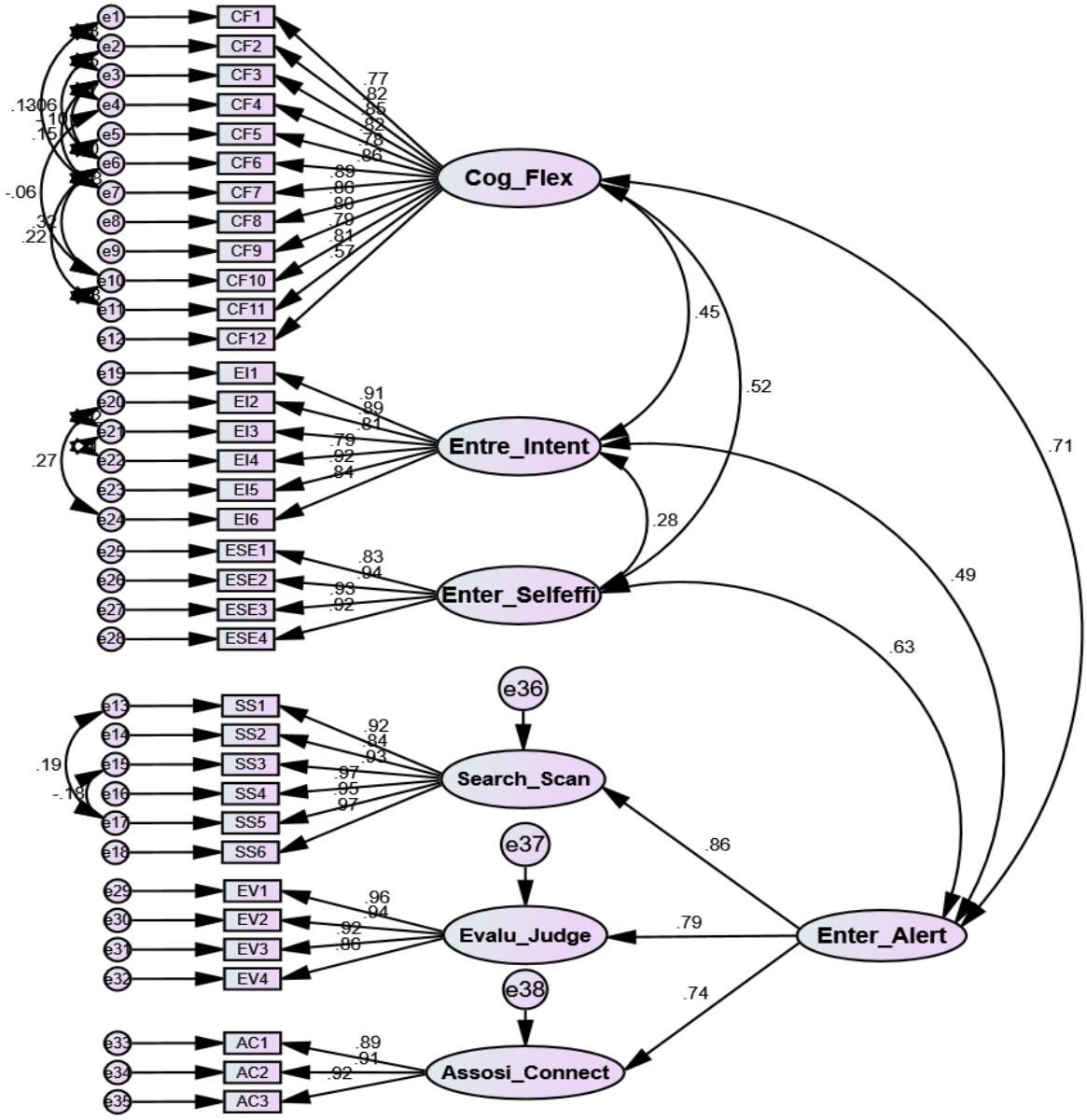

Figure 2. Second-order CFA analysis
Source: own elaboration.

Table 1. Confirmatory factor analysis for the measurement model

Second-order Factors	First-order Factors	Items	1	2	3	4	5	6	CR	AVE	Communalities
Entrepreneurial Alertness	Searching and Scanning	SS1	0.797						0.948	73.1%	0.724
		SS2	0.758								0.647
		SS3	0.817								0.769
		SS4	0.875								0.873
		SS5	0.872								0.845
		SS6	0.888								0.878
	Association and Connection	AC1		0.790					0.916	78.3%	0.821
		AC2		0.862							0.859
		AC3		0.861							0.872
	Evaluation and Judgment	EV1			0.850				0.946	78.9%	0.893
		EV2			0.852						0.877
		EV3			0.837						0.845
		EV4			0.837						0.797
Entrepreneurial Intention		EI1				0.893			0.960	74.9%	0.830
		EI2				0.867					0.817
		EI3				0.809					0.720
		EI4				0.793					0.699
		EI5				0.898					0.846
		EI6				0.846					0.774
Entrepreneurial Self-Efficacy		ESE1					0.805		0.952	80.3%	0.752
		ESE2					0.890				0.882
		ESE3					0.876				0.866
		ESE4					0.891				0.864
Cognitive Flexibility		CF1						0.739	0.953	60.3%	0.603
		CF2						0.788			0.689
		CF3						0.791			0.708
		CF4						0.758			0.655
		CF5						0.727			0.607
		CF6						0.777			0.753
		CF7						0.837			0.769
		CF8						0.816			0.720
		CF9						0.745			0.620
		CF10						0.758			0.635
		CF11						0.792			0.674
		CF12						0.533			0.377
Eigenvalue			3.81	1.44	2.23	3.61	2.51	12.9			

Note: All the values engage in exploratory factor analysis based on first order & second order.
Source: own study.

