Factors affecting entrepreneurial intention levels

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ABSTRACT

Entrepreneurship is becoming a very relevant instrument to promote economic growth and development in different regional and national economies. However, social scientists have not still agreed on the determinants of the decision to become an entrepreneur. Therefore, there is some concern that policies may not be sufficiently efficient in achieving this objective.

From a psychological point of view, the intention to become an entrepreneur has been described as the single best predictor of actual behaviour. Hence, some studies have started to analyse the entrepreneurial intention and its determinants but however, methodologies and research instruments used so far differ widely. Then, the availability of a validated instrument to measure abilities, attitudes and intentions towards entrepreneurship could be of much help.

In this paper, we use an Entrepreneurial Intention Questionnaire (EIQ), which has been recently validated, to measure entrepreneurial intentions in a sample of students from two different Spanish universities. After a brief description of the characteristics of the EIQ, most important results are discussed. Additionally, we pay attention to the influence of different personal and family variables on entrepreneurial intention and its antecedents.

KEYWORDS: Entrepreneurship, entrepreneurial intention, factor analysis, regression

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1. Introduction

Economic development of a territory could be understood as the process of growth in average production per capita, maintained in the long term. In this sense, it is the consequence of the introduction by enterprises of -mainly technical and organizational- innovations that allow productivity increases. These, in turn, help improve the retribution of factors used in the production process.

The entrepreneur, therefore, is the main responsible for economic development, as it is understood nowadays. Most authoritative conceptions about the entrepreneur's figure (Knight, 1921; Shumpeter, 1934; Kirzner, 1998) stress his/her promoter role in the economy, above and beyond other more extended roles as manager and property owner. This economic function of entrepreneurs allows us to highlight their important role as development agents. According to it, entrepreneurs are responsible for the promotion of enterprises and businesses; they infuse dynamism in economic activity within their territory; manage organizational and technical change; and also promote the innovation and learning culture on such environment.

Territories with higher increases on entrepreneurial initiative indexes tend to show a greater fall in unemployment levels (Audretsch, 2002). However, the entrepreneurial resource is scarce. In 2001, less than 10 percent of the OECD adult population was starting a new venture (Nolan, 2003). Therefore, a considerable agreement exists about the importance of promoting entrepreneurship to stimulate economic development and employment.

Entrepreneurship is an attitude that reflects an individual’s motivation and capacity to identify an opportunity and to pursue it, in order to produce new value or economic success (European Commission, 2003, p. 5). This attitude is crucial for competitiveness, because new entrepreneurial initiatives raise the territory’s productivity -increasing competitive pressure- and encourage innovation.

In this sense, backward regions as Andalusia tend to have a low level of firm creation rates and entrepreneurial activity (Westall et al., 2000), although it needs not be always the case (Nolan, 2003). If the entrepreneur is a development agent, as it seems, the Andalusian situation of relative backwardness might be a consequence of the low propensity of their people to be entrepreneurs. As Rodríguez-Pose (1998) affirms, some territories create institutions that favour economic development, while those built by other territories limit it. Perhaps Andalusian people's attitudes -as an economic institution- do not favour firm creation and economic development.

We address theses issues in this paper. Our main objective focuses on the analysis of entrepreneurial attitudes and intentions of Andalusian university students. In particular, we have concentrated our analysis in Seville, the largest metropolitan area in the region. We use intention models as the basis for research, and test them with a representative sample of university students.

This paper has been structured in five parts. After this introduction, the second section presents the entrepreneurial intention model applied in the study. The third section describes the Entrepreneurial Intention Questionnaire used in the empirical analysis. The fourth part analyses the results obtained. Finally, the paper ends with some conclusions about the empirical work and its implications.

2. Entrepreneurial intention model

In this section, we focus on the decision to become an entrepreneur. In this respect, methodologies used have been changing along the years (Liñán & Rodríguez, 2004). In the beginning, many authors looked for the existence of certain personality features or traits that could be associated with the entrepreneurial activity (McClelland, 1961). Later on, other works have been carried out remarking the importance of different characteristics such as age, gender, origin, religion, level of studies, labour experience, etc. (Reynolds et al., 1994; Storey, 1994), which are usually called "demographic" variables (Robinson et al., 1991). Both lines of analysis have allowed the identification of significant relationships among certain traits or demographic characteristics of the

individual, and the fulfilment of entrepreneurial behaviours. However, the predictive capacity has been very limited (Reynolds, 1997). On the theoretical side, many authors have criticized those approaches (Ajzen, 1991; Shapero & Sokol, 1982; Gartner, 1989; Santos, 2001; Veciana et al., 2000), so much for their methodological and conceptual limitations as for their low explanatory capacity.

