DIPARTIMENTO DI ECONOMIA
UNIVERSITÀ DEGLI STUDI DI PARMA
Via J. F. Kennedy, 6 – 43100 Parma – Italia

A. ARRIGHETTI*, L. CARICATI*, F. LANDINI§, N. MONACELLI*

EXPLAINING ENTREPRENEURIAL ORIENTATION AMONG UNIVERSITY STUDENTS: EVIDENCE FROM ITALY

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*Department of Economics, University of Parma, Via J. F. Kennedy, 6 – 43100 Parma – Italy. Alessandro. Arrighetti: alessandro.arrighetti@unipr.it; Luca Caricati: luca.caricati@unipr.it: Nadia Monacelli: nadia.monacelli@unipr.it
§MEDAlics and CRIOS – Bocconi University, Via G. Roenteng, 1 20136 Milan – Italy. Fabio Landini: fabio.landini@medalics.org

Abstract

This paper presents one of the first studies on the entrepreneurial orientation of Italian university students. For a large sample of students from the University of Parma (Italy), we estimate the sources of entrepreneurial intent, distinguishing between the *propensity* to start a new business and the *perceived likelihood* of becoming an entrepreneur. In line with previous research in other countries, entrepreneurial intent is explained by a wide set of variables, including psychological, social and contextual factors. For Italian university students, the current economic crisis and the consequent increase in uncertainty do not seem to significantly weaken the importance of psychological variables as factors shaping entrepreneurial intent, confirming that these variables maintain primary relevance regardless of the context and the economic situation. While the perception of a lack of economic opportunities does not significantly affect the *propensity* to start a new venture, it does have a negative impact on the *perceived likelihood* of becoming an entrepreneur. This, in turn, suggests that the ongoing economic recession may indeed have a negative impact on the future entrepreneurial supply through a discouragement effect. Finally, the impact of family and business associations on stimulating entrepreneurial intent turns out not to be statistically significant. The combination of these results significantly contributes to our general understanding of entrepreneurial intent among Italian university students.

1. Introduction

Entrepreneurship is viewed as an important source of economic growth (Mitra, 2008; Liñán *et al.,* 2011) and social change (Baumol, 1968; Acs *et al*., 1999). Entrepreneurial activities not only boost technological innovation, but they also provide employment opportunities and increase competitiveness (Zahra, 1999; Thurik and Wennekers, 2004). According to Romer (1994), entrepreneurial activities are important determinants of economic development in the long term. Especially during periods of protracted recession, the creation of new businesses generates new jobs, spreads innovation and helps to support the local economy (Dana, 2004; Engle *et al*., 2010; Ahmed *et al*., 2010). Nevertheless, the current supply of entrepreneurial activity is relatively modest (Liñán *et al.,* 2011). The available evidence for OECD countries suggests that in the early 2000s, less than 10% of the adult population was engaged in launching a new business (Nolan, 2003). In Italy, despite the marked diffusion of micro-firms and the large share of self-employment in total employment, the situation is even worse. Bosma and Levie (2009), for instance, show that compared to the most advanced economies, Italy's indicators of entrepreneurial activity are particularly low: less than 5% of the adult population is engaged in the start-up and management of new firms. In addition, during the last decade in the Italian manufacturing industry, the rate of startup of new firms has decreased almost constantly, while the rate of firms' mortality has grown, generating a negative and increasing demographic imbalance (Arrighetti and Traù, 2006, 2012; Traù, 2012).

For all these reasons, scholars and policy makers have become increasingly interested in studying the sources and dynamics of entrepreneurial supply. In particular, a rising number of contributions have focused on the entrepreneurial orientation of university students (Zhao *et al*., 2005; Kolvereid, 1996). The focus on young potential entrepreneurs is justified by the possibility to anticipate future trends in the entrepreneurial supply (Autio et al., 2001). Moreover, the interest in the most educated segment of the population originates from the observation that entrepreneurs' education is generally associated with higher levels of entrepreneurial skills (Lucas, 1978; Van Praag and Cramer, 2001), higher rates of firms' hiring (Galloway and Brown, 2002) and better firm performance (Van der Sluis et al., 2008). These

studies have provided useful insights on the factors shaping students' entrepreneurial orientation for a large set of countries.[1] To the best of the authors' knowledge, however, no such study has been conducted for Italy so far. Our contribution is expressly aimed at filling this gap.