Table 2. Discriminant validity and correlations

Variable	M	S.D	CF	EI	SS	EV	ESE	AC
CF	3.76	0.711	0.777					
EI	3.77	0.747	0.408***	0.865				
SS	3.94	0.774	0.364***	0.353***	0.855			
EV	3.51	0.804	0.416***	0.354***	0.177***	0.888		
ESE	3.75	0.889	0.442***	0.426***	0.222***	0.443***	0.896	
AC	3.71	0.872	0.426***	0.412***	0.226***	0.296***	0.540***	0.885

Note: CF= Cognitive flexibility, SS=Scanning and Search, AC= Association and connection, EV= Evaluation and judgment, ESE=Entrepreneurial self-efficacy, EI=Entrepreneurial Intention are predictors.
Source: own study.

Data Analysis Method

Before analysing the structural model, we have checked multicollinearity by examining the variance inflation factor (VIF). The findings show that for cognitive flexibility, VIF was 1.482, for entrepreneurial alertness, VIF was 1.622, and for entrepreneurial self-efficacy, VIF was 1.395. All the values of VIF were below the threshold value of 10 recommended by Aiken *et al.* (1994). Moreover, we also applied skewness and kurtosis tests and found no issue with the data. All the values are between -2 to +2 (George, 2011).

Some studies (Campos, 2017; Kumar & Shukla, 2019) used (Baron & Kenny, 1986) approach. Preacher *et al.* (2007) criticised this approach. They suggested that this test did not provide robust statistical power and cannot provide the combined test of direct and indirect effects and accurate estimation of the predictor's indirect effect on the criterion variable (Fritz & MacKinnon, 2007). Several studies recommended that structural equation modelling is the best tool for more robust results than traditional data analysis methods (Yi, 2020; Obschonka & Hahn, 2018; Neneh, 2019b).

Structural Equation Modelling (SEM)

One of this model's novelties is that it is a second-order structural model, and all the items are estimating the complete model in a single run through AMOS v.26. Hence, we tested our second-order structural model in a one-shot, which has no evidence in past studies we explored but to justify our theoretical framework, we distributed it in a single table. We elaborated all the study hypotheses from 1 to 5 that supported the study framework, which was statistically more similar to model no.15 presented in process macro (Hayes, 2013). The AMOS has not the built-in capacity to run model no.15 in one-shot. However, through a well-constructed user-defined estimate (i.e., machine language called syntax), AMOS can run this model in one shot.

The following equations have been used in AMOS syntax to run the direct and indirect paths for second-order moderated mediation:

1. Indirect path = A*(B1+(B2*V));
2. Direct path = C1+(C3*V).

To follow this study's theoretical framework, we estimated entrepreneurial self-efficacy at high, medium, and low levels for conditional direct and indirect effects defined in the model (Figure 2). To fulfil the user-defined estimate's assumptions to run a statistically robust model, we analysed it using 5000 bootstrapped and at a 95% confidence interval (CI). The possible understanding of user-defined estimate in syntax for AMOS shows in Figure 2. To test the conditional direct and indirect moderated mediation of entrepreneurial self-efficacy, more specifically, was estimated on high (+1sd), medium, and below (-1sd).

To assess structural model R^2, we have found that the structural model explained a 40% variance in entrepreneurial alertness and a 19% variance in entrepreneurial intention. As suggested by Chin (1998), a desired R^2 value should be greater than 0.1 or zero. It is not surprising as most of the entrepreneurial intention and behaviour-based studies have explained a 20% to 40% variance in their prior studies (Fuller *et al.*, 2018; Shirokova *et al.*, 2016; Neneh, 2019a).

Hypothesis Testing from User-defined estimates

The findings of the hypotheses were expressed with standardised estimates, critical ratios, and p values. Table 3 and Figure 3 show the results of the hypotheses. As hypothesised in the model, cognitive flexibility is positively related to entrepreneurial intention. The findings indicate that cognitive flexibility has a direct positive and significant impact on entrepreneurial intention (β=0.299, t=3.44, p<0.000). Thus, H1 supported by the results and accepted. The relationship stated that individuals with a greater cognitive flexibility level have more awareness and decision-making power to pursue a career in entrepreneurship. We predicted H2 cognitive flexibility positively related to entrepreneurial alertness.

The structural model results show that cognitive flexibility has a direct positive and significant influence on entrepreneurial alertness (β=0.573, t=9.64, p<0.000). The H2 was supported and accepted.

Hence, individuals who have cognitive flexibility abilities are more inclined and alert to identify and recognise the opportunities for starting a new venture. The results illustrate that entrepreneurial alertness has a direct positive and significant effect on entrepreneurial intention (β=0.294, t=2.9, p<0.004). Consequently, H3 was also e supported and accepted. The association indicated that individuals with a higher level of alertness through scanning and search, association and connection, evaluation, and judgment actively recognise and exploit new opportunities to become entrepreneurs.

The hypothesis H4 of this study stated that the relationship is stronger for the higher entrepreneurial self-efficacy individuals than those who are lower in entrepreneurial self-efficacy. Table 3 shows that (β=0.92, t=2.51, p<0.012) entrepreneurial self-efficacy significantly moderates the direct relationship between cognitive flexibility and entrepreneurial intentions. The mediated relationship is more robust for those who are higher in entrepreneurial self-efficacy. Table 3, which indicated (β=-0.76, t=-2.3, p<0.002) that entrepreneurial alertness and entrepreneurial self-efficacy negatively but significantly moderated mediation effect on entrepreneurial intention. Hence, H5 confirmed partial moderated mediation and accepted. The study has four control variables to test either they influence the dependent variable or not. Unfortunately, all the control variables (i.e., entrepreneurial education, family business, gender, and age) are insignificant and have no relationship.