From a third perspective, since the decision to become an entrepreneur may be plausibly considered as voluntary and conscious (Krueger et al., 2000), it seems reasonable to analyze how that decision is taken. In this sense, the entrepreneurial intention would be a previous and determinant element towards performing entrepreneurial behaviours (Fayolle & Gailly, 2004; Kolvereid, 1996). In turn, the intention of carrying out a given behaviour will depend on the person's attitudes towards that behaviour (Ajzen, 1991). More favourable attitudes would make more feasible the intention of carrying it out, and the other way round. In this sense, this "attitude approach" would be preferable to those used traditionally in the analysis of the entrepreneur, such as the traits or the demographic approaches (Robinson et al., 1991; Krueger et al., 2000). Thus, attitudes would measure the extent to which an individual values positively or negatively some behaviour (Liñán, 2004).

In this paper, two contributions will be specially considered as a reference, due to their influence on other recent works: In the first place, the theory of the "entrepreneurial event" (Shapero & Sokol, 1982) and, secondly, the much more highly structured theory of "planned behaviour" (Ajzen, 1991). Both models present a high level of mutual compatibility (Krueger et al., 2000). Therefore, our work is based on an integration of both.

The theory of the entrepreneurial event considers firm creation as the result of the interaction among contextual factors, which would act through their influence on the individual's perceptions. The consideration of the entrepreneurial option would take place as a consequence of some external change -a precipitating event- (Peterman & Kennedy, 2003). People's answers to that external event will depend on their perceptions about the available alternatives. There are two basic kinds of perceptions:

- *Perceived desirability* refers to the degree to which he/she feels attraction for a given behaviour (to become an entrepreneur).

- *Perceived feasibility* is defined as the degree to which people consider themselves personally able to carry out certain behaviour. The presence of role models, mentors or partners would be a decisive element in establishing the individual's entrepreneurial feasibility level.

In turn, both types of perceptions are determined by cultural and social factors, through their influence on the individual's values system (Shapero & Sokol, 1982). Therefore, external circumstances would not determine firm-creation behaviours directly, but rather they would be the result of the (conscious or unconscious) analysis carried out by the person about the desirability and feasibility of the different possible alternatives in that situation.

Along the same line, but much more detailed, Ajzen (1991) develops a psychological model of “planned behaviour”. It is a theory that may be applied to nearly all voluntary behaviours and it provides quite good results in very diverse fields, including the choice of professional career (Ajzen, 2001; Kolvereid, 1996). According to it, a narrow relationship would exist between the intention to be an entrepreneur, and its effective performance. Intention becomes the fundamental element towards explaining behaviour. It indicates the effort that the person will make to carry out that entrepreneurial behaviour (Liñán, 2004). And so, it captures the three motivational factors that influence behaviour, which are the following (Ajzen, 1991):

- *Perceived behavioural control* would be defined as the perception of the easiness or difficulty in the fulfilment of the behaviour of interest (becoming an entrepreneur). It is, therefore, a concept quite similar to perceived self-efficacy (Bandura, 1997). In the same way, it is also very similar to Shapero & Sokol (1982)’s vision about perceived feasibility. In all three instances, the important thing is the sense of capacity regarding the fulfilment of firm creation behaviours.

