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# An Italian Adaptation of the Entrepreneurial Passion Scale

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• **ABSTRACT.** Lo studio presenta l'adattamento della versione italiana a 10 item della scala di *Passione Imprenditoriale* proposta da Cardon, Gregoire, Stevens e Patel (2013), che distingue tre dimensioni: *fondare*, *inventare* e *sviluppare*. La ricerca, che ha coinvolto un campione di 535 imprenditori e 638 aspiranti imprenditori, ha confermato la soluzione a tre fattori presente nella versione originale. La scala può avere utili risvolti sia per ricerche, sia per interventi formativi e di sviluppo nel campo dell'imprenditorialità.

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• **SUMMARY.** *Introduction: Entrepreneurial Passion (EP) is considered a multidimensional construct relevant for entrepreneurial intention and performance. The EP Scale proposed by Cardon, Gregoire, Stevens & Patel (2013) distinguishes passion for founding, for inventing and for developing. The study presents the adaptation of the Italian 10-item version of the scale. Methods: A group of 535 entrepreneurs and 638 aspiring entrepreneurs completed a self-report questionnaire. The factorial validity of the Italian EP Scale has been tested through confirmatory factor analysis (CFA) and multigroup CFA using MPlus 7. Correlations were performed to test the concurrent validity of the scale. Results: CFA confirmed the three-factor structure of the scale. The measures of EP in the three domains showed a good internal consistency and significantly correlated with constructs related to EP in literature. Conclusions: This study contributes to validate the Italian version of the instrument. It could be a useful support for researchers and practitioners in the field of entrepreneurship.*

**Keywords:** *Entrepreneurial passion, Entrepreneurship, Scale adaptation*

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## INTRODUCTION

Given the economic and social changes in the recent years, entrepreneurship has received an increasing interest in different fields of research and practice. Despite this increasing interest for the topic, there is still a gap in the Work and Organization Psychology literature; in particular, there is not

a clear agreement around the psychological characteristics that are considered predictive of entrepreneurial performance (Rauch & Frese, 2007). Moreover, in Italy, the attention for this topic and for start-up phenomenon started later compared with other countries (Oehler, Pukthuanthong, Rummer & Thomas, 2007) and little attention has been given to the study of psychological dimensions involved in entrepreneurial

processes (Cubico, Bortolani, Favretto & Sartori, 2010; Molino, Cortese, Carpaneto, Mercuri & Ghislieri, 2015). For these reasons, the study of entrepreneurship in the Italian context is important and it is crucial to provide researchers and practitioners with tools validated in the Italian language. This study contributes to fill this gap through the validation of the Italian version of the Entrepreneurial Passion Scale (Cardon et al., 2013), involving a group of Italian entrepreneurs and aspiring entrepreneurs.

In recent years, the academic literature has shown a growing interest in different concepts related to entrepreneurship; entrepreneurial passion (EP) is one of them (Cardon et al., 2013). As suggested by scholars, the general notion of passion has a long intellectual history, since it has drawn attention of several great philosophers, such as Aristotle, Spinoza, Descartes, Hegel, Machiavelli (Cardon, Wincent, Singh & Drnovsek, 2009; Vallerand et al., 2003).

Rather, only recently psychologists have been interested in the concept of passion; especially, psychologists usually pay attention to its motivational aspects and identity meaning (Cardon et al., 2009; Vallerand et al., 2003). For instance, according to Vallerand et al. (2003), passion is able to enhance motivation, improve mental activity and provide meaning in everyday work. They argued that passion is “a strong inclination toward an activity that people like, that they find important, and in which they invest time and energy” (Vallerand et al., 2003, p.757).

Baum & Lock (2004) referred to passion for work as “love for work”; in their study passion was measured in terms of emotions of love, longing and attachment. Passion was described also as “enthusiasm, joy, and even zeal that come from the energetic and unflagging pursuit of a worthy, challenging, and uplifting purpose” (Smilor, 1997, p. 342). Cardon et al. (2009) defined entrepreneurial passion as “consciously accessible intense positive feelings experienced by engagement in entrepreneurial activities with roles that are meaningful and salient to the self-identity of the entrepreneur” (p. 517). In other words, according to this definition, two dimensions contribute to define the construct: the intense positive feelings and the identity centrality (Cardon et al., 2009; Cardon et al., 2013). These two dimensions are conceptually and empirically distinct from each other (Cardon et al., 2013). The positive and intense feelings towards entrepreneurial activities occur over time, they are enduring rather than momentary (Cardon et al., 2013).