Participants in our study were students enrolled at the University of Parma (Italy). For each participant, we collected information concerning both the extent to which the person shows intention to becoming an entrepreneur (what we call the *propensity* to start a new venture) and the person's perceived probability of being an entrepreneur in the future (*perceived likelihood*). In line with previous contributions, we also gathered information on the psychological factors that correlate with entrepreneurial orientation. In addition, we collected detailed data on both the perceived entrepreneurial support offered by social institutions (e.g., family, university, business associations) and the perceived entrepreneurial opportunities offered by the economic environment. This makes our dataset relatively rich compared to previous studies.

On the basis of the collected data, we pursued three main research objectives. First, we want to identify the sources of entrepreneurial intent of Italian university students, distinguishing between the *propensity* to start a new business and the *perceived likelihood* of becoming an entrepreneur. Such distinction allows us to investigate not only the degree of students' interest in entrepreneurship but also their expectations about the probability to succeed.

The second research objective concerns a detailed analysis of the role that economic environment variables play in explaining entrepreneurial orientation. With regard to this, we are particularly interested in testing the existence of crowding-out effects of these variables on individual psychological variables. The literature on entrepreneurship places significant weight on both components. It is not known, however, to what extent an economic environment that a) shows limited entrepreneurial opportunities, b) is exposed to high levels

[1] The list of countries includes: US, UK, Germany, France, Finland, Sweden, Belgium, Spain, Turkey, Portugal, Russia, China, India, Pakistan, Iran, Malaysia, South Korea, Singapore, Costa Rica and Ghana. See Autio et al. (2001), Turker and Selcuk (2009), Ahmed et al. (2010), Engle et al. (2010), Franco et al. (2010), Gelard and Saleh (2001), Giacomin et al. (2011), Liñán et al. (2011), Ismail et al. (2009), Lee et al. (2005), Li (2007), and Wang and Wong (2004).

of uncertainty, and c) is characterized by poor institutional outcomes may overlap or replace psychosocial variables that affect entrepreneurial propensity. From this point of view, Italy is particularly well suited to improve the analysis of contextual variables. Compared to other developed countries, in fact, Italy is particularly weak in terms of stability and coherence of the institutional framework and the effectiveness of the system of contract enforcement (Bianco et al., 2012). The result is the emergence of high barriers to entry, growth and exiting the market (Bianco et al., 2012), with relevant effects on the formation of new businesses. To confirm this, we observed that according to the World Bank's ranking of the ease of doing business, Italy is in a much lower position than most countries with comparable economies, including France and Germany (World Bank 2012; Calcagnini and Travaglini, 2012). Finally, in recent years, the economic crisis has been particularly acute in Italy, showing higher intensity than that recorded in the average of other European countries (Pianta, 2012). Altogether, these factors make the Italian economic environment highly uncertain and only able to supply a limited set of opportunities for new businesses (Pianta, 2012). On this basis, our second research objective is to verify whether, within such an environment, the perception of contextual variables can appreciably weaken the relevance of psychological variables as drivers of entrepreneurship.

Finally, the third research objective concerns the role played by different actors and social institutions, such as family, university and business associations, in facilitating and supporting the entrepreneurial orientation of university students. In this case, Italy is also particularly well suited to this aim, given the importance of (at least) family and economic associations in consolidating a shared cognitive schema and in building up the country's cultural legacy (Colli and Rose 1999; Guerrieri and Petrobelli, 2004). Therefore, our third and last research objective is intended to check if and in which way social, economic and cultural institutions affect the entrepreneurial orientation of young and highly educated adults.