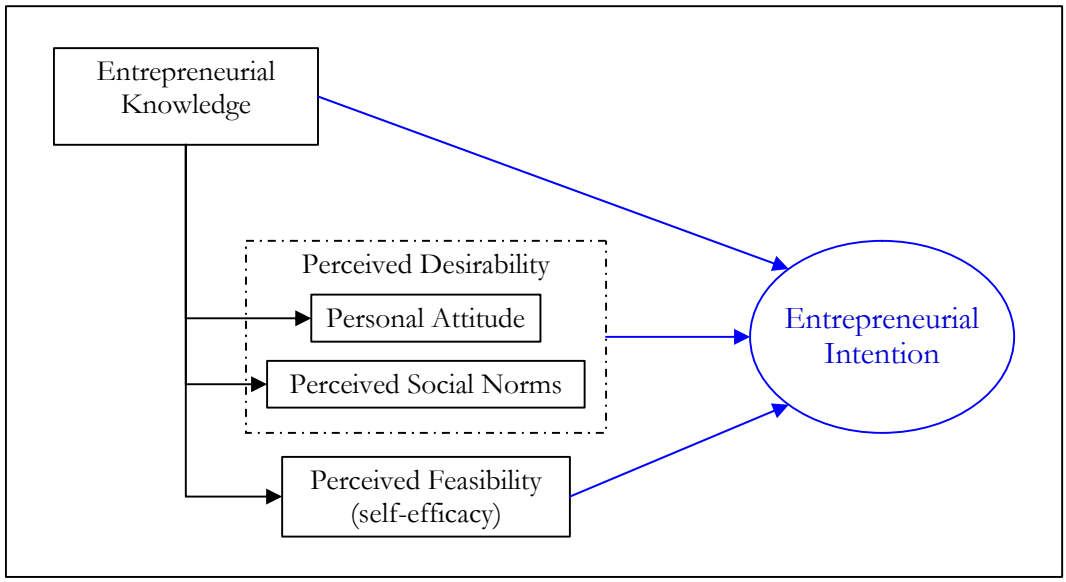
- *Attitude towards the behaviour* refers to the degree to which the individual holds a positive or negative personal valuation about being an entrepreneur.

- *Perceived social norms* would measure the perceived social pressure to carry out -or not to carry out- that entrepreneurial behaviour.

These three elements would constitute the explanatory variables of intention. Their relative contribution to the configuration of intention is not established in the model, as it may change from case to case. In particular, in the sixteen empirical works analyzed by Ajzen (1991), subjective norms tended to contribute very weakly to the intention of carrying out different behaviours. Finally, the model assumes the existence of interactions among the three explanatory elements.

If we compare these explanatory variables with those considered by Shapero & Sokol (1982), we can see that perceived feasibility -as it has been mentioned above- corresponds quite well with perceived behavioural control. On the other hand, the willingness to carry out entrepreneurial behaviours (perceived desirability) could be understood as composed by the personal attitude and perceived social norms. In this sense, it may be remembered that Shapero & Sokol (1982) considered desirability as a result of social and cultural influences.

Figure 1
Entrepreneurial intention model



Source: Liñán (2004: 15), Figure 2.

Additionally, as shown in Figure 1, a greater knowledge of the entrepreneurial environment will surely contribute to more realistic perceptions about the entrepreneurial activity and would help identify adequate role models. This latter element would have an influence on perceived feasibility and possibly on desirability as well (Scherer et al., 1991). In general, greater knowledge will also directly provide a greater awareness about the existence of that professional career option, and will make the intention to become an entrepreneur more credible.

3. Development of the Entrepreneurial Intention Questionnaire (EIQ)

In this paper, we have used the entrepreneurial intention model developed above as the basis for analysing which factors may have a relevant effect on entrepreneurial intentions. In particular, last year undergraduate students of Business Sciences and Economics in the two existent universities of Seville, i.e. University of Seville and Pablo de Olavide University, have been studied. In a first stage of this research project, we used a preliminary version of a questionnaire, which contained mostly yes/no questions or items with four maximum different response options (Liñán & Rodríguez, 2004). Results were clearly encouraging and tended to support the entrepreneurial intention model developed above. However, the robustness of the results were not as desired.

For those reasons, a second version of the questionnaire was developed, specifically designed to allow for a full validation of the questionnaire. The detailed process of construction and validation of the Entrepreneurial Intention Questionnaire[*] (EIQ) has been explained by Liñán (2005). The first version was used as the basis for this EIQ, but it has been carefully cross-checked following Kolvereid (1996), Krueger et al. (2000) and Veciana et al. (2000). Along the whole construction and design process, Ajzen's (1991, 2001, 2002) work has been carefully revised to solve any discrepancies.

Whenever possible, items have been built as 7-point likert-type scales. In particular, this has been true for the part of the EIQ measuring those latent variables that are crucial

[*] The Entrepreneurial Intention Questionnaire is available from the authors upon request.

for the entrepreneurial intention model (see Figure 1): i.e., entrepreneurial knowledge, personal attraction, social norms, self-efficacy and intention. The EIQ has been divided in ten sections. Sections two to six corresponds with the elements in the entrepreneurial intention model and they include only one yes/no question for comparison purposes, which is the following: "Have you ever seriously considered becoming an entrepreneur?" as similar items like this one this have been already used by Krueger et al (2000), Veciana et al. (2000) and others, its inclusion in the EIQ would allow establishing comparisons.