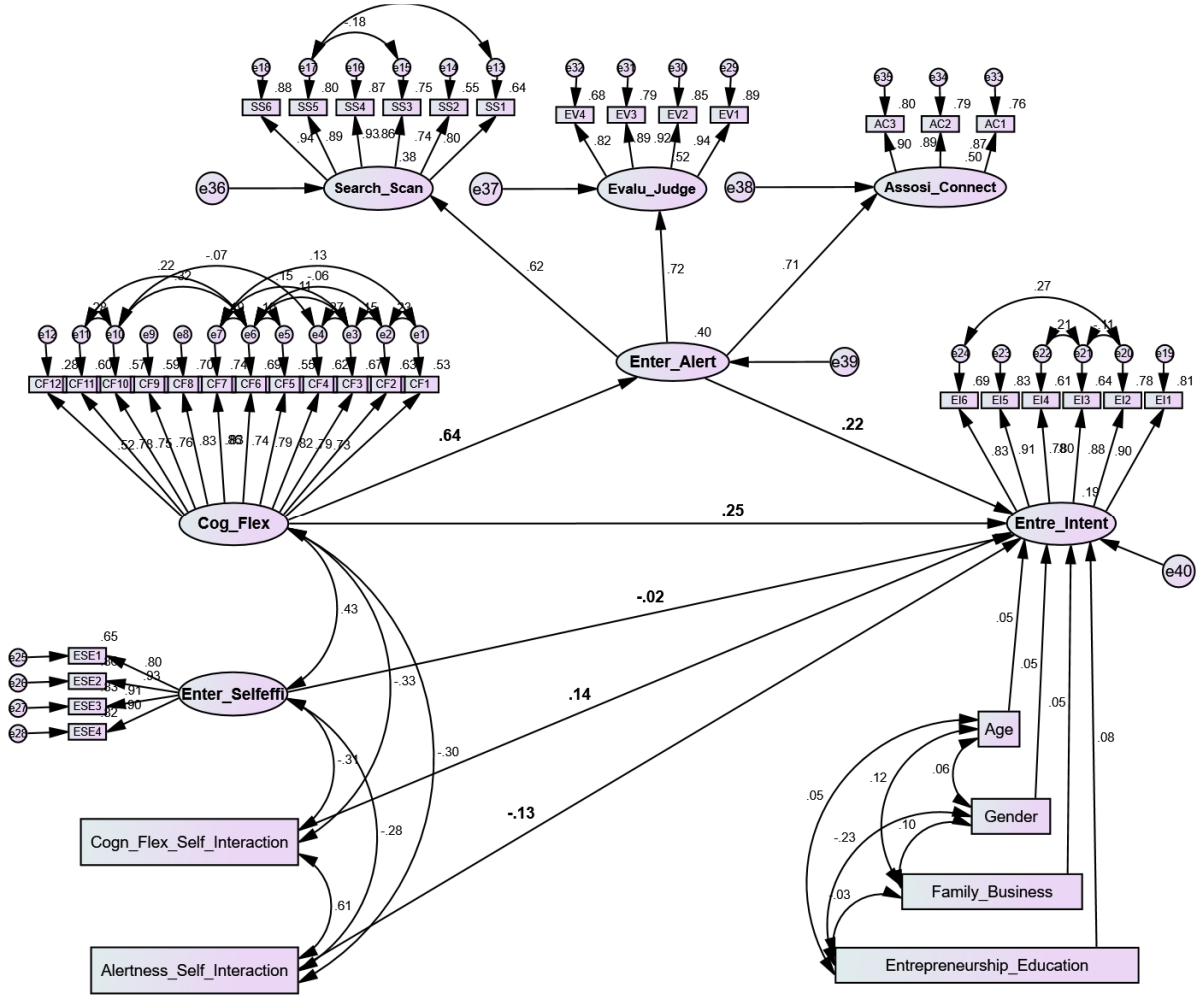

Figure 3. Structural Model

Note: CF= Cognitive flexibility, EA= Entrepreneurial alertness, ESE=Entrepreneurial self-efficacy, EI=Entrepreneurial Intention

Source: own elaboration.

Table 3. Direct, Indirect & Conditional Effects (One-shot Model)

Hypothesis & Paths			β	t-Value	P	Bias-corrected Percentile 95% CI				Label
						Estimate	Lower	Upper	P	
CF	→	EI	0.299	30.443	***	0.247	0.097	0.407	0.003	C1
CF	→	EA	0.573	90.646	***	0.636	0.555	0.711	0.000	A
EA	→	EI	0.294	20.909	0.004	0.219	0.033	0.411	0.018	B1
CF x ESE	→	EI	0.092	20.515	0.012	0.140	0.009	0.271	0.037	C3
EA x ESE	→	EI	-0.076	-20.330	0.020	-0.127	-0.272	0.019	0.084	B2
Controls										
Entrepreneurial Education	→	EI	0.146	10.809	0.070	0.080	-0.013	0.169	0.106	–
Family Business	→	EI	0.072	10.075	0.282	0.046	-0.040	0.132	0.299	
Gender	→	EI	0.072	10.046	0.295	0.046	-0.040	0.133	0.317	
Age	→	EI	0.041	10.135	0.257	0.049	-0.039	0.131	0.266	

Note: CF= Cognitive flexibility; EA= Entrepreneurial alertness; ESE=Entrepreneurial self-efficacy; EI=Entrepreneurial Intention; β=Standardized Coefficient Estimates; SE= Standard Error; p= level of significance; Label= Syntax; Bootstrapping=5000; CI=confidence of interval 95%.
Source: own study.

Testing the Conditional Direct and Indirect Effects (Hypotheses 4 And 5)

Hayes (2013) suggested that four conditions without attaining this moderated mediation do not exist. These suggestions are the following, a) the relationship between exogenous and endogenous should significant; b) the interaction of moderator and mediator on endogenous should significant; c) the relationship between the mediator and the endogenous variable should be significant; d) the degree of conditional indirect effect must be different at low, medium, and high levels for moderator.

Table 4. Conditional direct and indirect effect of cognitive flexibility on entrepreneurial intention through entrepreneurial self-efficacy

Conditional Direct & Indirect Effect	β	Percentile 95% CI		P
		Lower Bound	Upper Bound	
The conditional indirect effect at high, medium, and low entrepreneurial self-efficacy				
Low (-1sd) entrepreneurial self-efficacy	0.206	0.054	0.382	***
Medium (0) entrepreneurial self-efficacy	0.169	0.024	0.340	***
High (+1sd) entrepreneurial self-efficacy	0.131	-0.016	0.315	Insig.
The conditional direct effect at high, medium, and low entrepreneurial self-efficacy				
Low (-1sd) entrepreneurial self-efficacy	0.219	0.009	0.435	***
Medium (0) entrepreneurial self-efficacy	0.299	0.115	0.500	***
High (+1sd) entrepreneurial self-efficacy	0.379	0.187	0.586	***

Note: Bootstrapping sample size=5000; β=Standardized estimate.
Source: own study.