Based on our study, we obtained four main results. First, in line with previous studies, we found that entrepreneurial intent is explained, in Italy as well as in other countries, by a complex set of variables, including psychological, social and contextual factors. Second, we found that for Italian university students, the economic crisis and the

consequent increase in uncertainty do not seem to significantly weaken the importance of psychological variables as factors shaping entrepreneurial intent, confirming that they maintain a role of primary relevance regardless of the context and the economic situation. Third, we found that while the perception of a lack of economic opportunities does not significantly affect the *propensity* to start a new venture, it does have a negative impact on the *perceived likelihood* of becoming an entrepreneur. Such a result, in turn, suggests that Italy's ongoing economic recession may indeed reduce the overall supply of entrepreneurial activities, even if such reduction is more likely to derive from a discouragement effect rather than from an effective crowd-out of entrepreneurial propensity. Finally, we found that the impact of family and business associations in stimulating entrepreneurial intent turns out to be not statistically significant; contrary to our expectations, the support of family and economic associations is perceived as weak and irrelevant in explaining both the propensity and the perceived likelihood of university students to actually start a new venture. The combination of these results significantly contributes to our general understanding of entrepreneurial intent.

The remaining parts of the paper are organized as follows. Section 2 discusses the literature and defines our research hypotheses. Section 3 describes the research methodology. Section 4 presents the results. Sections 5 discusses our main findings. Section 6, finally, concludes the paper.

2. Literature background and hypotheses

The attitude towards entrepreneurship of university students is not easy to measure. Entrepreneurial orientation indeed refers to a choice that an individual is not called to make in the present, but possibly in the non-immediate future, often after many years and, in most cases, at the end of his or her studies. Nevertheless, research on entrepreneurship has been able to develop models linking the intention to implement a specific course of action in the present with its actual realization in the future. These models have proven sound from the theoretical point of view and have exhibited good predictive power. In the majority of contributions, the key point of reference is

the concept of *entrepreneurial intent*, namely the 'self-acknowledged conviction by a person that they intend to set up a new business venture and consciously plan to do so at some point in the future' (Thomson, 2009:676). As a background theory, this literature refers to two highly complementary models of individual behavior, particularly Ajzen's (1991) theory of planned behavior (TPB) and Shapero and Sokol's (1982) model of the entrepreneurial event (EEA). The first model is useful to explain how a particular orientation or a specific intention can be seen as the antecedent of an action. The second model has been developed as an application of Ajzen's model to entrepreneurial behavior.

According Lans et al. (2010), the most interesting aspect of Ajzen's theory is that intentions are seen as effective predictors of individual behavior in a specific context. The analysis of intentions tells us something about how strongly individuals will pursue certain goals and how hard they will adapt their conduct in order to achieve a defined objective. The basic assumption of this model is that an increase in the intention to implement a given action corresponds to an increase in the probability that such action will actually be fully implemented (Ajzen, 1991). More specifically, the intention to set up a new business is deemed to depend on the perceived desirability, feasibility and propensity to act upon opportunities (Lee et al., 2011). In this framework, perceived desirability is associated with the feeling of attraction towards creating a new business and feasibility is associated with the perceived capability to implement this decision. Autio et al. (1997), Krueger et al. (2000) and Schwarz et al. (2009) (among others) believe that entrepreneurship is the typical example of *planned behavior* to which the intentional model can be properly applied.

The model of entrepreneurship as *planned behavior* is supported by robust empirical evidence (Schwarz et al., 2009): entrepreneurial intent turns out to be an adequate proxy for the effective choice of starting a new business (Krueger et al., 2000; Katz, 1988; Reynolds, 1997). These findings have therefore increased the interest of researchers in the sources of entrepreneurial intent.

In order to best understand the quality of predictors of entrepreneurial intent, it could be useful to refer to Bronfenbrenner's ecological system theory (1979). From this perspective, the understanding of human attitudes and behavior must consider the

entire ecological system in which individuals evolve. This system is composed of five socially organized subsystems that help support and guide people. They range from the microsystem, which refers to the relationships between a person and the immediate environment, such as family and friends, to the macrosystem, which refers to institutional patterns and culture, such as economy, customs and bodies of knowledge.

