Does an entrepreneurial spirit animate fresh graduates in their work-seeking during uncertain times?

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1. Introduction

In this paper we examine the entrepreneurial intention of fresh graduates as a probabilistic antecedent of their propensity to create new venture, develop new business concept or behave entrepreneurially within an existing firm. The latter type of propensity, that some scholars name "intrapreneurship" (Krueger and Brazeal, 1994), refers to a proactive attitude that should drive workers' activities irrespective of workplace.

Self-employment is socially relevant because it is world-wide considered a way to improve employment at all levels and, in particular, regarding youth (Duell, 2018). In the EU, in 2017 (European Commission, 2018), self-employment without employees accounted 9.8% of total employment and another 3.9% of self-employment with employees. In Italy, the self-employed accounted 21.9% of the total employment. The problem with self-employment is that, on average, income and job satisfaction of the self-employed are lower than that of employees (Eurofound, 2015). The economic difficulties added by Covid-19 restrictions worsened even graduates' employability. Even though the full effects of pandemic on youth unemployment are yet to be detected, the graduates' transition to work remains a major concern. Besides support of public bodies–which should be addressed in particular to weaker job-seeking categories–it is claimed that graduates become more entrepreneurial (OECD / European Union, 2017). Only so, self-employment can be no longer a necessity but an ambition.

The rest of the paper is organised as follows: Section 2 presents the working hypotheses and the analytical model and Section 3 the main results of data analysis. Section 4 includes the discussion of results and final conclusions.

2. Data, models and methods

Our data refer to graduates from Padua University, the largest university of the Veneto district, Italy. People who graduated from March to September 2020 were sent an email through which they could activate an electronic questionnaire. This survey system allowed to check who responded and send them targeted reminders. The final sample, after the exclusion of medicine students, was composed of 1603 graduates.

The relational model adopted for data analysis refers to the theory of planned behaviour, as proposed in Ajzen (1991). This psychological theory plunges its roots on the hypothesis that one's behavioural intention depends both on individuals' cognitive and non-cognitive traits and their familial and social culture and norms.

A graduate's entrepreneurial intention was estimated by detecting any action related to entrepreneurial purposes he or she has put into practice while searching for a job, irrespective if he or she already had a job. With these data even a dichotomous variable was created (Y=1: at least one action; Y=0: no action). The possible predictors of graduates' entrepreneurial intention were classified in blocks, or factors, termed as follows (see also Figure 1).

    a) *Human capital* (X1), including both knowledge, say the cognitive and mental structures determining how people perceive and integrate new information, and practical intelligence, say doing skills. The analysed variables were: attended

discipline, degree level, final mark, and internship and/or international experience of graduates.

b) *Social capital* (X2), namely the personal and familial relations useful to set an initiative. The analysed variables were: having a sociable personality, having attended a lyceum high school and currently attending social activities (volunteering, sports, music).

c) *Psychological capital* (PsyCap – X3), namely one's positive disposition capable of providing graduates with competitive advantage, including (Robusto et al., 2019): *self-efficacy*, that is having confidence to take on and put forth the effort necessary to succeed at challenging tasks; *optimism*, that is making a positive attribution to succeeding now and in the future; *hope*, that is persevering toward goals and, when necessary, redirecting paths to goals to succeed; and *resilience*, that is, when beset by problems and adversity, sustaining and improving to attain success. In addition, the graduates' *self-awareness*, that is the conscious understanding of their own capacity, and *extraversion*, which indicates how outgoing and social they are, were surveyed.

d) *Proactive attitudes toward labour and education* (X4A). In this work, expected income, autonomy, complexity, challenge and flexibility of the job tasks and roles were hypothesised to characterise the graduates animated by entrepreneurial disposition. The attitude toward education was indirectly measured with the availability to attend again the attended university course, he or she could go back in time.

e) *Risk propensity* (X4B), that is the extent to which graduates are willing to take a chance with respect to possible losses. The risk-propensity/courage factor was measured with five items: 1) If I feel it is relevant to me, I could compromise my relations with important persons; 2) For a valid cause, I could start a conflict in my workplace; 3) Not even an intense social pressure could refrain me from doing what I feel is the right thing to do; 4) I could expose myself to risks if I believe their outcome is important; 5) I am capable to catch sudden opportunities.

f) *Personal and social inadequacies* (X5A) *and LoC (*X5B*) that may either support or obstruct the pathways to entrepreneurship*. LoC is (Robusto et al., 2019) a generalized attitude, belief, or expectancy regarding the nature of the causal relationship between graduates' behaviour and its consequences. A person with a dominant *external* LoC tends to believe that what happens to him/her depends mainly from external forces, like fate or luck; conversely, persons with an *internal* LoC see future outcomes as being contingent on their own decisions and behaviour. Inadequacies and an external LoC may have a push effect while an internal LoC a pull (stress-reducing) effect upon entrepreneurial intention.