To test the conditional direct effect through H4 we analyse Table 3 shows (β=0.299, t=3.44, p<0.000) the significant relationship between cognitive flexibility and entrepreneurial intention. The interaction effect (β=0.92, t=2.51, p<0.012) between cognitive flexibility and entrepreneurial self-efficacy is also significant that confirms a moderating effect. It is observed in Table 4 and Figure 5, which shows a moderating effect of entrepreneurial self-efficacy on the relationship between cognitive flexibility and entrepreneurial intention. The results (β = 0.37, p<0.000) indicates high levels of entrepreneurial self-efficacy (+1sd) for individuals and (β = 0.21, p<0.000) for low levels of entrepreneurial self-efficacy (-1sd), thus, hypothesis 4 of this study supported by the results.

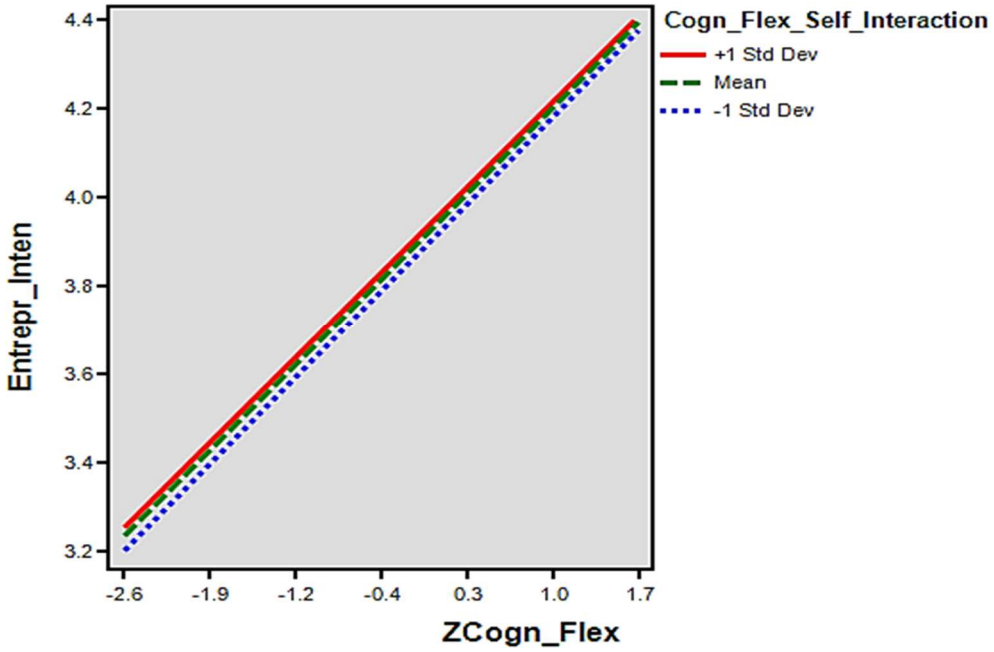

Figure 5. Interaction of ESE×CF and EI
Source: own elaboration.

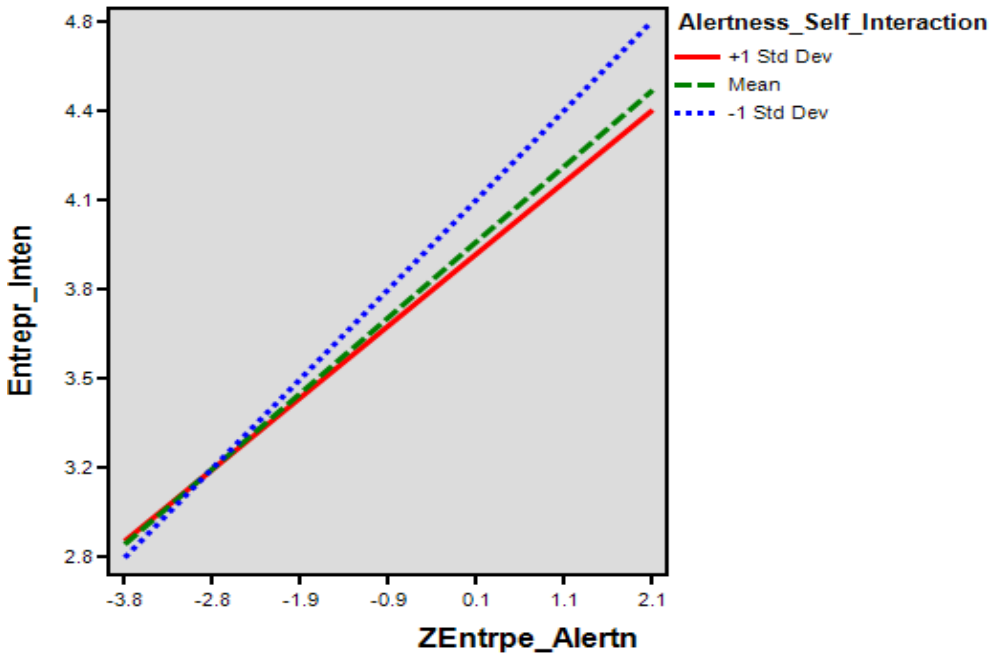

Figure 6. Interaction of ESE×EA and EI
Source: own elaboration.

To test the conditional indirect effect through H5 we analyse that Table 3 shows that (β=0.299, t=3.44, *p*<0.000) the significant relationship between cognitive flexibility and entrepreneurial intention here we meet condition (a). The interaction effect (β=-0.76, t=-2.3, *p*<0.002) between entrepreneurial alertness and entrepreneurial self-efficacy is also significant that meets the condition (b). Table 3 shows that entrepreneurial alertness has a direct positive and significant effect on entrepreneurial intention (β=0.294, t=2.9, *p*<0.004) that meets the condition (c). Table 4 and Figure 6 shows the conditional indirect effect of cognitive flexibility on entrepreneurial intention through entrepreneurial

self-efficacy (β = 0.13, *p*|-.016;.315) that is positive but not significant for high levels of entrepreneurial self-efficacy (+1sd) for individuals and conversely (β = 0.206, *p*|-.054;.382) is positively significant for low levels (-1sd) of individuals. Thus, hypothesis 5 of this study is not consistent.

