PRAGMATISM, NEED FOR COMFORT AND NEED FOR ACCEPTANCE – PSYCHOLOGICAL TRAITS FOR SUCCESSFUL ENTREPRENEURSHIP IN PORTUGAL

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ABSTRACT

The purpose of this study was to revisit the inventory developed by Galvão and Pinheiro (2016), measuring seven psychological traits common to business owners, and to propose an inventory that could improve the measuring of psychological traits of Portuguese business owners.

The 26 items inventory was used on two samples. Sample 1, included 229 individuals (33.2% business owners) and Sample 2, used to cross-validate findings, included 257 individuals (44.0% business owners).

Correlational statistical tests and a Principal Component Analysis were carried out, resulting in items loading to 3 components. The loading items were presented to 17 business owners to validate the trait they most associated to each question, resulting in a fit to 16 items also identified by the authors as having theoretical foundations. Structural Equation Modelling was performed showing good fits for both sample 2 (RMSEA=0.052; TLI=0.942; CFI=0.951) as sample 1 (RMSEA=0.036; TLI=0.966; CFI=0.971).

With this study we were able to create the Portuguese Entrepreneurial Psychological Traits Inventory (PEPTI), an inventory that measures psychological traits that are significantly higher in business owners and that is adapted to Portuguese culture and that overcame the issues pointed out by Galvão and Pinheiro (2016) in their study.

Keywords: Entrepreneurial Drive, Business Owners, Psychological Traits, Inventory.

JEL Classification: C93, L26, M13

1. INTRODUCTION

The word entrepreneurship has become a common place in Portugal as in many European countries. This is partly due to low economic growth, high levels of unemployment and low expectations of short-term improvements.

Several authors have pointed out that this situation stimulates entrepreneurship as a means to economic growth and job creation, even if many times self-employment (Acs, 1992; Carree & Thurik, 2003, 2006; Beck, Demirguc-Kunt, Laeven & Levine, 2008). This economic environment has led several economic policy makers across Europe, including the European Commission, to actively promote entrepreneurship (OECD, 1998; European Commission, 2013).

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However, the success of entrepreneurship and support to entrepreneurs has proven different results across different countries, and Portugal has proven not to show the best track record possible.

According to The Global Entrepreneurship Index (Acs, Szerb, Autio & Lloyd, 2016), Portugal ranks 29th worldwide in with a mere 47.2 points out of 100 while the number one (USA) scores 83.4 points. In terms of the Entrepreneurial Attitudes sub-index, Portugal almost ranks last with 50.3 points (in Europe only proceeded by Slovenia with 50.0 points) scoring the lowest in Opportunity Perception, Networking and Cultural Support.

According to the OECD, Portugal has created in the first quarter of 2016, 21.87% more companies when compared to the same period in 2007 but at the same time, 57.95% more companies closed when compared with that same period, showing a clear negative net result.

Several reasons for this low level of success have been pointed out like: lack of management know-how, scarceness of equity, country risk, market size, psychological traits and several others. However, whereas most of these issues may be overcome by schooling, state aid and/or internationalization processes, psychological traits are harder to measure and to change.

Galvão, Fernandes and Pinheiro (2016), in a study performed between June 2015 and May 2016, where they followed the founders of 10 Portuguese start-ups, identified their capacity to handle frustration, mainly originated by rejection of their projects by investors, as an indicator of project survival. In this study, the entrepreneurs stated that more than technical skills, their psychological strength was challenged daily.

In a posterior research, Galvão and Pinheiro (2016) developed a scale to measure seven psychological traits related to entrepreneurship – need for achievement; need for affiliation; need for power; tolerance to ambiguity; risk taking propensity; locus of control; resilience – which, notwithstanding resulting in a good model fit, showed too high covariance between several of the traits and raised questions to the authors about its adaptability to Portuguese culture.

The aforementioned led to the need to revise the scale of Galvão and Pinheiro (2016) and to propose a different scale where the aforementioned issues would be eliminated.

