“The mediating effect of entrepreneurial self-efficacy in entrepreneurial intention – a study in Saudi Arabian context”

AUTHORS	Mohammad Naushad https://orcid.org/0000-0003-4421-3422 Syed Abdul Malik

ARTICLE INFO	Mohammad Naushad and Syed Abdul Malik (2018). The mediating effect of entrepreneurial self-efficacy in entrepreneurial intention – a study in Saudi Arabian context. *Problems and Perspectives in Management*, *16*(1), 267-275. doi:10.21511/ppm.16(1).2018.26
DOI	http://dx.doi.org/10.21511/ppm.16(1).2018.26
RELEASED ON	Thursday, 15 March 2018
RECEIVED ON	Friday, 29 September 2017
ACCEPTED ON	Tuesday, 06 February 2018

LICENSE	This work is licensed under a Creative Commons Attribution 4.0 International License

JOURNAL	"Problems and Perspectives in Management"
ISSN PRINT	1727-7051
ISSN ONLINE	1810-5467
PUBLISHER	LLC “Consulting Publishing Company “Business Perspectives”
FOUNDER	LLC “Consulting Publishing Company “Business Perspectives”

NUMBER OF REFERENCES	NUMBER OF FIGURES	NUMBER OF TABLES
57	2	5

© The author(s) 2026. This publication is an open access article.

BUSINESS PERSPECTIVES

LLC "CPC "Business Perspectives"
Hryhorii Skovoroda lane, 10, Sumy, 40022, Ukraine

www.businessperspectives.org

Received on: 29th of September, 2017
Accepted on: 6th of February, 2018

© Mohammad Naushad, Syed Abdul Malik, 2018

Mohammad Naushad, Faculty Member, College of Business Administration, Prince Sattam Bin Abdulaziz University, Al-Kharj, Kingdom of Saudi Arabia (KSA).

Syed Abdul Malik, Faculty Member, College of Business Administration, Prince Sattam Bin Abdulaziz University, Al-Kharj, Kingdom of Saudi Arabia (KSA).

This is an Open Access article, distributed under the terms of the Creative Commons Attribution 4.0 International license, which permits unrestricted re-use, distribution, and reproduction in any medium, provided the original work is properly cited.

Mohammad Naushad (KSA), **Syed Abdul Malik** (KSA)

THE MEDIATING EFFECT OF ENTREPRENEURIAL SELF-EFFICACY IN ENTREPRENEURIAL INTENTION – A STUDY IN SAUDI ARABIAN CONTEXT

Abstract

The purpose of the present study is to test how do the four important psychological antecedents, namely need for achievement (nAch), propensity to risk (PtR), self-confidence (SeC), internal locus of control (IlC) are mediated by the entrepreneurial self-efficacy (ESE) to predict the entrepreneurial intention (EI) in a traditionally oil-based Saudi economy striving for economic diversification. Hypotheses are tested by applying the partial least square (PLS) structural equation modeling (SEM) to a sample of 282 undergraduate business students (male and female) collected from a public university of Kingdom of Saudi Arabia (KSA). The results suggest that psychological variables and self-efficacy play a fundamental role in enhancing entrepreneurial intention (EI) of Saudi students. Personality-related variables have direct influence over EI in other context, but in Saudi context, psychological variables are necessary but not sufficient to develop entrepreneurial intention unless combined with self-efficacy. Self-efficacy has a strong mediating effect between psychological variables and entrepreneurial intentions in Saudi context.

Keywords entrepreneurial self-efficacy, mediating effect, entrepreneurial intention, partial least square, structural equation modeling, Saudi Arabia

JEL Classification L26, O10, C20

INTRODUCTION

Entrepreneurship is one of the significant contributors to the economic efficiencies, employment generation, innovation and welfare of the society, etc. (Wennekers et al., 2005; Baumol, 2002; Shane & Venkataraman, 2000). However, "What persuades people to become entrepreneurs?" is still a debatable issue among researchers (Zhao et al., 2005; Drost, 2010). Though a galaxy of researchers agreed that no other than intentions could better explain the behavior of people to be the future entrepreneurs (Bird, 1988; Krueger et al., 2000; Zhao et al., 2005; Pruett et al., 2009; Liñán & Fayolle, 2015). However, the contributor to the entrepreneurial intention of people might differ in terms of culture, context and ethnicity (Turker & Sonmez Selcuk, 2009; Dinis et al., 2013; Liñán & Fayolle, 2015). However, the most widely used model to predict the entrepreneurial intention is Ajzen's theory of planned behavior (TPB) (Engle et al., 2010; Lüthje & Franke, 2003; Batool et al., 2015; Kautonen et al., 2015). TPB which was pioneered by Ajzen (1985) originally derived from "theory of reasoned action". It explains that when more favorably combined together with attitude, perceived behavioral control and subjective norm strengthen the intention to perform a particular behavior (Ajzen, 1985). Similarly to the constructs mentioned in Ajzen's (1985) model, self-efficacy is al-