In Cardon and colleagues' theorization, feelings and identity centrality are explored towards three different domains of entrepreneurial tasks and activities: inventing new products and services, founding new organizations and developing organizations beyond their initial survival and success (Cardon et al., 2009; Cardon et al., 2013).

Passion for inventing concerns activities associated with search for new opportunities or solutions to relevant needs and problems; passion for founding is related to wish for identifying the necessary financial, human and social resources in order to create the venture; at the end, passion for developing is related to the enterprise's growth over time (Cardon et al., 2013).

Passion is recognized as a key element of entrepreneurship (Cardon et al., 2009; Cardon et al., 2013), because it can enhance ability to raise funds from venture capitalists, it fuels motivation of employees, further it is associated with characteristics of creativity, persistence and absorption of the entrepreneur.

Despite passion has been said an important aspect of entrepreneurship, there is still a gap in understanding the impact of EP with systematic empirical evidence (Cardon et al., 2013). In order to fill this gap, Cardon et al. (2013) conducted a series of studies to develop and validate a scale for measuring EP. In line with theoretical arguments, the Authors developed items to capture the dimensions of intense positive feelings and identity salience experienced by the entrepreneur, focused on domains of inventing, founding and developing.

In its original version, EP Scale consists of 13 items, 4 of which evaluate intense positive feelings for inventing (e.g. “It is exciting to figure out new ways to solve unmet market needs that can be commercialized”), 3 items measure intense positive feelings for founding (e.g. “Establishing a new company excites me”), 3 items evaluate intense positive feelings for developing (e.g. “I really like finding the right people to market my product/service to”), and finally 3 items measure identity centrality of the three domains to the person (e.g. “Inventing new solutions to problems is an important part of who I am”).

The aim of the present study is to explore the psychometric properties of the 10-item Italian version of the EP Scale, which measures the intense positive feelings towards the domains of inventing, founding and developing and do not consider the 3 items that capture the identity centrality of the three domains. Only one item to detect the identity centrality of each domain could be a limit of the instrument, therefore

we decided to focus only on the intense positive feelings as dimension of passion in the three domains.

In the first step, the factorial validity of the 10-item scale was examined through a confirmatory factor analysis (CFA), in order to verify the three factors structure. In the second step, correlations between EP in the three domains and other constructs that are expected to correlate with it were investigated, in order to test the convergent validity of the Italian version of the scale.

## METHODS

### Participants

The group included 1173 participants (65% male and 35% female). The ISTAT Report (2016) showed that the 23% of the Italian labour force are self-employed persons or entrepreneurs; among them, 70% are male and 30% are female.

The first subgroup included 535 entrepreneurs and startupper (68% male and 32% female;  $M_{\text{age}} = 35.46$ ,  $SD = 8.65$ ; 19% with high school diploma, 48% with bachelor or postgraduate degree and 28% with PhD or Master degree). The second one consisted of 638 aspiring entrepreneurs and startupper (62% male, 32% female;  $M_{\text{age}} = 28.53$ ,  $SD = 6.44$ ; 30% with high school diploma, 54% with bachelor or postgraduate degree and 11% with PhD or Master degree).

### Measures

The Italian version of the EP Scale consists of 10 items selected by the original 13-item Cardon and colleagues' EP Scale (2013). Items are divided into three domains: inventing (4 items), founding (3 items) and developing (3 items). Items were translated from English to Italian by an Italian native-speaker researcher. Then, an expert English mother tongue made a back-translation from Italian into English. The result was a good correspondence between items. Respondents were asked to indicate their agreement by means of a 7-point Likert scale (1 = very strongly disagree, 7 = very strongly agree), according to Authors who recommended to use 7- or 9-point scales in order to guard against issues of range restriction (Cardon et al., 2013). Table 1 shows the original version and the Italian version of the EP Scale.

The other measures used in this study, all rated on

a 7-point Likert scale (1 = very strongly disagree, 7 = very strongly agree), were the following.