1.1 Entrepreneurship and Psychological Traits

The study of psychological traits associated to entrepreneurs or entrepreneurship, has been carried out for several decades. Schumpeter and later McClelland, normally named as the fathers of the field of entrepreneurship research, took a psychological perspective, with individuals being the major objects of entrepreneurship research. However, during the period 1980-2005 this changed in mainstream entrepreneurship research. During this time period the objective was to explain entrepreneurship by using economic and strategy theories (Kirchhoff, 1991). However, more recently, the importance of a psychological perspective, as "entrepreneurship is fundamentally personal" has gained importance in research again (Baum, Frese, Baron & Katz, 2007). Although there are arguments to defend that using traits to characterize entrepreneurs is not appropriate (Gartner, 1988), there exists a fair consistency in the literature investigating entrepreneurial traits as the definition of characteristics that distinguish entrepreneurs from non-entrepreneurs. Hisrich (1988; 1990) in his research on entrepreneurial behavior notes that the entrepreneur is characterized, as someone who shows initiative and creative thinking, is able to organize social and economic mechanisms to turn resources and situations to his or her practical account, and accepts risk and failure as part of being an entrepreneur.

However, the lack of a solid theoretical foundation has been responsible for the fragmentation of research on entrepreneurship, often resulting in studies that examine the same or similar issues very much limited to a certain disciplinary perspective ignoring other

perspectives. It is only in the last two decades that scholars have begun to address the need for integrative typologies and paradigms that can provide a coherent platform for diverse research efforts (Wortman, 1987; Hisrich, 1990; Lumpkin & Dess, 1996). Theoretical work in entrepreneurship shows the awareness that there is a need for frameworks that will facilitate the synthesis of existing research and the generation of new studies that address the gaps (Van de Ven, 1992; Lumpkin & Dess, 1996; West, 1997).

Several researchers have tried to identify psychological traits that somehow can predict entrepreneurial drive. However, many of these studies have been inconclusive, or when conclusive, show inadequate on a broader level, for instance, when the study is carried out in several countries.

The focus of our study is on the Portuguese reality where the aforementioned has also been the case in several studies. Rego and Leite (2003) concluded that a scale measuring psychological traits on a group of students, lost part of their validity simply by the fact of applying the scale validated for Portugal (Rego, 2000) to a similar sample in Brazil. Possible reasons for these major differences could be a result of several factors such as cultural differences, language differences (although both populations speak Portuguese, some phrasing and/or technical terms may be different) or from the fact that the samples were solely composed out of students (Rego & Leite, 2003).

Also Galvão and Pinheiro (2016), after developing and validating a 26 items scale to measure seven psychological traits, concluded that their scale might not be the most adequate for the Portuguese population and culture.

Another problem arising from studying entrepreneurial drive or vocation, also in Portugal, is the fact that most of the existing studies focus on the entrepreneurial drive or motivation of higher education students or starting entrepreneurs. The few studies that focus also on other population groups, normally have small samples and include professionals in general and not necessarily business owners and are generally focused on business managers.

The first study, with a larger sample of respondents (495 respondents) with diverse professional experience, was carried out by Galvão and Pinheiro in 2016 and resulted in a scale to measure seven psychological traits, normally found in the literature related to entrepreneurial drive or motivation. This study (Galvão & Pinheiro, 2016) allowed to identify seven psychological traits that could predict a higher or lower entrepreneurial drive, but showed some fragilities in what concerned adaptability to Portuguese culture and in the adequate model fit on a more detailed level.

2. METHOD

2.1 Participants

We used two samples to perform our analysis on. Prerequisites to be able to answer were: to be over 18 years of age and to be either a business owner, employed or a higher education student. Both samples were subdivided according to four possible professional statuses: business owner; employee; higher education student developing an entrepreneurial project; higher education student not developing an entrepreneurial project. Employees developing or planning to develop an entrepreneurial project were excluded in order to have only non-entrepreneurial employees. This procedure was adapted as the objective of the study was to have clear distinctions in entrepreneurial motivation or drive.