so considered as a phenomenal antecedent of entrepreneurial intention (Zhao et al., 2005). The concept of self-efficacy was first conceived by Bandura (1986). Self-efficacy in entrepreneurial context is one's strong belief in performing successfully the task and role of entrepreneurship (Chen et al., 1998; Miao et al., 2016). It is considered as a motivational construct in general (Zhao et al., 2005). It influences the choice of activities of individuals, their level of goals, perseverance, and performance in wide arrays including entrepreneurship (Zhao et al., 2005; Pihie & Bagheri, 2013). The degree of individual's capability or motivation to perform a task up to a great extent depends upon the level of self-efficacy (Forbes, 2005). Self-efficacy is linked with both task and outcome (Drnovšek et al., 2010). However, in both the cases, it is helpful for entrepreneurship. As a task-based focus, it solves the problem of ambiguity in earlier entrepreneurial personality-related research (Chen et al., 1998). Conversely, as an outcome construct, it serves as a force to generate the entrepreneurial intention that results in startup or new venture creation (McGee et al., 2009; Chen et al., 1998; Lüthje & Franke, 2003)_ENREF_7. Because of its broad usefulness and coverage, it is the most researched area of the field of entrepreneurship (Liñán & Fayolle, 2015).

Thus, the focus of the current study is to investigate that combining with the antecedents of TPB, how does self-efficacy mediate the personality-related variables or psychological variables to predict the entrepreneurial intention in Saudi Arabian context.

1. REVIEW OF LITERATURE AND HYPOTHESES SETTING

The meaning and definitions of ESE are well-defined and widely available in the literature e.g. Kickul and D'Intino (2005) and Chen et al. (1998). However, the antecedents that form the ESE differ (Kasouf et al., 2015). These determinants can broadly be classified as contextual (job displacement and prior experience, etc.) and individual factors or personality-related variables (need for achievement (nAch), locus of control (lC), etc.) (Chen et al., 1998). The focus area in the present study is the later aspect of ESE. The following paragraph will explore these antecedents.

Need for achievement (nAch) propounded by McClelland (1987) is also one of the important personality-related antecedents used by researchers (Luthans & Ibrayeva, 2006). nAch does not seem to directly contribute the entrepreneurial behavior (Davidsson & Wiklund, 1999). Though, nAch is one of the vital contributors in building entrepreneurial personal self-efficacy (Johnson, 1990; Beverland & Lockshin, 2001; Luthans & Ibrayeva, 2006). Thus, the following hypotheses can be stated:

H1: Need for achievement (nAch) is positively related to entrepreneurial self-efficacy (ESE).

H1a: Need for achievement (nAch) is not positively related to entrepreneurial intention.

Risk-taking one of the key elements connected with entrepreneur's personality (Zhao et al., 2010). Those who prefer to take more risk are expected to be high in the level of self-efficacy (Barbosa et al., 2007). Though, the risk propensity is more relevant to entrepreneurial intention, not the performance (Zhao et al., 2010). The meta-analysis carried out by Stewart and Roth (2001) outlined the importance of risk propensity in explaining the self-efficacy.

H2: Propensity to risk (PtR) is positively related to entrepreneurial self-efficacy (ESE).

H2a: Propensity to risk (PtR) is positively related to entrepreneurial intention.

Entrepreneurial self-efficacy (ESE) itself is termed as the task-specific self-confidence (Boyd & Vozikis, 1994). Self-confidence is considered as one of the entrepreneurial personality-related characteristics. Those who are involved in entrepreneurship are found to be more confident than non-entrepreneurs (Kickul et al., 2009).

H3: Self-confidence (SeC) is positively related to entrepreneurial self-efficacy (ESE).

H3a: Self-confidence (SeC) is positively related to entrepreneurial intention.