Thus, as for all human behaviors and attitudes, entrepreneurial intention is also connected with, and influenced by, several social spheres of people's life. This implies that entrepreneurial intention must be analyzed considering many features of the personal (e.g., intrapersonal characteristics and interpersonal relations) and social (e.g., family, school and society) context in which future entrepreneurs live. Although all ecological systems can be important sources of influence, the ecological approach to entrepreneurship has usually considered micro-, meso- and macrosystems as principal levels of analysis for entrepreneurial intention (Liñán and Santos, 2007). Accordingly, the available literature indicates that the intention of setting up a new business is a function of multiple variables. Among these, some relate to the individual's personal sphere, prevailing psychological traits and intensity of the motivations to start a new business (Schwarz et al., 2009). Other factors refer to external variables, such as the economic, cultural, social and institutional context in which the business will be operating (Davidsson, 1995; Franke and Lüthje, 2004; Segal et al., 2005; Thompson, 2009). In our study, we choose to follow the previous literature and maintain the distinction among these different groups of variables while stating our hypotheses. For our proposal, we will thus consider psychological, experiential and contextual factors in particular.

2.1 Psychological factors

A relatively large set of psychological characteristics and variables appears to be associated with the decision to start a new business venture. Entrepreneurial intent, in particular, is influenced predominantly by self-efficacy, the quest for autonomy, the desire for self-fulfillment and the orientation toward risk (Schwarz et al., 2009; Tung et al., 2011). The results of Douglas and Shepherd (2002) show how individuals with a strong inclination in favor of autonomy and

risk-taking are particularly oriented towards entrepreneurial choices. Autio et al. (1997) identify a strong and positive relationship between the search for autonomy and entrepreneurial orientation. In that study, the search for autonomy is considered to be in conjunction with self-fulfillment and achievement motivations. Individuals with strong confidence in their abilities have a high propensity to become entrepreneurs (Krueger et al., 2000; Zhao et al., 2005; Peterman and Kennedy, 2003; Segal et al., 2002). Starting a new business indeed requires confidence in one's own abilities and flexibility to adapt to changing external conditions (Pruett et al., 2009). In general, individuals who are markedly self-confident tend to perceive the environment in more favorable ways than those who do not, and they have a more optimistic view about their future. This attitude can have a positive impact on entrepreneurial intent (Turker and Selcuk, 2009). Similar results were observed with samples of both employees and students (Lee et al., 2011). In general, self-efficacy is also found to be a robust predictor of the inclination towards entrepreneurship (Krueger et al., 2000; Markman et al., 2002; Zhao et al., 2005). Similarly, Lans et al. (2010) show that self-efficacy influences the decision to set up a startup as well as other types of entrepreneurial choices. In view of the above, the first two hypotheses relating to the general attitudes of individuals who we propose are that:

H1.1 Achievement motivations are positively related to entrepreneurial intent;

H1.2 Self-efficacy is positively related to entrepreneurial intent.

2.2 Experiential factors

In addition to purely psychological factors, other variables associated with work experience, competence acquisition and role models can be important sources of entrepreneurial intent. In some contributions, work experience is found to be an important antecedent for the creation of a new business (Carter and Collinson, 1999; Galloway and Brown, 2002). In particular, substantial evidence converges in suggesting a positive relationship between work experience and attitudes toward entrepreneurship among highly

educated young adults (Lans et al., 2010; Scott and Twomey, 1988). An exception involves the estimates presented by Sandhu et al. (2011), according to which there would be no significant relationship between work experience and self-employment.