Sample 1 was a convenience sample and included 229 respondents of several origins. Of this sample, 53.7% were female, and in terms of the division by professional or educational status 33.2% were business owners, 21.0% higher education students working on an

entrepreneurial project, 23.6% were higher education students without an entrepreneurial project and 22.3% were employed workers.

Sample 2, used for cross-validating the findings from sample 1, was also a convenience sample and included 257 respondents. Of these, 51.0% were male, and in terms of the division by professional or educational status 44% were business owners, 19.8% higher education students without an entrepreneurial project, 19.5% higher education students working on an entrepreneurial project and 16.7% were employed workers.

2.2 Procedure

While previous studies focus on the validity of existing inventories and scales to measure entrepreneurial drive through a set of pre-established psychological and personality traits, our study decided to start without any previously defined set of traits. We did use as a starting point of our study an existing set of questions from Galvão and Pinheiro's (2016) 26 items scale as all items were already properly rephrased to adjust to Portuguese interpretation and culture. Our primary objective was to reanalyse this scale, both in terms of adequacy to the Portuguese entrepreneurial reality as well as on statistical level, in order to develop a scale that would simultaneously meet the following requirements: (i) grouping of items to psychological or personality traits should be according to their interpretation in Portuguese language and culture, (ii) only components with statistical significant differences between business owners and the remaining subgroups would be included, and (iii) the model should show a good statistical fit.

We applied, through an online questionnaire, the 26 items scale developed by Galvão and Pinheiro (2016), on samples 1 and 2 between November 2016 and January 2017. Sample 1 was used for our Principal Component Analysis and sample 2 was used to perform the Confirmatory Factor Analysis. Statistical consistency and reliability were always validated between the two samples after each step.

The items were answered on a 6 points Likert scale where 1 means "don't agree at all" and 6 means "totally agree". Just as in the original 26 items scale (Galvão & Pinheiro, 2016), we also opted for a 6 point scale instead of the more conventional 5 point scale, in order to avoid excessive midpoint answers, common in Portuguese culture where deviations from the "norm" are avoided and as is also common in several other cultures (Lee, Jones, Mineyama & Zhang, 2002).

The questionnaire included a first part with questions about gender, age, and professional status. Business owners were also asked about the age of their company, if they were a founder, how many companies they have owned in total and turnover of their present company. The higher education students developing an entrepreneurial project were also asked for how long they have been working on the project and in what stage the project was.

Statistical analysis was performed in IBM SPSS v23 for OSX and Structural Equation Modelling in IBM AMOS v22 for Windows.

3. RESULTS

Step 1

The first step of our study was to verify if in our sample the mean score on each item was higher for the subgroup "business owners, as was the case with the original 26 items questionnaire developed by Galvão and Pinheiro (2016).

Table 1 presents the mean scores and standard deviation for the 4 subgroups gathered from Sample 1, our base sample.