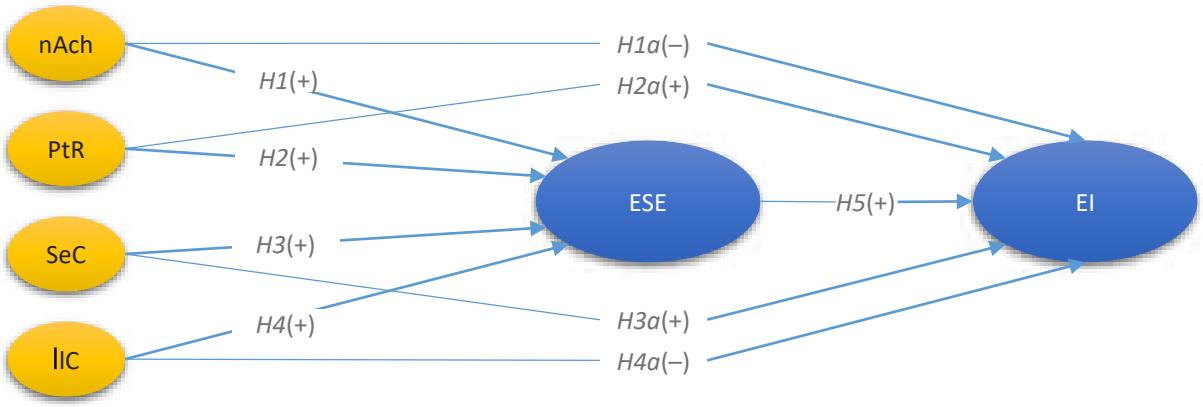

Figure 1. Entrepreneurial self-efficacy (ESE) hypothesized model

Internal locus of control (IlC) is also one of the psychological constructs associated with the psychological aspect of the individual. It is termed as the belief of individuals that largely their success depends upon their actions/tasks, not by external forces (Luthans & Ibrayeva, 2006). Internal locus of control pushes towards a progressive entrepreneurial attitude, and those who have it are to be found with a higher level of self-efficacy (Ajzen, 2002). Though, it does not poise to show the direct impact on the intention of the people.

H4: Internal locus of control (IlC) is positively related to entrepreneurial self-efficacy (ESE).

H4a: Internal locus of control (IlC) is not positively related to entrepreneurial self-efficacy (ESE).

As per Ajzen (2002), "perceived behavioral control (PBC) is the perceived ease or difficulty of performing the behavior". The doctrine of PBC is based on the notion that an individual usually prefers such behaviors which can be easily mastered and controlled (Moriano et al., 2012). It resembles it with the theory of perceived self-efficacy (Zhao et al., 2005; Moriano et al., 2012). However, despite similarity, both are the different constructs (Manstead & Eekelen, 1998; Terry & O'Leary, 1995; Tsai et al., 2014). Moreover, self-efficacy is the stronger predictor of EI (Armitage & Conner, 2001). Moreover, PBC is a solid contributor in explaining the self-efficacy (Pihie & Bagheri, 2013; Tsai et al., 2014).

H5: Entrepreneurial self-efficacy (ESE) is positively related to entrepreneurial intention (EI).

Therefore, the hypothesized model emerged after the hypotheses testing can be seen in Figure 1 below.

2. METHODOLOGY

2.1. Data sample

The data for the study were collected from the undergraduate business students (male and female) enrolled in Bachelor of Science and Business Administration (BSBA) program, consisting of eight levels from a Saudi public university. The questionnaire was constructed as per Liñán and Chen (2009) for TPB variables, and the personality-related variables were conceived from Zhao et al. (2010). Three hundred questionnaires were distributed in hard copy to the level five and above, the sumpling of two hundred and eighty-three students who completed the survey resulted in a 94 percent effective response rate. Only two hundred and sixty-one (i.e. 92 percent) were usable for the study. Among the respondents, 55 (overall 21 percent) were female, and rest were male students. The average age of the students was 25 years and they already spent two and a half years in the university system (see Table 1 for data characteristics).

Table 1. Data characteristics

Data Type	Cross-sectional data
Population characteristics	Level 5 and above business undergraduate male and female students
Sample size	282
Response rate	92 percent
Data collection method	Self-administered questionnaire in hard copy
Statistical analysis	PLS-SEM

2.2. Measurement constructs

ESE measures were taken as the PBC as mentioned by Zhao et al. (2005) and Moriano et al. (2012) that PBC has more resemblance to the

self-efficacy construct. Though, few studies like Manstead and Eekelen (1998), Terry and O'Leary (1995) assume self-efficacy as a separate construct than PBC, but due to its nature similarity, we have taken PBC items (i.e. six in number) adopted from Liñán (2008) to measure the ESE instead of taking a separate scale. Similarly, the entrepreneurial intention (EI) construct was also adopted from Liñán (2008), using 5 items on 7 point rating scale. Personality-related variables contributing into the self-efficacy were originally taken from Koh (1996) used in Dinis et al. (2013). All were on a 5 point rating scale, where 1 indicates "strongly disagree" and 5 "strongly agree". The questionnaire also incorporated questions about the demographics of respondents like age, gender, courses pursued and family entrepreneurial background.