CONCLUSIONS

This article highlights the substance of cognitive flexibility on entrepreneurial intention through the mediation role of entrepreneurial alertness and the moderating effect of entrepreneurial self-efficacy. We have added contributions in cognitive psychology literature to enhance the understanding that one is with a greater level of cognitive flexibility abilities are more inclined to start a new venture.

Concerning H1, we found that cognitive flexibility has a positive and significant impact on entrepreneurial intention; the results align with the previous researchers (Dheer & Lenartowicz, 2019; Fernández-Pérez *et al.*, 2019). Some studies indicated that entrepreneurship identifies the importance of individuals' intentions to start a new business (Asimakopoulos *et al.*, 2019). Besides, our results are similar to Puhakka (2011) stated that individuals' cognitive capabilities are essential for recognising opportunities, which also persuading perceptions that individuals can pursue the role and chores of entrepreneurs.

Regarding H2, our results indicate that cognitive flexibility positively influenced entrepreneurial alertness, and the hypothesis was supported (Mayer, 1992). Cognitive flexibility may also help individuals who have sufficient experience and knowledge to become an entrepreneur. According to Shepherd and Patzelt (2018), cognitive flexibility positively influences individual cognitive abilities to identify and recognise business opportunities. Concerning H3, our findings suggest that entrepreneurial alertness positively impacts entrepreneurial intention, supporting our hypothesis's acceptance. Entrepreneurial alertness enhances the individual level of searching and scanning, collecting appropriate information and judgment of opportunity identification, forming the entrepreneurial intention and entrepreneurial behaviour.

Related to H4, we found that entrepreneurial self-efficacy moderates and strengthens the direct relationship between cognitive flexibility and entrepreneurial intentions. Hence, our findings are in line with previous researchers who found that entrepreneurial self-efficacy as a mediator and moderator influence an individual's beliefs to become entrepreneurs (Urban, 2019; Wu *et al.*, 2019). Concerning H5 we found that entrepreneurial self-efficacy moderates the mediated relationship between cognitive flexibility and entrepreneurial intentions by entrepreneurial alertness. The mediated relationship is not more substantial for higher entrepreneurial self-efficacy, but it is reciprocal. Antiquities suggested that individuals with short efficacy are not motivated to achieve any desired goal than those with a greater efficacy level (McGee *et al.*, 2009; McGee & Peterson, 2019).

The practical implications of this study refer to the researcher, educationist, and policymakers who are directly and indirectly involved in enhancing entrepreneurship growth. The educator should pay more attention to the student's cognitive abilities and encourage them to pursue a career in entrepreneurship. They must offer some business start-up training programs for individuals and develop their entrepreneurial attitude and skills to start a new business. The educators must focus on students who have the cognitive abilities to become entrepreneurs and emerging those cognitive skills that can facilitate them to see entrepreneurship as the right path to utilise their minds.

They should make some assessment tools that help them identify the cognitively flexible individuals with the confidence that they would see more extraordinary fit toward new business development and display greater attention and determination toward getting the effective and efficient skills and abilities that facilitate them toward entrepreneurship. Finally, educators encourage and promote entrepreneurship's drive among the students and arrange some industry interaction to learn practical knowledge through interactive meetings with new young and passionate entrepreneurs.

A future researcher can take the actual behaviour of individuals with risk-taking as a predictor to add more contribution to cognitive psychology and entrepreneurship. The nature of our study was cross-sectional using a self-report questionnaire. Therefore, a future study conducted with longitudinal data using other cognitive psychology techniques such as EEG, neurology imaging, and individuals'

brain scanning to predict better cognitive abilities and their entrepreneurial intentions. Our study focused on public sector university students of Pakistan using a small sample size. Future researchers may also employ these constructs on different samples, e.g., SME's sector entrepreneurs, to enhance their firm performance with cognitive flexibility.

REFERENCES

Arán Filippetti, V., & Krumm, G. (2020). A hierarchical model of cognitive flexibility in children: Extending the relationship between flexibility, creativity and academic achievement. *Child Neuropsychology*. https://doi.org/10.1080/09297049.2019.1711034

Asimakopoulos, G., Hernández, V., & Peña Miguel, J. (2019). Entrepreneurial Intention of Engineering Students: The Role of Social Norms and Entrepreneurial Self-Efficacy. *Sustainability*, *11*(16), 4314. https://doi.org/10.3390/su11164314

Bagozzi, R. P., & Yi, Y. (1989). On the Use of Structural Equation Models in Experimental Designs. *Journal of Marketing Research*, *26*(3), 271-284. https://doi.org/10.1177/002224378902600302

Bandura, A. (1997). Albert Bandura and the Exercise of Self-Efficacy. *Journal of Cognitive Therapy*.

Barbosa, S. D., Gerhardt, M. W., & Kickul, J. R. (2007). The Role of Cognitive Style and Risk Preference on Entrepreneurial Self-Efficacy and Entrepreneurial Intentions. *Journal of Leadership & Organizational Studies*, *13*(4), 86-104. https://doi.org/10.1177/10717919070130041001

Baron, R. A. (2000). Psychological Perspectives on Entrepreneurship. *Current Directions in Psychological Science*, *9*(1), 15-18. https://doi.org/10.1111/1467-8721.00050

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*(6), 1173-1182. https://doi.org/10.1037/0022-3514.51.6.1173

Boyd, N. G., & Vozikis, G. S. (1994). The Influence of Self-Efficacy on the Development of Entrepreneurial Intentions and Actions. *Entrepreneurship Theory and Practice*, *18*(4), 63-77. https://doi.org/10.1177/104225879401800404

Brännback, M., & Carsrud, A. L. (2018). Where do we go from here? A research agenda for entrepreneurial cognitions. In *A Research Agenda for Entrepreneurial Cognition and Intention* (pp. 1-6). Edward Elgar Publishing. https://doi.org/10.4337/9781784716813.00005