In these cases, however, its role in shaping entrepreneurial orientation remains uncertain, especially with respect to young adults (Davidsson, 2006. Lans et al, 2010). While having had work experience may result in the acquisition of knowledge that can facilitate the decision to create one's own business, other interpretations cannot be excluded. Accumulating work experience before completing undergraduate studies may also be associated with particular individual characteristics, such as proactivity, curiosity, and pragmatism. These factors, instead of the accumulated knowledge from university studies, could therefore be the true antecedents of high entrepreneurial intent.

Similar to work experience, individual skills and prior knowledge can also significantly influence the intention to form a new firm (Dickson et al., 2008). Knowledge and skills are seen as resources that stimulate creativity and ability to identify opportunities (Kor et al., 2007) and, therefore, as factors that can encourage the creation of (or at least increase the chances of starting) a new business (Liñán et al., 2011). Aldrich and Martinez (2001) state that the foundation of a new firm requires a certain amount of knowledge that can be obtained by formal education, previous experience, or informal training. Autio et al. (2001) argue that entrepreneurial intent depends on the perceived and actual competencies of the individual, among other things. Fini et al. (2009) found evidence of a positive (indirect) influence of individual skills on entrepreneurial intention. Moreover, Izquierdo and Buelens (2011) show that perceived competencies indirectly influence intentions to start a new business (even if through the mediating role of entrepreneurial self–efficacy). As indicated by Park (2005), the recognition of valuable economic opportunities is a source of innovation and stimulates the birth of new ventures. Opportunity recognition is strongly influenced by the entrepreneur's technical skill. Technical knowledge combined with prior experience and market knowledge allows the transformation of an embryonic new technology into a successful business initiative. The literature therefore presents sufficient evidence showing that the perceived level of personal skills has an impact on entrepreneurial decisions: limited knowledge of

organizational and managerial practices, lack of technical expertise and operational experience tend to reduce the entrepreneurial intentions of young adults.

Finally, entrepreneurial intent is also related to the type of exchanges that develop within the family and network of friends. In this sense, entrepreneurial intent is strongly influenced by the exposure to the business experiences of family members or persons with stable relations to the household of origin (Ahmed et al., 2010). Having a family member (or close friend) who is an entrepreneur may reassure a young adult about the feasibility of self-employment and facilitate the identification with 'role models' (Aizzat et al., 2009; Van Auken et al., 2006; Tung et al., 2011). A significant number of empirical studies, in fact, show that having a parent or family member who is an entrepreneur significantly increases the propensity of individuals to pursue the same career (Ahmed et al., 2010; Scherer et al., 1989; Raijman, 2001). Based on the above arguments, we thus propose the following hypotheses for empirical testing:

H2.1 Labor experience is positively related to entrepreneurial intent;

H2.2 Perceived lack of technical and managerial competences is negatively related to entrepreneurial intent;

H2.3 Having a family experience of entrepreneurship (i.e., the existence of entrepreneurial role models within the family) enhances entrepreneurial intent.

2.3 Contextual factors

As discussed earlier, in the decision to start a new business, personal assessments and expectations are often interwoven with variables that are exogenous to the individual. Some of these variables in particular are representative of the economic environment in which the new organization will operate. The perception of how such environment is conducive to the creation of new businesses has a considerable impact on the actual decision to engage in a new entrepreneurial venture (Franke and Lüthje, 2003, Turker and Selcuk, 2009). As Schwarz et al. (2009) note, the features of the economic

environment may indeed explain why the relationship between variables attributed to the individual and entrepreneurial intent is not a direct one (Franke and Lüthje, 2003). The attitude toward entrepreneurship, from this perspective, cannot be assessed without taking into consideration the characteristics of the economic context: the decision to set up a business depends on the opportunities supplied by the markets and the economy as well as the resources and the rules that the institutional system offers to the individual. The potential entrepreneur collects and processes a set of information from the surrounding environment that translates into advantages and obstacles to the realization of his project (Shapero and Sokol, 1982: Shepherd and De Tienne, 2005). Information, for instance, concerns the expected return on the investment, the average profitability of existing businesses and the level of barriers to entry. Depending on such information, then, an environment can be perceived as more favorable or less favorable to starting a new venture.