Data were statistically analyzed for descriptive statistics and confirmatory factor analysis using SPSS statistical software. The structural equation model was applied by using the Smart PLS® software.

Partial least squares (PLS) is a variance-based structural equation modeling (SEM) technique applied broadly in social sciences and business (Henseler et al., 2016). It is considered as one of the most powerful tools to evaluate the measurement and in-between relationships of latent variables (Hair et al., 2011; Babin et al., 2008). The model successfully works on the concepts which are difficult to observe directly (Chin, 1998). The technique is extensively used by Zhao et al. (2005), Tsai et al. (2014), Chen and He (2011), Bagheri and Lope Pihie (2014) to access the mediating effect over several constructs.

3. RESULTS

Before delving into the factor analysis and structural modelling, descriptive analysis was performed (see Table 2). It can be noticed that self-confidence has the lowest mean out of the six constructs. While entrepreneurial intention (EI) has the highest mean and standard deviation among all constructs, it is indicated that the group is heterogeneous in regard to EI (Ferreira et al., 2012). This construct has the largest range along with entrepreneurial self-efficacy and internal locus of control. None of the constructs has the mean below 3 by the students who are highly enthusiastic towards the entrepreneurship, and its other constructs.

The exploratory factor analysis (EFA) using principal axis factoring and non-orthogonal promax rotation with Kaiser normalization (eigenvalues ≥ 1) was conducted as a first step to confirm the loadings for measurement model and factor structure (hypothezed) for the constructs. To determine the sufficiency of data for EFA, missing items and multicollinearity check were done, and the variables with problems were dropped. The items with a threshold limit of ≤ 0.50 were eliminated (Hair et al., 2010). Among six items on ESE, represented by PBC, one was eliminated because of its low loading to the factor. Four items from internal locus of control (IlC), IlC1, IlC2 IlC3, and IlC7, were also dropped because of low and cross-loadings. For need for achievement (nAch) construct, only two items qualified for final loadings and rest of the four items were dropped, while in propensity to take risk (PtR), only half of the items qualified for final loadings. Moreover, for the last factor, i.e. self-confidence, one item has been dropped. But, notably, in self-confidence, half of the total items loaded to a separate construct that possibly is because of the reverse statements used in the questionnaire. Table 3 presents the refined and summarized pattern matrix for final loadings.

In order to draw the mediating role of entrepreneurial self-efficacy (ESE), PLS-SEM was applied

Table 2. Descriptive statistics

	Mean	Median	S.D.	Kurtosis	Skewness	Range	N
EI	4.1820	4.7500	1.0884	1.1298	–1.4419	4.0000	261
ESE	3.6098	3.8333	1.0997	–0.6379	–0.5670	4.0000	261
nAch	3.5172	3.6000	0.5667	–0.1642	–0.2137	3.4000	261
PtR	3.2713	3.2000	0.5303	1.0185	–0.4131	3.4000	261
SeC	3.2261	3.1667	0.6521	0.1218	0.4720	3.5000	261
IlC	3.5625	3.6000	0.7654	0.3926	–0.4483	4.0000	261

Table 3. Pattern matrix

	Factors					
	1	2	3	4	5	6
EI Q1	–	.763	–	–	–	–
EI Q2	–	.920	–	–	–	–
EI Q3	–	.907	–	–	–	–
EI Q4	–	.743	–	–	–	–
PBC Q1	.713	–	–	–	–	–
PBC Q2	.821	–	–	–	–	–
PBC Q3	.828	–	–	–	–	–
PBC Q4	.739	–	–	–	–	–
PBC Q5	.699	–	–	–	–	–
IIC Q4	–	–	–	–	.699	–
IIC Q5	–	–	–	–	.680	–
IIC Q6	–	–	–	–	.633	–
nAch Q3	–	–	–	–	–	.641
nAch Q4	–	–	–	–	–	–.779–
PtR Q3	–	–	.649	–	–	–
PtR Q4	–	–	.673	–	–	–
PtR Q5	–	–	–.659–	–	–	–
SeC Q1	–	–	.505	–	–	–
SeC Q2	–	–	.624	–	–	–
SeC Q3	–	–	–	.660′	–	–
SeC Q4	–	–	–	.840	–	–
SeC Q5	–	–	–	.696	–	–

Notes: Extraction method: principal axis factoring. rotation method: promax with Kaiser normalization. a. Rotation converged in 6 iterations.

in two stages. In stage one, we assess the measurement or outer model based on Cronbach's alpha, average variance extracted (AVE), composite reliability (CR) and discriminant validity (DV) as shown in Table 4 below.