Bueckmann-Diegoli, R., García de los Salmones Sánchez, M. del M., & San Martín Gutiérrez, H. (2020). The development of entrepreneurial alertness in undergraduate students. *Education + Training*. https://doi.org/10.1108/ET-03-2019-0042

Dajani, D.R., & Uddin, L.Q. (2015). Demystifying cognitive flexibility: Implications for clinical and developmental neuroscience. *Trends in Neurosciences*, 38(9), 571-578. https://doi.org/10.106/j.tins.2015.07.003

Dheer, R. J. S., & Lenartowicz, T. (2019). Cognitive flexibility: Impact on entrepreneurial intentions. *Journal of Vocational Behavior*, *115*, 103339. https://doi.org/10.1016/j.jvb.2019.103339

Fernández-Pérez, V., Montes-Merino, A., Rodríguez-Ariza, L., & Galicia, P. E. A. (2019). Emotional competencies and cognitive antecedents in shaping student's entrepreneurial intention: the moderating role of entrepreneurship education. *International Entrepreneurship and Management Journal*. https://doi.org/10.1007/s11365-017-0438-7

Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, *18*(1), 39. https://doi.org/10.2307/3151312

Fritz, M. S., & MacKinnon, D. P. (2007). Required Sample Size to Detect the Mediated Effect. *Psychological Science*, *18*(3), 233-239. https://doi.org/10.1111/j.1467-9280.2007.01882.x

Fuller, B., Liu, Y., Bajaba, S., Marler, L. E., & Pratt, J. (2018). Examining how the personality, self-efficacy, and anticipatory cognitions of potential entrepreneurs shape their entrepreneurial intentions. *Personality and Individual Differences*, *125*, 120-125. https://doi.org/10.1016/j.paid.2018.01.005

Gozukara, I., & Colakoglu, N. (2016). Enhancing Entrepreneurial Intention and Innovativeness of University Students: The Mediating Role of Entrepreneurial Alertness. *International Business Research*, *9*(2), 34. https://doi.org/0.5539/ibr.v9n2p34

Hayes, A. (2013). Introduction to mediation, moderation, and conditional process analysis (Methodology in the

Social Sciences) (The Guilford Press, New York, NY). In *New York, NY: Guilford*.

Hu, L.-T., & Bentler, P.M. (1995). Evaluating model fit. In R. H. Hoyle (Ed.), Structural equation modeling: Concepts, issues, and applications (pp. 76-99). Sage Publications.

Hu, R., Wang, L., Zhang, W., & Bin, P. (2018). Creativity, Proactive Personality, and Entrepreneurial Intention: The Role of Entrepreneurial Alertness. *Frontiers in Psychology*, *9*. https://doi.org/10.3389/fpsyg.2018.00951

HU, R., & Ye, Y. (2017). Do Entrepreneurial Alertness and Self-efficacy Predict Chinese Sports Major Students' Entrepreneurial Intention? *Social Behavior and Personality: An International Journal*, *45*(7), 1187-1196. https://doi.org/10.2224/sbp.6356

Kautonen, T., van Gelderen, M., & Fink, M. (2015). Robustness of the Theory of Planned Behavior in Predicting Entrepreneurial Intentions and Actions. *Entrepreneurship Theory and Practice*, *39*(3), 655-674. https://doi.org/10.1111/etap.12056

Krueger, N. F. (2017). *Entrepreneurial Intentions Are Dead: Long Live Entrepreneurial Intentions* (pp. 13-34). https://doi.org/10.1007/978-3-319-45544-0_2

Kumar, R., & Shukla, S. (2019). Creativity, Proactive Personality and Entrepreneurial Intentions: Examining the Mediating Role of Entrepreneurial Self-efficacy. *Global Business Review*, 097215091984439. https://doi.org/10.1177/0972150919844395

Kyriazos, T. A. (2018). Applied Psychometrics: Sample Size and Sample Power Considerations in Factor Analysis (EFA, CFA) and SEM in General. *Psychology*, *09*(08), 2207-2230. https://doi.org/10.4236/psych.2018.98126

Lance, C. E., Butts, M. M., & Michels, L. C. (2006). The Sources of Four Commonly Reported Cutoff Criteria. *Organizational Research Methods*, *9*(2), 202-220. https://doi.org/10.1177/1094428105284919

Liñán, F., & Chen, Y. (2009). Development and Cross–Cultural Application of a Specific Instrument to Measure Entrepreneurial Intentions. *Entrepreneurship Theory and Practice*, *33*(3), 593-617. https://doi.org/10.1111/j.1540-6520.2009.00318.x

Mahmood, T. M. A. T., Al Mamun, A., Ahmad, G. Bin, & Ibrahim, M. D. (2019). Predicting Entrepreneurial Intentions and Pre-Start-Up Behaviour among Asnaf Millennials. *Sustainability*, *11*(18), 4939. https://doi.org/10.3390/su11184939

Martin, M. M., & Rubin, R. B. (1995). A New Measure of Cognitive Flexibility. *Psychological Reports*, *76*(2), 623-626. https://doi.org/10.2466/pr0.1995.76.2.623

McGee, J. E., & Peterson, M. (2019). The Long-Term Impact of Entrepreneurial Self-Efficacy and Entrepreneurial Orientation on Venture Performance. *Journal of Small Business Management*, *57*(3), 720-737. https://doi.org/10.1111/jsbm.12324

McGee, J. E., Peterson, M., Mueller, S. L., & Sequeira, J. M. (2009). Entrepreneurial Self–Efficacy: Refining the Measure. *Entrepreneurship Theory and Practice*, *33*(4), 965-988. https://doi.org/10.1111/j.1540-6520.2009.00304.x

Miller, T. L., Grimes, M. G., McMullen, J. S., & Vogus, T. J. (2012). Venturing for Others with Heart and Head: How Compassion Encourages Social Entrepreneurship. *Academy of Management Review*, *37*(4), 616-640. https://doi.org/10.5465/amr.2010.0456

Montiel Campos, H. (2017). Impact of entrepreneurial passion on entrepreneurial orientation with the mediating role of entrepreneurial alertness for technology-based firms in Mexico. *Journal of Small Business and Enterprise Development*, *24*(2), 353-374. https://doi.org/10.1108/JSBED-10-2016-0166