Table 1. Mean scores and standard deviations for the 4 subgroups – Sample 1

	Student with project		Student w/o project		Business owner		Employee		Total	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Q1	3.6458	1.19377	2.8889	1.09315	5.1053	.94628	3.5686	1.59066	3.9345	1.47793
Q2	3.8333	1.27719	2.9259	1.11341	5.1447	.98933	3.3137	1.55551	3.9389	1.51476
Q3	4.1458	1.25460	3.0741	1.24160	5.0000	1.03280	3.3137	1.54260	3.9913	1.48381
Q4	4.0208	1.17581	3.1667	1.12853	5.0789	.99013	3.3333	1.39523	4.0175	1.40789
Q5	3.5625	1.31935	3.1111	1.17629	5.0132	1.08926	3.3333	1.50555	3.8865	1.49127
Q6	3.7500	1.42172	3.1481	1.29451	5.0000	1.10755	3.0392	1.38507	3.8646	1.52868
Q7	3.6458	1.46577	3.0741	.92862	4.9605	1.12476	3.3333	1.65731	3.8777	1.51104
Q8	3.1458	1.25460	3.0556	1.13962	4.8158	1.11607	3.2745	1.20131	3.7074	1.40394
Q9	3.5208	1.35253	2.9815	.99983	4.7105	1.34478	3.5098	1.46113	3.7860	1.46377
Q10	3.4792	1.42902	3.2963	.98344	4.8553	1.24047	3.3529	1.62263	3.8646	1.49091
Q11	3.5417	1.38316	2.9630	1.13209	4.8947	1.13817	3.3137	1.67917	3.8035	1.53919
Q12	3.2292	1.35646	3.2778	1.08882	4.9605	1.28001	3.3922	1.58844	3.8515	1.53747
Q13	3.2708	1.28394	3.1667	1.05955	4.8816	1.14271	3.1176	1.45117	3.7467	1.46196
Q14	3.5208	1.42902	3.2963	1.26833	4.9079	1.13346	3.4118	1.52547	3.9039	1.49544
Q15	3.0625	1.35907	3.2222	1.11027	4.9474	1.01843	3.3137	1.44900	3.7817	1.46761
Q16	3.2292	1.35646	3.2593	1.16854	4.8289	1.03779	3.5294	1.43322	3.8341	1.41684
Q17	3.3125	1.38620	3.1111	1.19222	5.2105	.80525	3.3922	1.53725	3.9127	1.51925
Q18	3.4583	1.39845	3.2593	1.20040	5.1184	1.00621	3.6667	1.63299	4.0087	1.51308
Q19	3.1875	1.36298	3.1296	.97218	4.9079	1.14517	3.4706	1.54082	3.8079	1.47426
Q20	3.1875	1.39385	2.9815	1.05492	4.9211	1.02973	3.3725	1.69659	3.7555	1.52796
Q21	3.8333	1.46350	2.9630	1.14863	5.1974	.86440	3.4706	1.47449	4.0000	1.50729
Q22	3.4375	1.20117	3.1481	1.05343	4.7632	1.15318	3.3725	1.58696	3.7948	1.42249
Q23	3.4167	1.45622	3.2037	1.07070	4.8947	.96026	3.4118	1.21945	3.8559	1.37050
Q24	3.3542	1.39130	3.1667	1.16149	5.0789	1.05531	3.7059	1.36080	3.9607	1.46396
Q25	3.5833	1.41170	3.0741	1.07899	5.0526	.96464	2.9216	1.54717	3.8035	1.53062
Q26	3.5417	1.27092	3.2037	1.27944	4.9211	1.05531	3.8824	1.35125	3.9956	1.40018

Source: Own Elaboration

From the presented data we confirmed that business owners also in this sample have a higher average score on all original 26 items, which is in line with the previous study performed with this inventory (Galvão & Pinheiro, 2016). Also, students developing an entrepreneurial project show higher mean scores when compared with their peers that are not developing an entrepreneurial project. However, notwithstanding that in the case of the study that defined the 26 items questionnaire, all items showed statistical significant differences for the grouping item "professional status", at this stage, and taking our sample, we were only able to affirm that on average business owners scored higher.

Step 2

As the second step of our study we performed a Principal Component Analysis (PCA), for components with an Eigenvalue of 1 and higher, to uncover the underlying structure of the data. We decided for this route, as our starting point was to question all findings of previous studies, which were all based on existing theoretical constructs. Therefore, the number of components and the component to which each item belonged had to be questioned too. In other words, our objective was to reduce our correlated observed variables to a smaller set of important independent composite variables without any restrictions created by previous studies.

We first checked whether the sample size was adequate for a PCA using the Kaiser–Meyer–Olkin (KMO) measure. The KMO of our sample was 0.933, which, according to Kaiser (1974), is "marvellous".

In our first simulation we did not restrict the number of components, leading us to a five components structure. However, after analysing these first results, we concluded that the way items were grouped together didn't adhere to any possible theoretical, or even logical construct. The same type of results was obtained with a forced four components model. However, restricting the model to three components brought us to a structure as shown in Table 2.