Reliability of the constructs used in the model were evaluated by Cronbach's alpha (α). The alpha value for all constructs is found to be significant that is above the threshold limit, i.e. 0.7 (Santos, 1999). As regards to CR, we found that except NACH and PTR constructs, all the other were found to be well above the suggested value of 0.7 (Fornell & Larcker, 1981).

Convergent validity as measured by AVE was also found to be well above the recommended value of 0.5. (Carlson & Herdman, 2012). The discriminant validity was established using the Fornell-Larcker criterion, and thus, the square root of constructs AVE was greater than its correlations with other constructs.

In stage two, the bootstrapping with 5000 subsamples was used to examine the predictive power of the structural model. The table below gives the direct, indirect and total effects along with the final column for the mediation results. Table 5 depicts the results for the nine hypotheses along with the significant or not significant path and meditation results.

Table 4. Summary reliability and validity statistics

	Cronbach's alpha	AVE	CR	STDEV	T-stat.	P-val.	EI	ESE	ILC	NACH	PTR	SEC
EI	0.907	0.772	0.931	0.01	92.545	0.000	0.879	–	–	–	–	–
ESE	0.883	0.666	0.909	0.01	92.522	0.000	0.448	0.816	–	–	–	–
ILC	0.808	0.67	0.859	0.019	45.08	0.000	0.419	0.306	0.819	–	–	–
NACH	0.82	0.79	0.018	0.036	0.483	0.629	0.167	0.222	0.237	0.889	–	–
PTR	0.784	0.672	0.375	0.064	5.852	0.000	0.364	0.366	0.431	0.284	0.82	–
SEC	0.739	0.777	0.875	0.019	47.055	0.000	0.284	0.323	0.376	0.168	0.467	0.882

Table 5. Final mediation results

	Direct effects	Indirect effects	Total effects	Mediation effect
ESE > EI	0.315***	–	0.315***	–
ILC > EI	0.259***	0.042*	0.301***	–
ILC > ESE	0.133*	–	0.133*	Partial
NACH > EI	–0.005NS	0.033 NS	–0.028 NS	–
NACH > ESE	0.106 NS	–	0.106 NS	No mediation
PTR > EI	0.126 NS	0.064*	0.190***	–
PTR > ESE	0.204**	–	0.204**	Full mediation
SEC > EI	0.027 NS	0.050*	0.077 NS	–
SEC > ESE	0.160*	–	0.160*	Full mediation

Notes: *P < 0.05; **P < 0.01; ***P < 0.001; NS – not significant.

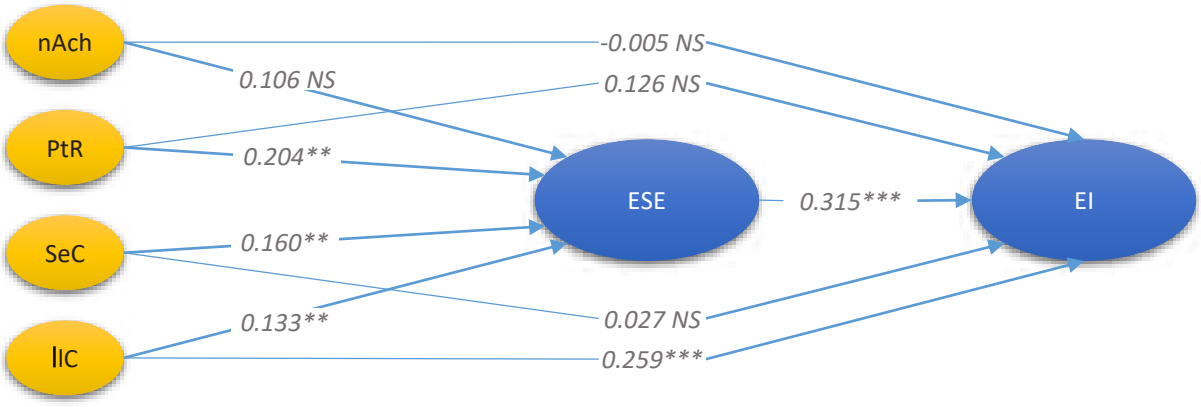

Figure 2. Final model results

CONCLUSION

The study confirms that only one antecedent, namely internal locus of control (IlC), directly predicts the entrepreneurial intention of Saudi undergraduate students. Moreover, the study indicated that self-efficacy mediated the relationship between propensity to risk, self-confidence, internal locus of control and entrepreneurial intention.