Besides, in section two we have also asked interviewees to rate their knowledge of entrepreneurs and their perceptions about how good those entrepreneurs are. As Scherer et al. (1991) pointed out, having access to role models is one key element in explaining entrepreneurship. However, they consider that knowledge alone is not enough. It has to be completed with the evaluation made about how successful those entrepreneurs are. In this paper, interviewees' evaluations of their role models have been included in the analysis together with demographic variables, in order to explain their effects on the entrepreneurial intention model.

The first (education and experience) and ninth (personal data) sections ask for demographic variables that should not affect intention directly, but could be very useful in identifying their effect on perceived control, attitudes, social norms, and knowledge. In this paper, these demographic variables will be also taken into account in the model regarding results.

The questionnaire also includes a seventh section centred on entrepreneurial objectives. Its purpose is to analyse students' concept of "success" and the importance they ascribe to business development and growth. Guzmán & Santos (2001) defined entrepreneurial quality as the behaviours performed to develop the firm and make it dynamic. This section tries to measure the intention to perform such behaviours.

The eighth section asked about participation in entrepreneurship education courses and the extent to which they have helped to increase entrepreneurial intention of interviewees, or any of the antecedents of intention. Finally, in section ten, we asked students to voluntarily provide contact data so as they may be studied again in the next

future. This follow-up will hopefully allow for an analysis of the intention-behaviour relationship.

4. Results

Empirical analysis is supported by a sample of 354 last-year course undergraduate students from Business Sciences and Economics, at both two public universities in Seville (Spain). Most of them correspond to the University of Seville and the rest to Pablo de Olavide University, which presently does not include the Economics degree.

There are two main reasons why such a sample may be selected. Firstly, last-year students are about to face their professional career choice and secondly, these students belong to the empirically highest entrepreneurial inclination segment of the population, according to Reynolds et al. (2002). That is, those individuals between 25 and 34 years old with high level of education tend to show a greater propensity towards entrepreneurship.

Business Sciences students represent 69.21% and the rest corresponds to Economics degree. Pablo de Olavide University provides only 31 students whereas the University of Seville, 323. This is because the former university was founded just eight years ago and it is still relatively small. 55% of the interviewees are female, while the average age is 23.7 years old.

*Factor-Regression procedure (***FR** *procedure)*

The empirical procedure developed in this paper can be defined as a mixture of factor analysis and regression. SPSS is the statistical software used for factor analysis and Econometric Views for regressions. The first step consists of carrying out a factor analysis† with the aim of distinguishing all different factors influencing entrepreneurial intention (excluding education, experience and personal data). Then, a regression analysis is estimated including the entrepreneurial intention factor as the explained

† According to Pardo & Ruíz (2002), factor analysis has been carried out using the main axes factorization method for extraction and the regression method for estimating the values for each factor, with a promax rotation.

variable and the rest of factors as explanatory variables. The regression is tested to solve, if that would be the case, heteroscedasticity, multicollinearity and autocorrelation problems.

As a result, some of the explanatory variables may not be significant at a 95% confidence level, so they would be removed from the model. Once the regression model is adjusted, the underlying questions of the remaining factors are again included in a second step factor analysis, where a new grouped factors version is provided. Once more, these factors are related through a new regression model, and so on.

Hence, the final result would be a model which can explain how certain factors may influence the entrepreneurial intention. However, as different measures have been used to evaluate each antecedent of intention, and some additional variables have also been included (especially those related to entrepreneurial objectives), there is a risk of finding factors with no easy interpretation. Nevertheless, as it is shown later, these factors are fortunately found to be closely related to the theoretical ones (see Figure 1).

Our point of departure is the following different features in which the EIQ is organized:

(a) Entrepreneurial knowledge (11 items in 3 groups).
(b) Personal attitude (11 items in 3 groups).
(c) Perceived social norms (11 items in 3 groups).
(d) Perceived feasibility (12 items in 2 groups).
(e) Entrepreneurial intention (7 items in 2 groups).
(f) Objectives (17 items in 4 groups).