Table 2. Princpal Component Analysis – Varimax Rotation Component Matrix – Sample 1

	Component		
	1	2	3
Q18	.704		
Q12	.645		
Q25	.615		
Q1	.555		.439
Q26	.539		
Q16	.505		
Q2	.457		
Q22	.449		
Q7	.436		
Q15	.430	.410	
Q17		.706	
Q19		.658	
Q24		.585	
Q20		.572	
Q11		.556	
Q13		.555	
Q14		.510	
Q5			.678
Q9			.674
Q6			.639

Q21			.592
Q8			.558
Q4	.412		.489
Eigenvalue	9.504	1.126	1.113
% of variance	36.555	4.329	4.279
Cronbach α	0.849	0.818	0.800
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.			

Source: Own Elaboration

Notwithstanding the fact that items Q1, Q4 and Q15 loaded to more than one factor, it was decided to maintain these questions as the authors didn't want to eliminate any item before a validation with business owners, keeping the option to later on in the study eliminate items if theory, logic or other tests would prove their statistical invalidity.

From the data presented in Table 2, we can observe that 45.163% of the total variance is explained by these factors and that the Cornbach Alphas of the three components show a good internal consistency meeting Nunnally and Bernstein's (1994) criterion for acceptable internal consistency (Cronbach's $\alpha \geq 0.70$).

Step 3

Our third step consisted in presenting the items that loaded to the three factor structure to a group of 18 business owners, requesting them to associate three words to each item that would best describe the trait they associated to each item when answering the question. Their answers were discussed in individual interviews with each of them. Of the 26 items, only 16 were consistently considered to belong to a similar trait by these business owners. In what concerns the other items, the business owners were not able to identify them with the other items of the group or, in the few cases where they were able to see any link, they mentioned that it was farfetched. The final result was that, considering only the 16 items where a clear grouping was possible, the first component presented in Table 2 was best described by the word "Pragmatism", the second component by the word "Comfort" and the third component by the word "Acceptance". As the words and traits were given and described in Portuguese, taking into account their meaning in Portuguese as well as the emotional charge they have in Portuguese, the best way to describe these traits in English are: "Pragmatism", which in both languages has very similar meaning and emotional charge, "Need to be in a Comfort Zone" and "Need to be Accepted by Others". This complied with our first requisite: (i) grouping of items to psychological or personality traits should be according to their interpretation in Portuguese language and culture.

Thus, after this step, the scale had 16 items measuring 3 distinct psychological traits. The 16 items are grouped as follows, ordered by their respective loading factor: Pragmatism with items 18, 12, 25, 1, 26, 16, 2, 22, 7 and 15; Comfort with items 11, 13 and 14; and Acceptance with items 5, 9 and 6.

Step 4

Having at this stage a 16 item scale that met both the requirement of presenting higher mean scores for business owners as well as having its items grouped in components that made sense not only to the authors but more importantly to business owners, we now had to validate if

all findings complied with our second requisite: only components with statistical significant differences between business owners and the remaining subgroups would be included.

We started by performing tests of normality, concluding from the results of both the Kolgomorov-Smirnov as well as the Shapiro-Wilk tests on both samples, that our data did no not have a normal distribution, which was also validated through visual observations of the Stem-and-Leaf, Normal Q-Q and Box plots. Notwithstanding the sample sizes, which could allow us to perform either parametric as non-parametric tests, our choice was to perform non-parametric tests to verify if the differences between groups that we observed had statistical significance. The results from the Kruskal-Wallis test are presented in Tables 3 and 4.

Table 3. Kruskal-Wallis test - Mean Ranks - Sample 1

	Sit_Prof_Div	N	Mean Rank
Pragmatism	Student with project	48	97.25
	Student w/o project	54	61.49
	Business owner	76	184.59
	Employee	51	84.66
	Total	229	
Comfort	Student with project	48	96.53
	Student w/o project	54	75.16
	Business owner	76	175.76
	Employee	51	84.03
	Total	229	
Acceptance	Student with project	48	102.97
	Student w/o project	54	70.19
	Business owner	76	174.97
	Employee	51	84.40
	Total	229	

Source: Own Elaboration

Table 4. Kruskal-Wallis test - Test Statistics - Sample 1

	Pragmatism	Comfort	Acceptance
Chi-Square	133.493	99.202	100.249
df	3	3	3
Asymp. Sig.	.000	.000	.000
Grouping Variable: Professional status			

Source: Own Elaboration

From the results presented in Tables 3 and 4 we could reject the null hypothesis, therefore concluding that the differences in average score between the professional status groups were statistical significant.