The hypotheses can be expressed with a system of equations: $Y=f(X_1, X_2, X_3, X_4, X_5 \mid Z)$ and $X_4=f(X_1, X_2, X_3 \mid Z)$, where: Y denotes the entrepreneurial intention; X_1 the human capital; X_2 the social capital; X_3 the psychological capital; X_4 the attitudes toward labour and education; X_5 the personal and social norms; and Z the control variables (gender: Z_1 and working at graduation: Z_2). The system of equations identifies a path analysis model, say, a model in which the relationships between sets of variables are hierarchical. In our case, the intention, Y, is influenced by one's capitals both directly and through closer-to-Y factors. Control variables are hypothesised to influence intentions only indirectly.

To process the data, we applied a PLS-SEM (Partial Least Squares–Structural Equation Modelling) model (Tenenhaus et al., 2005; Rigdon et al., 2017), a structural equation approach that fits a composite model in which more than one underlying factor is hypothesised. The data were processed with *semPLS* software (Monecke and Leisch, 2012). The software was applied both on the count of actions experienced for self-employment seeking and on a dichotomous Y. The following comments pertain to the dichotomous Y.

In PLS-SEM, let X_i ($i=1,..., k$) be a composite factor of p_i weighted factors v_{ij} ($j=1,..., p_i$), i.e.,
$X_i = \sum_{j=1}^{p_i} w_{ij} v_{ij}$ $(i = 1, ..., k),$ where the w_{ij}'s are the weights to apply to each respective factor to obtain X_i. Each factor is a linear combination of observable variables. This implies that we are interested on the relationship between X_i and the factors and not with the observed variables.

The variance of the composite X_i is the sum of the components' variances plus twice the sum of their covariances, each adjusted by the weights:

$$\sigma^2(X_i) = \sum_{j=1}^{p_i} w_{ij}\, \sigma^2(v_{ij}) + 2 \sum_{j}^{p_i} \sum_{k>j}^{p_i} w_{ij} w_{ik} \sigma(\, v_{ij}\, v_{ik}),$$

where $\sigma^2(v_{ij})$ is the variance of v_i and $\sigma(v_{ij}\, v_{ik})$ ($i=1, ..., k$; $j{\neq}k=1, ..., p_i$) the covariance between indicators v_{ij} and v_{ik} of factor X_i. Random variance, being orthogonal, plays no part in the covariances.

3. Results

The responding graduates were prevalently females (61.1%) and resident in Italy (97.6%). Their activity was: studying (50.0%), realising an internship (6.5%), working (13.8%), seeking for a job (26.3%), or not doing any work- or study-related activity (3.4%). The latter category is usually confused with discouraged, or NEET, people, meaning that they do not do any activity because discouraged even to look for a job. This is not our case, since just 5.5% of these people did not receive any job offer and 87.3% was prepared to look for a job in the following twelve months. The others did not work either because of contingent reasons (disease, maternity) or because waiting to start a new job or the civil service. Definitely, the discouraged varied between 1.2 and 4.3 per thousand. In what follows, we will not analyse this uncertain category.

All disciplines were represented in our sample: hard sciences 6.5%, engineering 24.9%, life sciences 13.2%, social sciences 38.4% and the humanities 17.0%. First-level (Bachelors) numerically prevailed (60.4%) over second-level (Masters) graduates. PhDs were ignored in this research. Graduation marks ranging between 105 and 110 were 52.3% of total marks.
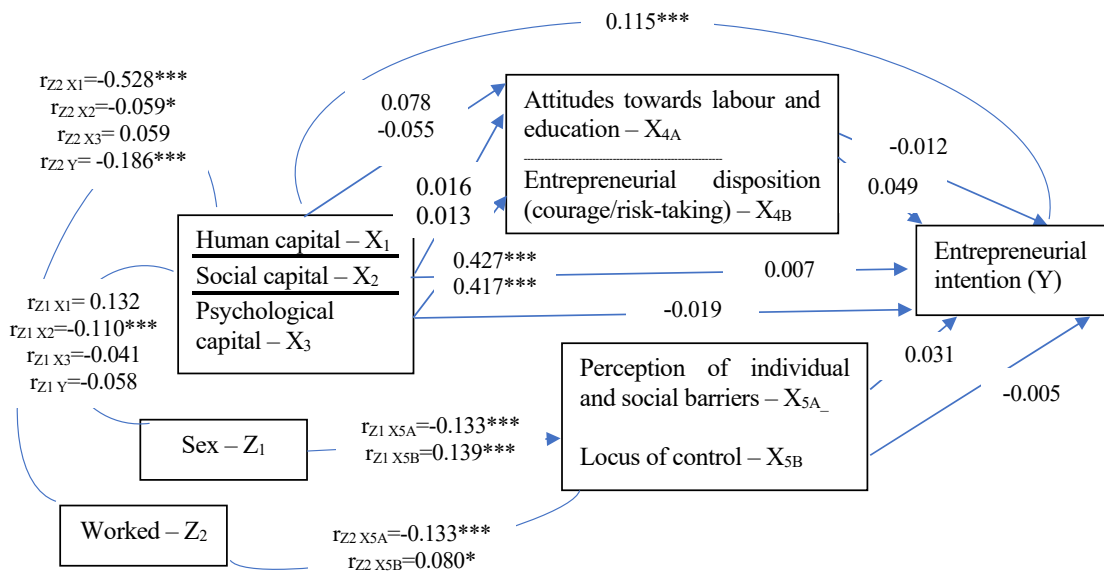