- *Self-efficacy*: measured by 10 items (Schuler, Thornton, Frintrup & Mueller-Hanson, 2002); an example item is “I am confident that I will succeed”. The CFA performed on the whole group confirmed the 1-factor structure for the Italian version of the scale:  $\chi^2_{(35)} = 348.49$ ,  $p < .001$ ; CFI = .91; TLI = .90; RMSEA = .08 (.05, .08); SRMR = .04. The factor loadings ranged from .48 to .69. Cronbach Alpha in this study was .86.
- *Internal locus of control*: measured by 6 items (Argentero & Vidotto, 1994); an example item is “There is a direct relation between a person's skills and her/his role”. Cronbach Alpha was .81.
- *Resiliency*: measured by 10 items (Di Fabio & Palazzeschi, 2012); an example item is “I tend to bounce back after illness, injury, or other hardships”. Cronbach Alpha was .81.
- *Need for achievement*: measured by 10 items (Borgogni, Petitta & Barbaranelli, 2004); an example item is “Difficult and challenging activities attract me”. Cronbach Alpha was .88.
- *Risk propensity*: measured by 10 items (Dahlbäck, 1990; Vecchione & Barbaranelli, 2005); an example item is “I often dare to do risky things which other people are reluctant to do”. Cronbach Alpha was .72.
- *Entrepreneurial intention*: measured by 5 ad-hoc items adapted from Linan & Chen work (2009); an example item is “My professional aim is to become an entrepreneur”. The CFA confirmed a 1-factor structure for the Italian scale:  $\chi^2_{(5)} = 55.98$ ,  $p < .001$ ; CFI = .95; TLI = .91; RMSEA = .07 (.04, .08); SRMR = .04. The factor loadings ranged from .63 to .76. Cronbach Alpha was .81.

### Procedure

Participants completed the online self-report questionnaire STEPS (STartupper and Entrepreneurs Potential Survey) in the context of a project aimed at evaluating and developing the entrepreneurial potential of entrepreneurs and aspirants, promoted by an Italian no profit organization (Human Plus Foundation). The voluntary and not paid participation to the research, and the anonymity and confidentiality of the data were emphasized. We obtained informed consent by participants.

**Table 1** – Entrepreneurial Passion Scale item

Original items	Italian translations
<b>Passion for inventing</b>	
1. It is exciting to figure out new ways to solve unmet market needs that can be commercialized.	<i>Mi piace trovare nuovi modi per soddisfare esigenze del mercato che possono essere commercializzate.</i>
2. Searching for new ideas for products/services to offer is enjoyable to me.	<i>È divertente cercare nuove idee di prodotti/servizi da offrire.</i>
3. I am motivated to figure out how to make existing products/services better.	<i>Sono motivato a trovare modi per rendere migliori i prodotti/servizi esistenti.</i>
4. Scanning the environment for new opportunities really excites me.	<i>Mi piace analizzare il mercato in cerca di nuove opportunità.</i>
<b>Passion for founding</b>	
5. Establishing a new company excites me.	<i>Penso che fondare una nuova azienda sia entusiasmante.</i>
6. Owning my own company energizes me.	<i>È stimolante essere il proprietario di un'azienda.</i>
7. Nurturing a new business through its emerging success is enjoyable.	<i>È piacevole coltivare un nuovo business emergente.</i>
<b>Passion for developing</b>	
8. I really like finding the right people to market my product/service to.	<i>Mi piace molto individuare le persone giuste con le quali commercializzare un prodotto/servizio.</i>
9. Assembling the right people to work for my business is exciting.	<i>È stimolante mettere insieme le persone giuste con le quali lavorare al business che mi interessa.</i>
10. Pushing my employees and myself to make our company better motivates me.	<i>È motivante spingere i miei collaboratori e me stesso a rendere la nostra azienda migliore.</i>
Likert frequency scale from 1 = <i>strongly disagree</i> to 5 = <i>strongly agree</i>	<i>Scala di risposta Likert da 1 = per niente d'accordo a 7 = del tutto d'accordo</i>

## Statistical Analysis

In order to assess the factorial validity of the Italian EP Scale, a confirmatory factor analysis (CFA) and a multigroup CFA were performed using the software Mplus 7. The CFA method of estimation was maximum likelihood (ML). According to the literature, several goodness-of-fit criteria were considered: the  $\chi^2$  goodness-of-fit statistic; the Root Mean Square Error of Approximation (RMSEA); the Comparative Fit Index (CFI); the Tucker Lewis Index (TLI); the Standardized Root Mean Square Residual (SRMR).

As measures of reliability, Cronbach's Alpha and the corrected item-total correlation coefficients were calculated for the three domains. Finally, in order to investigate the concurrent validity, also correlations between EP in the three domains and other constructs indicated in literature as potentially related to EP were tested: entrepreneurial intention, self-efficacy, internal locus of control, resiliency, need for achievement, risk propensity (e.g. Cardon et al., 2013; Molino et al., 2015).

## RESULTS

### Confirmatory factor analysis

As shown in Table 2, CFA for different factor models were tested in the whole group. The best fitting model resulted for the three-factor structure of the scale, in line with the original version (Cardon et al., 2013).

Figure 1 shows the standardized three-factor solution, with factor loadings ranging from .60 to .73 for passion for inventing, from .64 to .79 for passion for founding, and from .55 to .71 for passion for developing.