Neneh, B. N. (2019a). From entrepreneurial alertness to entrepreneurial behavior: The role of trait competitiveness and proactive personality. *Personality and Individual Differences*, *138*, 273-279. https://doi.org/10.1016/j.paid.2018.10.020

Newman, A., Obschonka, M., Schwarz, S., Cohen, M., & Nielsen, I. (2019). Entrepreneurial self-efficacy: A systematic review of the literature on its theoretical foundations, measurement, antecedents, and outcomes, and an agenda for future research. *Journal of Vocational Behavior*, *110*, 403-419. https://doi.org/10.1016/j.jvb.2018.05.012

Nowiński, W., Haddoud, M.Y., Lančarič, D., Egerová, D., & Czeglédi, C. (2019). The impact of entrepreneurship education, entrepreneurial self-efficacy and gender on entrepreneurial intentions of university students in the Visegrad countries. *Studies in Higher Education*, *44*(2), 361-379. https://doi.org/10.1080/03075079.2017.1365359

Nowiński, W., Haddoud, M.Y., Wach, K., & Schaefer, R. (2020). Perceived public support and entrepreneurship

attitudes: A little reciprocity can go a long way!. *Journal of Vocational Behavior*, 121, 103474. https://doi.org/10.1016/j.jvb.2020.103474

Obschonka, M., Hahn, E., & Bajwa, N. ul H. (2018). Personal agency in newly arrived refugees: The role of personality, entrepreneurial cognitions and intentions, and career adaptability. *Journal of Vocational Behavior*, *105*, 173-184. https://doi.org/10.1016/j.jvb.2018.01.003

Obschonka, M., Hakkarainen, K., Lonka, K., & Salmela-Aro, K. (2017). Entrepreneurship as a twenty-first century skill: entrepreneurial alertness and intention in the transition to adulthood. *Small Business Economics*, *48*(3), 487-501. https://doi.org/10.1007/s11187-016-9798-6

Odoardi, C., Galletta, M., Battistelli, A., & Cangialosi, N. (2018). Effects of beliefs, motivation and entrepreneurial self-efficacy on entrepreneurial intentions: The moderating role of family support. *Roczniki Psychologiczne*, *21*(3), 185-205. https://doi.org/10.18290/rpsych.2018.21.3-1

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*(5), 879-903. https://doi.org/10.1037/0021-9010.88.5.879

Puhakka, V. (2011). Developing a Creative-Cognitive Model of Entrepreneurial Alertness to Business Opportunities. *Journal of Management and Strategy*, *2*(4). https://doi.org/10.5430/jms.v2n4p85

Roberts, R. P., Wiebels, K., Sumner, R. L., van Mulukom, V., Grady, C. L., Schacter, D. L., & Addis, D. R. (2017). An fMRI investigation of the relationship between future imagination and cognitive flexibility. *Neuropsychologia*, *95*, 156-172. https://doi.org/10.1016/j.neuropsychologia.2016.11.019

Roundy, P. T., Harrison, D. A., Khavul, S., Pérez-Nordtvedt, L., & McGee, J. E. (2018). Entrepreneurial alertness as a pathway to strategic decisions and organisational performance. *Strategic Organization*, *16*(2), 192-226. https://doi.org/10.1177/1476127017693970

Rouquette, A., & Falissard, B. (2011). Sample size requirements for the internal validation of psychiatric scales. *International Journal of Methods in Psychiatric Research*, *20*(4), 235-249. https://doi.org/10.1002/mpr.352

Shepherd, D. A. (2015). Party On! A call for entrepreneurship research that is more interactive, activity based, cognitively hot, compassionate, and prosocial. *Journal of Business Venturing*, *30*(4), 489-507. https://doi.org/10.1016/j.jbusvent.2015.02.001

Shepherd, D. A., & Patzelt, H. (2018). Entrepreneurial Cognition. In *Entrepreneurial Cognition: Exploring the Mindset of Entrepreneurs*. Springer International Publishing. https://doi.org/10.1007/978-3-319-71782-1

Shirokova, G., Osiyevskyy, O., & Bogatyreva, K. (2016). Exploring the intention–behavior link in student entrepreneurship: Moderating effects of individual and environmental characteristics. *European Management Journal*, *34*(4), 386-399. https://doi.org/10.1016/j.emj.2015.12.007

Tepper, B. J., Dimotakis, N., Lambert, L. S., Koopman, J., Matta, F. K., Man Park, H., & Goo, W. (2018). Examining Follower Responses to Transformational Leadership from a Dynamic, Person–Environment Fit Perspective. *Academy of Management Journal*, *61*(4), 1343-1368. https://doi.org/10.5465/amj.2014.0163

Toothaker, L. E., Aiken, L. S., & West, S. G. (1994). Multiple Regression: Testing and Interpreting Interactions. *The Journal of the Operational Research Society*, *45*(1), 119. https://doi.org/10.2307/2583960

Treffers, T., Welpe, I. M., Spörrle, M., & Picot, A. O. (2017). *The Role of Emotions and Cognitions in the Pre-entrepreneurial Process: What's New?* (pp. 243-259). https://doi.org/10.1007/978-3-319-45544-0_16

Tsai, K.-H., Chang, H.-C., & Peng, C.-Y. (2016). Extending the link between entrepreneurial self-efficacy and intention: a moderated mediation model. *International Entrepreneurship and Management Journal*, *12*(2), 445-463. https://doi.org/10.1007/s11365-014-0351-2

Urban, B. (2019). Entrepreneurial alertness and self-efficacy: A focus on social values and innovation performance. *SA Journal of Human Resource Management*, *17*. https://doi.org/10.4102/sajhrm.v17i0.1132

Wach, K., & Bilan, S. (2021). Public support and administration barriers towards entrepreneurial intentions of students in Poland. *Administratie si Management Public*, 36(1).