In order to define for which pairs of groups the differences were statistically significant, pairwise tests were performed of which the results are presented in Table 5.

Table 5. Pairwise Kruskal-Wallis tests - Sample 1

Sample 1-Sample 2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj. Sig.
Pragmatism					
Student w/o project-Employee	-23.166	12.923	-1.793	.073	.438
Student w/o project-Student w/ project	35.759	13.129	2.724	.006	.039
Student w/o project-Business owner	-123.101	11.780	-10.450	.000	.000
Employee-Student w/ project	12.593	13.310	.946	.344	1.000
Employee-Business owner	99.935	11.980	8.342	.000	.000
Student w/ project-Business owner	-87.342	12.202	-7.158	.000	.000
Comfort					
Student w/o project-Employee	-8.872	12.879	-.689	.491	1.000
Student w/o project-Student w/ project	21.374	13.084	1.634	.102	.614
Student w/o project-Business owner	-100.599	11.739	-8.570	.000	.000
Employee-Student w/ project	12.502	13.264	.943	.346	1.000
Employee-Business owner	91.727	11.939	7.683	.000	.000
Student w/ project-Business owner	-79.225	12.160	-6.515	.000	.000
Acceptance					
Student w/o project-Employee	-14.208	12.883	-1.103	.270	1.000
Student w/o project-Student w/ project	32.774	13.088	2.504	.012	.074
Student w/o project-Business owner	-104.773	11.743	-8.922	.000	.000
Employee-Student w/ project	18.567	13.268	1.399	.162	.970
Employee-Business owner	90.565	11.943	7.583	.000	.000
Student w/ project-Business owner	-71.998	12.164	-5.919	.000	.000
Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same. Asymptotic significances (2-sided tests) are displayed. The significance level is .05.					

Source: Own Elaboration

What can be observed in Table 5 is that for all combinations where Business Owners are one of the pairs, the differences in scores are statistically significant ($p<0.0001$), therefore complying with our defined second requisite.

Step 5

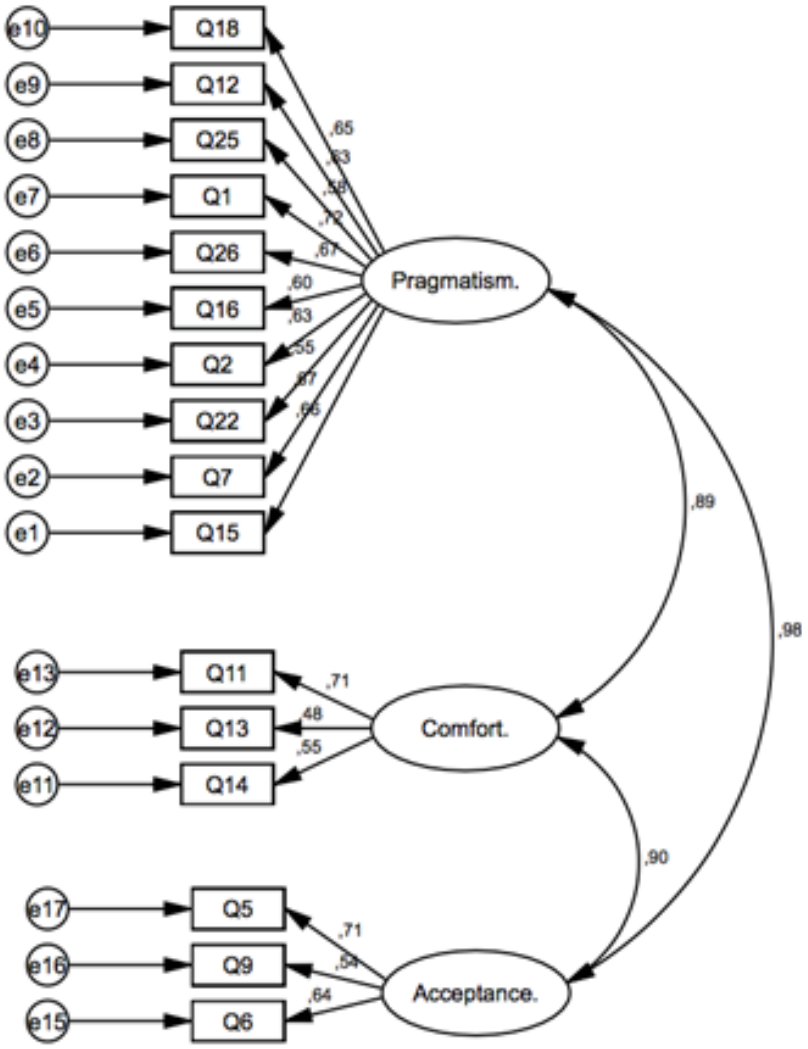
At this stage a 16 items scale with items phrased correctly according to Portuguese language, interpretation and culture, a set of three traits that gathered consensus both from the authors as well as from a group of business owners and where the higher mean scores of business owners when compared to the other subgroups of respondents were statistically significant, was created. This meant that we were in the position to verify if the scale would comply with our third requisite: (iii) the model should show a good statistical fit.