Figure 1. PLS-PM estimates of between factor relationships influencing entrepreneurial intention of fresh graduates *(Significance levels: *** <0.001; ** >0.01; * <0.05)*

Table 1. PLS-SEM estimates of the within-factor relationships (s.e. in brackets).

	% or mean	Estimates	s.e.
X_{11}: Academic discipline: Engineering	24.9	0.160	0.476
X_{11}: Academic discipline: Science (hard)	6.5	0.044	0.112
X_{11}: Academic discipline: Social science	38.4	-0.329	0.332
X_{11}: Academic discipline: Humanistic sciences	17.0	-0.001	0.236
X_{11}: Academic discipline: Life sciences	13.2	0.238***	0.077
X_{12}: High final mark	52.3	0.382*	0.184
X_{13}: Master degree	39.6	0.895***	0.111
X_{21}: Sociable personality	76.7	0.982***	0.013
X_{22}: Volunteering	17.0	0.153*	0.074
X_{23}: Music or chorus player	20.8	0.043*	0.086
X_{24}: Attended Lyceum high school	60.5	-0.248***	0.081
X_{31}: Self-efficacy scores (mean)	0.0	0.806***	0.012
X_{32}: Optimism (mean)	0.0	0.762***	0.015
X_{33}: Resilience (mean)	0.0	0.783***	0.014
X_{34}: Hope (mean)	0.0	0.526***	0.029
X_{35}: Self-awareness	67.3	0.700***	0.021
X_{36}: Extraversion	69.0	0.761***	0.014
X_{41}: Internship during studies	49.0	0.015	0.202
X_{42}: International-Erasmus mobility	20.1	0.043	0.155
X_{43}: Would attend same course	68.9	0.458***	0.086
X_{44}: Degree: less time for job finding	67.2	0.625***	0.164
X_{45}: Degree: professional career	73.6	0.744***	0.100
X_{46}: Degree: regard of peers, family	67.2	0.689***	0.052
X_{47}: Degree: strengthened self-regard	74.6	0.811***	0.051
X_{48}: Job: income relevance	49.9	-0.084	0.105
X_{49}: Job: variety of activities	20.3	0.018	0.064
X_{410}: Job: wide and complex roles	10.0	0.032	0.068
X_{411}: Job: challenging roles	24.7	0.096	0.060
X_{412}: Job: flexible schedule	9.7	-0.095	0.056
X_{413}: Job: autonomy	21.3	-0.057	0.073
X_{414}: Job: high quality outcomes	32.1	0.063	0.117
X_{415}: Courage scores (mean)	0.0	0.875***	0.071
X_{416}: Degree: chances for own business	51.8	0.548***	0.094
X_{51}: Economy unfavourable to youth	60.0	0.769***	0.022
X_{52}: Limited job offers	58.3	0.762***	0.022
X_{53}: Jobs just for friends and "wise guys"	46.4	0.622***	0.033
X_{54}: Italy is not a country for youth	47.2	0.692***	0.030
X_{55}: Youngsters high expectations	51.2	0.196***	0.066
X_{56}: Youngsters low adaptability	47.1	0.135	0.072
X_{57}: Inadequate competencies	57.2	0.540***	0.041
X_{58}: Employers just for profit	60.1	0.742***	0.026
X_{59}: Job seeking is not supported	57.3	0.681***	0.030
X_{510}: Too few insertion programs	61.6	0.709***	0.027
X_{511}: Platforms inadequate for search	49.0	0.682***	0.030
X_{512}: Internal LoC (mean, scores)	0.0	0.993***	0.157
X_{513}: External LoC (mean, scores)	0.0	-0.091	0.275
R^2 (all factors with Y)	=	0.077	
Average within-factor R^2	=	0.140	

The inclination rate for fresh graduates to start an own business is 10%. So, the entrepreneurial spirit animates a minority of highly educated people, with large differences in the number of entrepreneurial actions undertaken by those who continued studying (just 2.5%) and those who already had a job (12.1%) or were searching for it (26.4%).