A multigroup CFA was conducted to test the measurement model also across the two different subgroups, entrepreneurs and aspiring entrepreneurs. The model showed a good fit to the data:  $\chi^2_{(85)} = 369.67, p < .001$ ; CFI = .92; TLI = .91; RMSEA = .06 (.05, .08); SRMR = .04. In entrepreneurs subgroup, factor loadings ranged from .44 to .66 for passion for inventing, from .68 to .79 for passion for founding, and from .42 to .59 for passion for developing. In aspirants subgroup, factor loadings ranged from .49 to .74 for passion for inventing, from .64 to .73 for passion for founding, and from .67 to .70 for passion for developing.

### Reliability

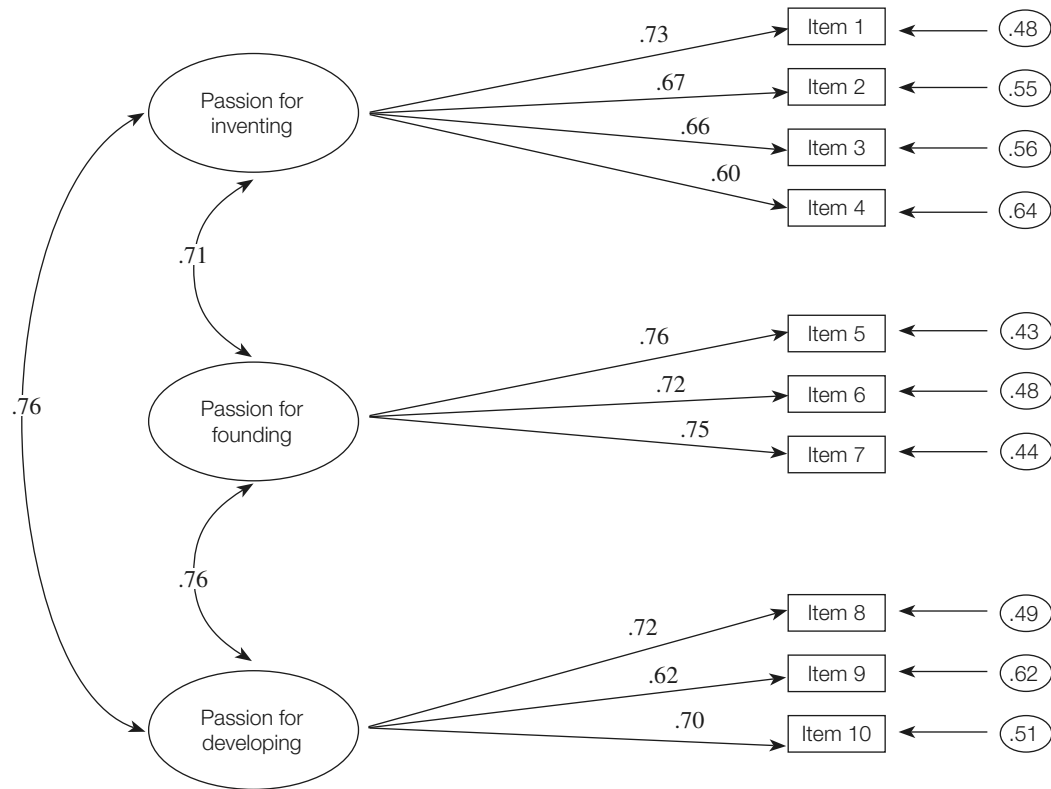
Internal consistency of the measures was good, since all values of Cronbach's Alpha met the criterion of .70: as Table 3 shows, Alpha coefficient was .72 for passion for inventing, .80 for passion for founding and .73 for passion for developing. The alpha-if-item-were-deleted values revealed that any item decreased the Alpha value in all the cases. Moreover, corrected item-total correlations ranged from .46 to .56 for passion for inventing, from .62 to .67 for passion for founding and from .52 to .62 for passion for developing. Therefore, all scores were above the cut-off value of .40.

**Table 2** – Results of CFA, alternative models (N = 1173)

	$\chi^2$	<i>df</i>	<i>p</i>	CFI	TLI	RMSEA	SRMR	Comparison	$\Delta\chi^2$	<i>p</i>
<b>M<sub>1</sub></b>	345.76	32	<.001	.95	.92	.05 (.05, .07)	.04			
<b>M<sub>2</sub></b>	822.44	35	<.001	.86	.82	.12 (.11, .12)	.06	M <sub>2</sub> –M <sub>1</sub>	476.68	<.001
<b>M<sub>3</sub></b>	1771.67	35	<.001	.70	.61	.17 (.16, .18)	.26	M <sub>3</sub> –M <sub>1</sub>	1425.91	<.001

*Note.* M<sub>1</sub>, 3-factor model; M<sub>2</sub>, 1-factor model; M<sub>3</sub>, 3-factor model, no co-variations.