In order to achieve this goal, we performed model tests based on structural equation modelling (SEM) methods using maximum-likelihood estimation as implemented in IBM AMOS v22, analysing the three components' model that was suggested by the previous

steps and which grouped items to the traits: Pragmatism; Comfort; and Acceptance. For this step, we used Sample 2, our cross-validating sample, as data source.

The path diagram we obtained is depicted in Figure 1.

Figure 1. Structual Equation Modeling Path Diagram - Sample 2



Source: Own Elaboration

The model fit indices from applying the analysis on both samples showed the results as presented in Table 6, where we also present the indices of Galvão and Pinheiro's (2016) study.

Table 6. SEM model fit indices - Sample 2

Sample	X^2	df	X^2/df	CFI	TLI	RMSEA
1 (N=229)	131.199	101	1.299	0.971	0.966	0.036
2 (N=257)	170.620	101	1.689	0.951	0.942	0.052
O (N=495)	304.562	186	1.637	0.953	0.945	0.040

X^2 = chi-squared, df=degrees of freedom, CFI=comparative fit index, TLI=Tucker-Lewis index, RMSEA=root mean square error of approximation.

Source: Own elaboration for Samples 1 and 2, Galvão and Pinheiro (2016) for the original 26 items inventory (O)

Considering existing literature, the recommended criteria for acceptance for the above indices are: X^2/df < 2 (Ullman, 2001) or <5 (Schumacker & Lomax, 2004), CFI ≥ 0.95, TLI ≥ 0.95 and RMSEA < 0.6 (Hu & Bentler, 1999).

Given these criteria, our model shows a good fit with both samples, leading us to conclude that the 16 items model, measuring three psychological traits – Pragmatism, Comfort and Acceptance – met our third requisite: (iii) the model should show a good statistical fit.

Notwithstanding that the original 26 items scale from Galvão and Pinheiro (2016), showed better indices than our sample 2, in the present study the excessive covariance between some of the latent factors was eliminated, thus solving the issues that these authors themselves stated in their article.

We can therefore conclude that we reached the point of having a reliable inventory, that measures psychological traits that are significantly higher in business owners, that is adapted to Portuguese culture, language and interpretation and that is applicable to the public in general, calling it the Portuguese Entrepreneurial Psychological Traits Inventory (PEPTI).

4. DISCUSSION

Our results show that there is a set of three traits where business owners consistently score higher than other active adults. These differences, besides being statistically significant are also clearly visible when comparing mean scores per item, where in all items the differences are close to 1 or even more than one point, on a 6 point scale. These differences can't be ignored, and given the statistical evidence combined with the considerable sample sizes, can also not be faced as pure coincidence.