We applied a PLS-SEM model including all respondents. The results of the within factor regression analyses are presented in Table 1 and outlined in Figure 1. The structural model explains 7.7% variance of fresh graduates' entrepreneurial intention. The analysis rejected most relationships hypothesised in the theoretical model; only a direct relationship of human capital and a relationship of psychological capital mediated through the risk-taking factor were confirmed. Instead, the within factor relationships are much stronger than those ascertained between the factors and the intention: indeed, the average internal-to-factor R^2 is 14%.

Regarding gender, the first-glance trend was of a significant feminine prevalence in entrepreneurial intentions: female graduates showed 11.5% intentions with respect to 7.5% of their male counterpart. The multivariate analysis, though, did not confirm this relationship either directly or through other factors.

Regarding the academic curriculum, we ascertained, among graduates who made steps toward entrepreneurship, a neat prevalence of graduates holding a Master's degree (19.3% *vs.* 4.3 of Bachelor's) in life sciences (17.5%) than in a STEM (Science, Technology, Engineering and Mathematics) discipline (science: 5.8%; engineering: 4.8%). It is puzzling that the propensity in STEM is even lower than in a social or humanistic science (respectively, 11.4 and 10.6%). Indeed, if we imagine an entrepreneur as a person who is able to put ideas into practice, this is a countertrend.

Working at graduation – that is the condition of having worked during higher education – was negatively related with human capital and even with actions undertaken to start an own business. While the former relationship was expected because working and studying at the same time generally leads to low-profile educational outcomes, the latter one may suggest that the dependent variable may not only reflect people's willingness to undertake but also availability to take into consideration any possibility in order to get a job.

We have found also a relationship between entrepreneurial intentions and final graduation mark, the intention belonging in a higher proportion to higher grades. In the extant literature (for a meta-analysis, see: Imose and Barber, 2015) this relationship is mixed. Moreover, Van Praag et al. (2009) showed that education negatively affects peoples' decisions to become an entrepreneur. Our data show that a higher graduation mark, taken alone or in conjunction with the academic discipline, seems to positively qualify people with a more determined intention to start an own business.

Finally, the way graduates retrospectively evaluated the expected effectiveness of the degree at hand – which was, as a whole, much more positive for employee-job oriented than for own-business-oriented graduates (respectively, 70.3% *versus* 56.5% positive evaluations) – is irrelevant to qualify higher levels of entrepreneurial intention if human capital factor was considered.

Concerning the psychological factors, no dimension was correlated with entrepreneurial disposition, neither PsyCap nor Loc, nor self-awareness. These results disconfirm the mainstream literature (Van Praag et al., 2009), in which both self-efficacy and being able to control own actions are psychological preconditions to develop an entrepreneurial disposition. Even the social capital showed not to influence the graduates' entrepreneurial spirit.

4. Discussion and final considerations

In this work we analysed the entrepreneurial intention of fresh graduates. We have found that just 10% of graduates is positively disposed to entrepreneurship. Bosma et al. (2020) show that a low propensity to start an own business is a worldwide phenomenon, as highlighted by the GEM - Global Entrepreneurship Monitor that yearly surveys adults of 50 countries.

Our data showed that working at graduation is negatively correlated with entrepreneurial disposition and, conversely, that good marks and the possession of a Master's degree in social and life sciences are positively correlated with graduates' entrepreneurial disposition. What

this means is unclear. Did we mix apples and oranges while defining the *Y* variable, or is this result once more the contradictory trend ascertained also in GEM that, in Italy, propensity to undertaking one's own business is low, much lower than 10%, but the proportion of people stating they possess the qualities to undertake it is high?

Our study showed that cognitive variables are much more relevant to entrepreneurial intention than non-cognitive ones. Both a positive psychological capital, an internal locus of control, positive attitudes towards labour and education, and the perception of individual and social barriers showed to be irrelevant to explain the graduates' entrepreneurial disposition. Instead, a risk-taking propensity showed a mild link with actions taken by graduates to start an own business. Therefore, an entrepreneurial intention model showed not to be fully consistent with the planned behaviour theory; moreover, the hypothesis that positively-disposed graduates are the "hive" of future entrepreneurs remains in a limbo.

The estimated R^2 is low and this may threaten the credibility of the relational model. In a future study, a more cogent definition of entrepreneurial disposition is to be tried before abandoning the hypothesis that that disposition precedes the decision to start an own business. Moreover, the study is to be circumscribed to people who effectively experienced the labour market.

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