The first factor analysis is performed with just 313 individuals due to non-answered questions. It yields up to 19 different factors (see Table 1). It is interesting to remark the negativity of the three following factors: growth as a key feature for success, preference for remunerative jobs and personal attitude to entrepreneurship. That is, individuals with high entrepreneurial intention do not really think about growth as a key feature for success, do not prefer remunerative jobs, and do not have much attraction for being entrepreneur. This latter relationship is against our *a priori* expectations. Perhaps, other

reasons different from their personal view of the advantages and disadvantages of entrepreneurship may explain the entrepreneurial intention. For instance, other factors as the perceived feasibility or the perceived social norms, among others, are positively related with an entrepreneurial behaviour. The determination coefficient of the model is 0.538.

Table 1

Factors	*Sign of Coefficient*
Entrepreneurial intention	(explained)
Perceived feasibility *	Positive
Knowledge of support measures	-
Foreign trade and innovation	-
Perceived social norms*	Positive
Growth as a key feature for success*	Negative
Friends approval for entrepreneurship*	Positive
Leadership, communications and professional contacts	-
Friends valuation of entrepreneurship	-
Social approval and turnovers as key features for success	-
Planification, alliances and formation for employees*	Positive
Innovation, creativity and detecting opportunities abilities*	Positive
Preference for remunerative jobs*	Negative
Entrepreneurs in the family*	Positive
Preference for being independent professional*	Positive
Personal attitude**	Negative
Preference for continuing education	-
Size, development and entrepreneurial enlargement	-
Knowledge of non-family entrepreneurs	-

* Significative at a 95% confidence level.
** Significative at a maximum 93% confidence level.

The second step of the factor analysis was carried out including the remaining 10 significative factors plus the entrepreneurial intention factor. The results are shown in Table 2. In contrast to the first step, personal attitude changes its sign in the expected direction, becoming positive. That is, in this case, individuals with high entrepreneurial intention find more advantages than disadvantages in being entrepreneur.

Regarding the meaning of the sign of the coefficients associated to growth as a key feature for success and the preference for remunerative jobs, they remain unchanged. Notice that planification, alliances and promoting higher formation on employees are positively related behaviours respect to the entrepreneurial intention. Lastly, personal attitude and perceived feasibility (as theory indicated) are two of the main explanatory

factors regarding entrepreneurial intention in these last-year course undergraduate students.

Table 2

Factors	*Sign of Coefficient*
Entrepreneurial intention	(explained)
Perceived feasibility *	Positive
Personal attitude *	Positive
Perceived social norms	-
Planification, alliances and formation for employees *	Positive
Friends approval for entrepreneurship **	Negative
Growth as a key feature for success *	Negative
Ability of innovation, creativity and detecting opportunities	-
Preference for remunerative jobs *	Negative

* Significative at a 95% confidence level.
** Significative at a maximum 93% confidence level.

However, perceived social norms are not really significative at a 95% confidence level, which is coherent with Ajzen (1991). In this case, with 337 observations, a 0.691 determination coefficient is obtained after solving some heteroscedasticity problems using the White consistent standard errors for the estimated coefficients. No problems of multicollinearity or autocorrelation were found.

In a third step, we made another factor analysis including the remaining 6 factors plus the entrepreneurial intention factor as the explained variable. The results are shown in Table 3. At this stage, the friends' approval for initiating entrepreneurial activities is not significant and therefore removed, while all the rest of factors (and their signs) remain unchanged.

Table 3

Factors	*Sign of Coefficient*
Entrepreneurial intention	(explained)
Perceived feasibility *	Positive
Personal attitude *	Positive
Planification, alliances and formation for employees *	Positive
Friends approval for entrepreneurship	-
Growth as a key feature for success *	Negative
Preference for remunerative jobs *	Negative

* Significative at a 95% confidence level.

Finally, a last factor analysis is carried out with the remaining 5 explanatory factors and the corresponding explained variable entrepreneurial intention. The final results are shown in Table 4. At this stage, 338 observations were used. The regression model yields a 0.7 determination coefficient, which is satisfactory.

Table 4

Factors	*Sign of Coefficient*
Entrepreneurial intention	(explained)
Perceived feasibility*	Positive
Personal attitude*	Positive
Planification, alliances and formation for employees*	Positive
Growth as a key feature for success*	Negative
Preference for remunerative jobs*	Negative

* Significative at a 95% confidence level.

To sum up, we find that perceived feasibility and personal attitude are positively related with entrepreneurial intention, as theory indicates. Besides, individuals with high entrepreneurial intention give most importance to behaviours such as planification, alliances and formation of employees when developing their firms. Lastly, growth is not certainly a key feature for those individuals with high entrepreneurial intention, all of which do not prefer obviously remunerative jobs.