*Legenda.* CFI = Comparative Fit Index; TLI = Tucker Lewis Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

**Figure 1** – CFA (ML estimation) standardized solution for the Italian Entrepreneurial Passion Scale (N = 1173)

## Correlations with other related dimensions

In order to test the concurrent validity of the EP Scale Italian version, correlation between EP in the three domains and other constructs potentially related to EP were computed (Table 3). All the three domains significantly and positively correlated with entrepreneurial intention, self-efficacy, internal locus of control, resiliency, need for achievement and risk propensity.

## DISCUSSION AND CONCLUSION

The purpose of this paper was to validate the Italian version of an instrument designated to evaluate EP. Findings confirmed the factor structure, reliability and validity of the Italian EP Scale. Results from CFA indicated that the Italian EP Scale measures intense positive feelings towards three distinct domains: inventing, developing and founding.

Furthermore, the correlation between EP in the three domains and the following constructs, related to EP in literature (e.g. Cardon et al., 2013; Molino et al., 2015), was confirmed: entrepreneurial intention, self-efficacy, internal locus of control, resilience, need for achievement and risk propensity.

The study confirmed that the Italian version of EP Scale can be administered to entrepreneurs, starttuppers and aspirant entrepreneurs with useful implications for future research and practice. As regards the instrument, this study contributed to the further improvement and testing of the Italian version of EP Scale. From the research point of view, the scale could be used to investigate the role of the three EP domains in the dynamics related to entrepreneurial intention and performance, in the Italian context. Moreover, the use of an international scale could support the cross-cultural research and the understanding of differences among countries in entrepreneurial field. Furthermore, concerning the practical implications, this instrument can be adopted by practitioners in the Italian context in order

**Table 3** – Correlations (Pearson's *r*), means, standard deviations and reliabilities of all variables

	1	2	3	4	5	6	7	8	9
1. Passion for inventing	(.72)								
2. Passion for founding	.53**	(.80)							
3. Passion for developing	.52**	.53**	(.73)						
4. Entrepreneurial intention	.20**	.34**	.15**	(.81)					
5. Self-efficacy	.42**	.43**	.39**	.22**	(.86)				
6. Internal locus of control	.23**	.28**	.21**	.13**	.47**	(.81)			
7. Resiliency	.48**	.40**	.43**	.19**	.73**	.34**	(.81)		
8. Need for achievement	.53**	.50**	.48**	.18**	.73**	.35**	.69**	(.88)	
9. Risk propensity	.18**	.19**	.20**	.06*	.28**	.08*	.30**	.32**	(.72)
<i>M</i>	6.32	6.49	6.58	4.70	5.65	4.98	5.84	6.19	3.98
<i>SD</i>	.68	.73	.58	2.35	.75	1.10	.67	.65	.78

Note. Cronbach's Alpha on the diagonal; \*  $p < .05$ ; \*\*  $p < .01$ .

to evaluate EP and its dimensions, and to support training, mentoring, coaching, vocational and recruitment activities (Cortese et al., 2015; Molino et al., 2015). In conclusion, this study contributed to the Italian context in different ways, providing a valid and simple-to-use tool to evaluate the EP of both entrepreneurs and aspiring entrepreneurs, useful to support researchers and practitioners who want to deepen the psychological dynamics involved in entrepreneurial processes.

In spite of its contribution, this study results should not be interpreted without taking into account some limitations. First, the two convenience subgroups are not representative. Secondly, the study measured only single-source self-report data, which means the possibility of common method bias. Objective data of the enterprises, observation of work behaviours and other-report data could be useful in future studies in order to minimize the potential effects of common

method variance. Moreover, this is a cross-section study; it would be necessary to evaluate the Italian version of the scale in more complex and longitudinal research design and the reliability of the measure should be investigated by means of a test-retest procedure. Finally, this version of the original EP Scale considers the intense positive feelings toward the domains of inventing, founding and developing, and not the centrality of these domains to entrepreneurs' self-identity; future studies should work on an exhaustive tool able to measure the identity centrality, as well as the intense positive feelings, in the three domains. Nevertheless, the Italian version of the EP Scale can be considered a useful and complete instrument to evaluate EP in the three domains theorized by Cardon et al. (2013) among Italian entrepreneurs and aspirants.

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