These results suggest that psychological variables and self-efficacy play a fundamental role in enhancing entrepreneurial intention (EI) of Saudi undergraduate students. Personality-related variables have direct influence over EI in other context, e.g. Dinis et al. (2013), but in Saudi context, psychological variables are necessary but not sufficient to develop entrepreneurial intention unless combined with self-efficacy. Self-efficacy has a strong mediating effect between psychological variables and entrepreneurial intention among Saudi undergraduate students.

The study is one of the kinds of premier study regarding measuring self-efficacy is not free from limitation. One limitation of the study is excluding the education variable as the dependent variable. There are ample evidence that education translates into the actual entrepreneurial behavior and one of the significant contributors to the entrepreneurial intention (Trivedi, 2016). One of the valid reasons of exclusion of this variable is that the target audience of the survey did not have the formal entrepreneurship education as modern Saudi undergraduate education system is still in its infantile stage. Another limitation of the study can be considered, as for the self-efficacy construct, no separate items were used. Six items of perceived behavioural control (PBC) of Ajzen (1985) model has been utilized, because it resemblance was mentioned in the literature.

REFERENCES

1. Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In *Action control* (pp. 11-39). Springer.
2. Ajzen, I. (2002). Perceived behavioral control. Self-Efficacy, locus of control, and the theory of planned Behavior. *Journal of Applied Social Psychology, 32*(4), 665-683.
3. Armitage, C. J., & Conner, M. (2001). Efficacy of the theory of planned behaviour: A meta-analytic review. *The British Journal of Social Psychology, 40,* 471-499.
4. Babin, B. J., Hair, J. F., & Boles, J. S. (2008). Publishing Research in Marketing Journals Using Structural Equation Modeling. *Journal of Marketing Theory and Practice, 16*(4), 279-285. http://dx.doi.org/10.2753/MTP1069-6679160401
5. Bagheri, A., & Lope Pihie, Z. A. (2014). The moderating role of gender in shaping entrepreneurial intentions: Implications for vocational guidance. *International Journal for Educational and Vocational Guidance, 14*(3), 255-273. http://dx.doi.org/10.1007/s10775-014-9269-z
6. Bandura, A. (1986). *Social foundations of thought and action: A social cognitive perspective. Englewood Cliffs, NJ: Princeton-Hall.*
7. 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.
8. Batool, H., Rasheed, H., Malik, M. I., & Hussain, S. (2015). Application of partial least square in predicting e-entrepreneurial intention among business students: evidence from Pakistan. *Journal of Innovation and Entrepreneurship, 4*(1), 1-16. http://dx.doi.org/10.1186/s13731-015-0019-3
9. Baumol, W. J. (2002). *The free-market innovation machine: Analyzing the growth miracle of capitalism*: Princeton university press.
10. Beverland, M., & Lockshin, L. S. (2001). Organizational Life Cycles in Small New Zealand Wineries. *Journal of Small Business Management, 39*(4), 354-362. http://dx.doi.org/10.1111/0447-2778.00032
11. Bird, B. (1988). Implementing entrepreneurial ideas: The case for intention. *Academy of management review, 13*(3), 442-453.
12. 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.
13. Carlson, K. D., & Herdman, A. O. (2012). Understanding the impact of convergent validity on research results. *Organizational Research Methods, 15*(1), 17-32.
14. Chen, C., Greene, P. G., & Crick, A. (1998). Does entrepreneurial self-efficacy distinguish entrepreneurs from managers? *Journal of Business Venturing, 13*(4), 295-316. http://dx.doi.org/10.1016/S0883-9026(97)00029-3
15. Chen, C. C., Greene, P. G., & Crick, A. (1998). Does entrepreneurial self-efficacy distinguish entrepreneurs from managers? *Journal of Business Venturing, 13*(4), 295-316. http://dx.doi.org/10.1016/s0883-9026(97)00029-3
16. Chen, Y., & He, Y. (2011). The impact of strong ties on entrepreneurial intention. *Journal of Chinese Entrepreneurship, 3*(2), 147-158. http://dx.doi.org/10.1108/17561391111144573
17. Chin, W. W. (1998). The partial least squares approach to structural equation modeling. *Modern methods for business research, 295*(2), 295-336.
18. Davidsson, P., & Wiklund, J. (1999). Suitable approaches for studying small firm growth: the role of entrepreneurship and small and medium enterprises. In *Proceedings of 44th ICSB Word Conference, 1999* (pp. 20-23).
19. Dinis, A., do Paço, A., Ferreira, J., Raposo, M., & Gouveia Rodrigues, R. (2013). Psychological characteristics and entrepreneurial intentions among secondary students. *Education+Training, 55*(8/9), 763-780. http://dx.doi.org/10.1108/ET-06-2013-0085
20. Drnovšek, M., Wincent, J., Cardon, M. S., Luleå tekniska, u., Innovation och, D., & Institutionen för ekonomi, t. o. s. (2010). Entrepreneurial self-efficacy and business start-up: developing a multi-dimensional definition. *International Journal of Entrepreneurial Behaviour & Research, 16*(4), 329-348. http://dx.doi.org/10.1108/13552551011054516
21. Drost, E. (2010). Entrepreneurial intentions of business students in Finland: implications for education. *Advances in Management, 3*(7), 28-35.
22. Engle, R. L., Dimitriadi, N., Gavidia, J. V., Schlaegel, C., Delanoe, S., Alvarado, I. et al. (2010). Entrepreneurial intent: A twelve-country evaluation of Ajzen's model of planned behavior. *International Journal of Entrepreneurial Behavior & Research, 16*(1), 35-57. http://dx.doi.org/10.1108/13552551011020063
23. Ferreira, J. J., Raposo, M. L., Gouveia Rodrigues, R., Dinis, A., & do Paço, A. (2012). A model of entrepreneurial intention: An application of the psychological and behavioral approaches. *Journal of Small Business and Enterprise Development, 19*(3), 424-440. http://dx.doi.org/10.1108/14626001211250144
24. Forbes, D. P. (2005). Are some entrepreneurs more overconfident than others? *Journal of Business Venturing, 20*(5), 623-640. http://dx.doi.org/10.1016/j.jbusvent.2004.05.001
25. Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *Journal of marketing research,* 382-388.