Some comments on correlations between factors

The highest correlation corresponds to entrepreneurial intention and perceived feasibility (0.78), which is perfectly coherent with theory. Also, it is remarkable that entrepreneurial intention is closely related to personal attitudes (0.49) by individuals and the preference for remunerative jobs (-0.5).

Besides, a not so close relationship is found between perceived feasibility and personal attitude (0.41) as well as for remunerative jobs preference (-0.4). Moreover, individuals who think about planning, making alliances and training their employees when initiating the entrepreneurial activity do not consider growth as crucial for being successful. Consequently, there is a positive correlation (0.61).

Last but not least, it is the negative and weak (-0.18) correlation between personal attitude and the preference for remunerative jobs. That means that individuals with fewer preferences for remunerative jobs would tend to have higher entrepreneurial

intention, though this correlation is very slight. Consequently, in our opinion, these two factors cannot be seen as opposite, as Kolvereid (1996) seems to consider them.

Some comments on socio-demographic data

In principle, data related to labour experience, age, gender, parents' studies and parents' occupations are not included as part of the first factor analysis. Perhaps, that would be a future task for testing the robustness of the model presented here. However, it would be interesting for the moment to focus on the relationships between these personal features and the five explanatory factors found in our results. With that purpose, a matrix of correlations has been calculated (and it can be provided by the authors upon request).

The main results consist of the significative but rather weak relationship between gender and all factors. It is interesting to remark that men tend to have a higher entrepreneurial intention; they consider themselves more capable than women do to initiate an entrepreneurial activity, which actually attracts more to men than to women. In contrast, female prefer remunerative jobs more than men and consider more strongly that growth is not a key feature for success and that planification, alliances and formation of employees are desirable behaviours once the firm is constituted.

Personal attitude towards entrepreneurial behaviours is positive and weakly related to labour experience, age and gender. Lastly, we also find negative and weak relationships between parents' studies and the two latter factors regarding growth and remunerative jobs preference.

5. Conclusions

In this paper, our point of departure is the evident and relevant role that entrepreneurs play in economic growth and development. Thus, higher start-up rates will contribute to increased economic prosperity. In particular, we have addressed the entrepreneurial intention as one of the key elements in explaining firm-creation activity levels.

Based on a review of the literature, we have built an entrepreneurial intention model as an integration of Shapero & Sokol's (1982) theory of the "precipitating event" and Ajzen's (1991) theory of "planned behaviour". In the model developed, the intention to become an entrepreneur depends on personal attraction towards entrepreneurship, perceived social norms and perceived feasibility (self-efficacy). Besides, entrepreneurial knowledge is previous and interacts with all those variables.

An Entrepreneurial Intention Questionnaire (EIQ) has been carefully developed not only to empirically test the adequacy of our model, but also to allow its full statistical validation. In particular, in this paper, we have carried out a combination of factor analysis and regression. The variables included in the analysis represent different ways to measure each of the antecedents of entrepreneurial intention. Factor analysis and regression techniques were jointly used to reach a final model in which five significant explaining variables were left.

In particular, perceived feasibility and personal attitude towards entrepreneurship were significant and with the expected signs. The other two elements of the entrepreneurial intention model were dropped from the analysis at different stages. In the case of perceived social norms, Ajzen (1991) found that this is frequently the weakest element and it has been non-significant in a number of different studies which applied the theory of "planned behaviour" to various actions. Regarding entrepreneurial knowledge, this element was added to the model by Liñán (2004). The analysis carried out does not support its inclusion. As a possible explanation, it may be argued that it has no direct effect on intention, but an indirect effect over the antecedents (notably feasibility). Liñán (2005) offers some evidence in this respect. Alternatively, the items used to measure this latent variable may be misspecified.

The inclusion of the preference for a salaried job with a significant negative coefficient in the final model is reasonable. However, it is interesting to highlight that we found no indication of (negative) collinearity between this variable and the personal attraction towards entrepreneurship. In fact, the correlation between both variables is quite weak (-0.18). This may be indicating that they are not complete opposites, as some researchers might think.

Finally, the correlation analysis carried out with respect to some socio-demographic data shows some important relationships that probably deserve closer attention. In particular, this would be the case of gender, which is significantly related not only to intention, but also to the final five significant explaining variables. In the case of Seville university students, therefore, there appears to be a marked gender difference regarding their views of entrepreneurship. This will surely be one of our future lines of analysis.

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