Wang, S., Hung, K., & Huang, W.-J. (2019). Motivations for entrepreneurship in the tourism and hospitality sector: A social cognitive theory perspective. *International Journal of Hospitality Management*, *78*, 78-88. https://doi.org/10.1016/j.ijhm.2018.11.018

Wu, W., Wang, H., Zheng, C., & Wu, Y. J. (2019). Effect of Narcissism, Psychopathy, and Machiavellianism on Entrepreneurial Intention—The Mediating of Entrepreneurial Self-Efficacy. *Frontiers in Psychology*, *10*. https://doi.org/10.3389/fpsyg.2019.00360

Yi, G. (2020). From green entrepreneurial intentions to green entrepreneurial behaviors: the role of university entrepreneurial support and external institutional support. *International Entrepreneurship and Management Journal*. https://doi.org/10.1007/s11365-020-00649-y

Zhao, H., Seibert, S. E., & Hills, G. E. (2005). The Mediating Role of Self-Efficacy in the Development of Entrepreneurial Intentions. *Journal of Applied Psychology*, *90*(6), 1265-1272. https://doi.org/10.1037/0021-9010.90.6.1265

Appendix: Instrument of the study

Second-order Factors	First-order Factors	Code	Items
Entrepreneurial Alertness	Searching and Scanning	SS1	I have frequent interactions with others to acquire new information.
		SS2	I always keep an eye out for new business ideas when looking for information.
		SS3	I read news, magazines, or trade publications regularly to acquire new information.
		SS4	I browse the Internet every day.
		SS5	While going about day-to-day activities, I try to look for new business ideas.
		SS6	I am an avid information seeker.
	Association and Connection	AC1	I often see new combinations of people, materials, or products.
		AC2	I often make novel connections and perceive new or emergent relationships between various pieces of information.
		AC3	often find differences between the way I see certain situations and the way other people see them.
	Evaluation and Judgment	EV1	"Seeing" potential new business opportunities comes very naturally to me.
		EV2	I have a special alertness or sensitivity toward profitable opportunities.
		EV3	I have a gut feeling for potential opportunities.
		EV4	I can distinguish between profitable opportunities and not-so-profitable opportunities.
Entrepreneurial Intention		EI1	I'm ready to make anything to be an entrepreneur.
		EI2	My professional goal is becoming an entrepreneur.
		EI3	I will make every effort to start and run my own firm.
		EI4	I'm determined to create a firm in the future.
		EI5	have very seriously thought in starting a firm.
		EI6	I've got the firm intention to start a firm someday.
Entrepreneurial Self-Efficacy		ESE1	Apply a fresh approach to problems.
		ESE2	I find it easy to balance different ideas within a team.
		ESE3	Understand the language of new venture creation.
		ESE4	Motivate others to work long hours and to meet a deadline.
Cognitive Flexibility		CF1	I can communicate an idea in many different ways.
		CF2	I avoid new and unusual situations.
		CF3	I feel like I never get to make decisions.
		CF4	I can find workable solutions to seemingly unsolvable problems.
		CF5	I seldom have choices when deciding how to behave.
		CF6	I am willing to work at creative solutions to problems.
		CF7	In any given situation, I am able to act appropriately.
		CF8	My behavior is a result of conscious decisions that I make.
		CF9	I have many possible ways of behaving in any given situation.
		CF10	I have difficulty using my knowledge on a given topic in real life situations.
		CF11	I am willing to listen and consider alternatives for handling a problem.
		CF12	I have the self-confidence necessary to try different ways of behaving.

Authors

Shabeeb Ahmad Gill's share is 60%, Nelly Bencheva's share is 20%, while Selcuk Karayel's share is 10%, and Muhammad Usman's share us is 10%.

Shabeeb Ahmad Gill
Head of the Quality Enhancement Cell (QEC) at Riphah International University, Faisalabad (Pakistan). PhD Candidate in Business Administration at Lyallpur Business School, Government College University Faisalabad (Pakistan). His research areas are entrepreneurship, organisational development, organisational sustainability, and strategic human resource management.
Correspondence to: Mr. Shabeeb Ahmad Gill, Government College University Faisalabad, Riphah International University, Faisalabad campus, main staiana road Faisalabad, Pakistan, email: drshabeebgill@gmail.com
ORCID http://orcid.org/0000-0002-2900-0763

Nelly Bencheva
PhD in Management, a renowned researcher, head of the Department at the Agricultural University of Plovdiv (Bulgaria). Her research interests include general management, entrepreneurship, and strategic management.
Correspondence to: Prof. Dr. Nelly Bencheva, PhD, Agricultural University of Plovdiv, бул. Менделеев 12, 4000 Trakiya, Plovdiv, Bulgaria, email: n_bencheva@au-plovdiv.bg
ORCID http://orcid.org/0000-0001-7579-7323

Selcuk Karayel
Visiting professor at the University of South Carolina, Darla Moore School of Business (USA). Assistant Professor at the Faculty of Social and Human Sciences, Necmettin Erbakan University (Turkey). He has been working for the private sector as a foreign trade consultant for 15 years for many companies in Turkey. His areas of interests are business administration and economics.
Correspondence to: Asst. Prof. Dr. Selcuk Karayel, PhD, Necmettin Erbakan University, Faculty of Social and Human Sciences. Kürden, Yeni Meram Cd. No: 262, 42090 Meram/Konya, Turkey, email: skarayel@erbakan.edu.tr
ORCID http://orcid.org/0000-0002-5757-4844

Muhammad Usman
PhD Scholar in Applied Mathematics at the Department of Theoretical and Applied Sciences, Università degli Studi dell'Insubria, Como (Italy). His research interests include data analysis and applied mathematics.
Correspondence to: Mr. Muhammad Usman, Department of Theoretical and Applied Sciences, Università degli Studi dell'Insubria, Como Italy, email: musman2@uninsubria.it
ORCID http://orcid.org/0000-0002-7397-6878

Acknowledgements and Financial Disclosure

This paper and the research behind it would not have been possible without the exceptional support of my PhD teacher Dr. Masood Nawaz Kalyar. His enthusiasm, knowledge, and exacting attention to detail have inspired me and kept my work on track. From my first encounter with the entrepreneurial work to the final draft of this paper, my friend from China, Dr. Majid Murad, provided immense support.

Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Copyright and License