26. Hair, J., Black, W., Babin, B., & Anderson, R. (2010). *Multivariate Data Analysis: a Global Perspective*. Pearson. New Jersey.

27. Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a Silver Bullet. *Journal of Marketing Theory and Practice, 19*(2), 139-152. http://dx.doi.org/10.2753/MTP1069-6679190202

28. Henseler, J., Hubona, G., & Ray, P. A. (2016). Using PLS path modeling in new technology research: updated guidelines. *Industrial Management & Data Systems, 116*(1), 2-20. http://dx.doi.org/10.1108/IMDS-09-2015-0382

29. Johnson, B. R. (1990). Toward a multidimensional model of entrepreneurship: the case of achievement motivation and the entrepreneur. *Entrepreneurship: Theory and Practice, 14*(3), 39.

30. Kasouf, C. J., Morrish, S. C., & Miles, M. P. (2015). The moderating role of explanatory style between experience and entrepreneurial self-efficacy. *International Entrepreneurship and Management Journal, 11*(1), 1-17. http://dx.doi.org/10.1007/s11365-013-0275-2

31. Kautonen, T., 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. http://dx.doi.org/10.1111/etap.12056

32. Kickul, J., & D'Intino, R. S. (2005). Measure for Measure: Modeling Entrepreneurial Self-Efficacy onto Instrumental Tasks Within the New Venture Creation Process. *New England Journal of Entrepreneurship, 8*(2), 39.

33. Kickul, J., Gundry, L. K., Barbosa, S. D., & Whitcanack, L. (2009). Intuition Versus Analysis? Testing Differential Models of Cognitive Style on Entrepreneurial Self-Efficacy and the New Venture Creation Process. *Entrepreneurship Theory and Practice, 33*(2), 439-453. http://dx.doi.org/10.1111/j.1540-6520.2009.00298.x

34. Koh, H. C. (1996). Testing hypotheses of entrepreneurial characteristics: A study of Hong Kong MBA students. *Journal of Managerial Psychology, 11*(3), 12-25. http://dx.doi.org/10.1108/02683949610113566

35. Krueger, N. F., Reilly, M. D., & Carsrud, A. L. (2000). Competing models of entrepreneurial intentions. *Journal of Business Venturing, 15*(5), 411-432. http://dx.doi.org/10.1016/S0883-9026(98)00033-0

36. Liñán, F. (2008). Skill and value perceptions: how do they affect entrepreneurial intentions? *International Entrepreneurship and Management Journal, 4*(3), 257-272. http://dx.doi.org/10.1007/s11365-008-0093-0