Also when we compare the scores between higher education students, the ones developing an entrepreneurial project show, on average, higher scores than their peers that are not developing one. Even being these differences not statistically significant, comparing the entrepreneurial students with business owners, makes us believe that the measured traits may become stronger over time.

Having a strong personality, especially the capacity to handle frustration, was already pointed out by Galvão, Fernandes and Pinheiro (2016), in their study carried out between mid-2015 and mid-2016, where they accompanied the entrepreneurs of 10 business projects during the first year after incorporation of their companies.

Also when comparing our results with the ones of the original 26 items scale (Galvão & Pinheiro, 2016), our model shows a better fit for Sample 1 and similar values for Sample 2. Besides this similar quality of fit, the now developed 16 items scale overcame the issues that those authors pointed out in the conclusion of their article and which was the primary reason for us to re-evaluate the scale, namely too high covariance between two of the latent variables which made the model borderline in terms of acceptance.

As far as we were able to assess from the revised literature, this was the first research carried out in Portugal, questioning and altering where necessary the theoretical frameworks of international, mostly USA, inventories measuring entrepreneurial psychological traits. The studies that were consulted, all without any exception, tested if those theoretical constructs were also valid for the Portuguese population, after proper translation of the original English inventories. The authors eventually eliminated certain items, but the measured traits were never questioned. Also, in all samples used in Portuguese research, the group of business owners was extremely small or even non-existing, resulting mostly in testing entrepreneurial motivation or drive among higher education students and employed workers (even if in some of the latter they were managers in companies).

The implications of the research carried out now, enabled us to define a set of questions through which certain traits can be measured that proved to be consistently more evident in business owners and already evident in higher education students who are developing entrepreneurial projects, being these traits and questions totally adapted to the Portuguese reality.

5. CONCLUSION

Identifying and measuring psychological or personality traits of entrepreneurs or entrepreneurial drive has been studied by various authors over the last decades, although results have many times been disappointing, ambiguous or inconclusive. One of the reasons pointed out for this to happen has been the fact that transposing measuring instruments from one country or culture to another implies, in many cases, different interpretations and reactions.

Culture plays an important role in all social fields and as such also in business and entrepreneurship. It is to be expected that Portuguese business owners, due to their cultural heritage and traits, will value professional life-related factors differently than, for instance, an United States business owner. As such, we firmly believe that a study needed to be conducted to create a measuring instrument for entrepreneurial drive or motivation that would take into account these cultural differences.

The research carried out for this study enabled us to develop and validate a 16 items inventory that measures three psychological traits that score consistently higher among business owners when compared to other groups of active adults. Also in what concerns the higher education students, the ones developing entrepreneurial projects score, on average, higher than their colleagues who are not developing an entrepreneurial project.

Combining these two findings, make us strongly belief that the traits that characterise business owners are already present in people that are developing or seriously thinking about developing an entrepreneurial project and that these traits become more defined when passing from project to a real business venture.

In a country where the need for entrepreneurship and business development is paramount, even if it is to create self-employment, being able to help entrepreneurs to identify areas where change can be for the benefit of their projects, is important. Besides technical skills, psychological and behavioural skills and traits are important when developing a business.

As such, the inventory we developed may be a useful instrument in helping (young) entrepreneurs to identify the traits where they show comparatively lower than average scores. By becoming aware of these traits, specific coaching programmes can help (young) entrepreneurs to develop those traits and better prepare them for a future as business owner.

Besides technical skills entrepreneurs, be it starting entrepreneurs or established ones, should be made aware of their psychological and personality traits as developing them may give a competitive advantage as managers and also as entrepreneurs.

Finally, this study was carried out combining psychology and management, thus combining two different approaches to one and the same issue. It was, in our modest opinion, the combination of these skills and schools of thought that enabled us to achieve these very positive results, or said in other words, our strong belief in interdisciplinary approaches to societal challenges made this inventory possible. Combining in the same research group economists, business owners and psychologists in a joint effort to study entrepreneurship is not something new. However, we do believe that in the Portuguese context, these interdisciplinary teams are not common enough whilst they could imply a strong support to entrepreneurs.

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