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

38. Liñán, F., & Fayolle, A. (2015). A systematic literature review on entrepreneurial intentions: citation, thematic analyses, and research agenda. *International Entrepreneurship and Management Journal, 11*(4), 907-933. http://dx.doi.org/10.1007/s11365-015-0356-5

39. Luthans, F., & Ibrayeva, E. S. (2006). Entrepreneurial Self-Efficacy in Central Asian Transition Economies: Quantitative and Qualitative Analyses. *Journal of International Business Studies, 37*(1), 92-110. http://dx.doi.org/10.1057/palgrave.jibs.8400173

40. Lüthje, C., & Franke, N. (2003). The 'making' of an entrepreneur: testing a model of entrepreneurial intent among engineering students at MIT. *R&D Management, 33*(2), 135-147. http://dx.doi.org/10.1111/1467-9310.00288

41. Manstead, A. S., & Eekelen, S. A. (1998). Distinguishing between perceived behavioral control and self-efficacy in the domain of academic achievement intentions and behaviors. *Journal of Applied Social Psychology, 28*(15), 1375-1392.

42. McClelland, D. C. (1987). Characteristics of successful entrepreneurs. *The journal of creative behavior, 21*(3), 219-233.

43. 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. http://dx.doi.org/10.1111/j.1540-6520.2009.00304.x

44. Miao, C., Qian, S., & Ma, D. (2016). The Relationship between Entrepreneurial Self-Efficacy and Firm Performance: A Meta-Analysis of Main and Moderator Effects. *Journal of Small Business Management*.

45. Moriano, J. A., Gorgievski, M., Laguna, M., Stephan, U., & Zarafshani, K. (2012). A Cross-Cultural Approach to Understanding Entrepreneurial Intention. *Journal of Career Development, 39*(2), 162-185. http://dx.doi.org/10.1177/0894845310384481

46. Pihie, Z. A. L., & Bagheri, A. (2013). Self-Efficacy and Entrepreneurial Intention: The Mediation Effect of Self-Regulation. *Vocations and Learning, 6*(3), 385-401. http://dx.doi.org/10.1007/s12186-013-9101-9

47. Pruett, M., Shinnar, R., Toney, B., Llopis, F., & Fox, J. (2009). Explaining entrepreneurial intentions of university students: a cross-cultural study. *International Journal of Entrepreneurial Behavior & Research, 15*(6), 571-594. http://dx.doi.org/10.1108/13552550910995443

48. Santos, J. R. A. (1999). Cronbach's alpha: A tool for assessing the reliability of scales. *Journal of extension, 37*(2), 1-5.

49. Shane, S., & Venkataraman, S. (2000). The promise of entrepreneurship as a field of research. *Academy of management review, 25*(1), 217-226.

50. Stewart, W. H., & Roth, P. L. (2001). Risk Propensity Differences Between Entrepreneurs and Managers: A Meta-Analytic Review. *Journal of Applied Psychology, 86*(1), 145-153. http://dx.doi.org/10.1037/0021-9010.86.1.145

51. Terry, D. J., & O'Leary, J. E. (1995). The theory of planned behaviour: The effects of perceived behavioural control and self-efficacy. *British journal of social psychology, 34*(2), 199-220.

52. Trivedi, R. (2016). Does university play significant role in shaping entrepreneurial intention? A cross-country comparative analysis. *Journal of Small Business and Enterprise Development, 23*(3), 790-811.

53. Tsai, K.-H., Chang, H.-C., & Peng, C.-Y. (2014). Extending the link between entrepreneurial self-efficacy and intention: a moderated mediation model. *International Entrepreneurship and Management Journal, 12*(2), 445. http://dx.doi.org/10.1007/s11365-014-0351-2

54. Turker, D., & Sonmez Selcuk, S. (2009). Which factors affect entrepreneurial intention of university students? *Journal of European Industrial Training, 33*(2), 142-159. http://dx.doi.org/10.1108/03090590910939049

55. Wennekers, S., Van Wennekers, A., Thurik, R., & Reynolds, P. (2005). Nascent entrepreneurship and the level of economic development. *Small business economics, 24*(3), 293-309.

56. 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. http://dx.doi.org/10.1037/0021-9010.90.6.1265

57. Zhao, H., Seibert, S. E., & Lumpkin, G. T. (2010). The Relationship of Personality to Entrepreneurial Intentions and Performance: A Meta-Analytic Review. *Journal of Management, 36*(2), 381-404.