Moreover, the perception of the risks associated with starting a new business can also impact the effective entrepreneurial aspiration. According Simon et al. (1999), potential entrepreneurs do not perceive the riskiness of starting new ventures with the same intensity, and individuals generally decide to start a business not because they accept high levels of risk, but because they do not perceive the risks involved. Accordingly, risk perception, defined as "the assessment of risk inherent in a situation" (Norton and Moore 2006) is considered a better predictor of entrepreneurial intention than risk propensity (Keh et al., 2002; Karimi et al. 2012). Reduced perception of risk, therefore, partly explains why some people become entrepreneurs while others do not (Le Roux et al. 2006). Similarly, Cooper et al. (1988) and Norton and Moore (2006) show evidence that entrepreneurs tend to assess risks more favorably than non-entrepreneurs. On this basis, concerning the role of the economic environment and of risk perception, we advance the following hypotheses:

H3.1 The perception of the economic environment as stable and rich in opportunities is positively related to entrepreneurial intent;

H3.2 Risk perception is negatively related to entrepreneurial intent.

Context, however, can affect entrepreneurial intention not only through the creation of more valuable or less valuable and risky opportunities but also through the degree of support that is provided to the opening of a new business. Support can originate from different sources. In this paper, we focus primarily on support that is offered by the individual's family (and more broadly, social networks), institutions (including both formal and informal rules of conduct as well as public-private associations) and university.

The perception of the support provided by family and social networks seems to markedly affect entrepreneurial orientation (Taormina and Lao, 2007; Sandhu et al., 2011). In addition to the relevance in terms of role models, in fact, the network of family and friends can supply active economic and emotional backing to the new entrepreneur. Pruett et al. (2009) report that the decision to start a new business can induce different reactions from family members and friends. On this basis, they develop the hypothesis that the intensity of support that is provided can influence the propensity to create a new business. The family can be a source of information on economic opportunities and support in terms of financial resources and work (Aldrich and Cliff, 2003). Tung et al. (2011) find similar results. Most of the available evidence shows that the expectation of family support positively affects the intention to start a business.[2]

In addition, the literature on institutional barriers to the creation of a startup is also particularly rich. Institutional barriers refer to both informal and formal mechanisms that hinder the creation of new business (Krueger and Brazeal, 1994). Informal mechanisms consist of norms and rules prevailing within a population of potential entrepreneurs, while formal mechanisms include regulation tools, codes and lack of explicit support on the side of public and private organizations (Sandhu et al., 2011). Furthermore, one of the main institutional barriers is often associated with limited access to credit. There is broad evidence concerning the difficulties faced by firms

[2] Different findings are obtained, instead, by Turker and Selcuk (2009): in a study on university students in Turkey, they came to the conclusion that the support provided by family and friends is not sufficient to significantly change the entrepreneurial intention of individuals.

during the startup phase to collect funds and relate with lenders (Shapero and Sokol, 1982, David and June, 2001). The literature that studies the behavior of potential entrepreneurs has reported that the collection of financial resources is perceived as the most serious general obstacle to launching a new business (Blanchflower and Oswald, 1998). The research on entrepreneurial intention indicates the lack of funding as a major barrier to entrepreneurship (Henderson and Robertson, 2000, Robertson et al., 2003; Li, 2007). In addition to financial support, the importance of other forms of institutional support, such as specialist advice and training, and their role in increasing the feasibility of the new initiative are emphasized in many studies (Veciana et al., 2005; Shapero and Sokol, 1982). Sandhu et al. (2011) conclude that institutional factors affect the entrepreneurial intent of young adults and that the lower entrepreneurial intent recorded in some developing countries could be attributed to lack of adequate institutional support. In Turker and Selcuk (2009), the analysis is further extended to consider direct and indirect forms of structural support. The support provided by public and private organizations as well as corporate law was examined. The authors show that the factors capable of synthesizing the 'perceived structural support' have a significant influence on the propensity towards entrepreneurship and are able to explain 4.4% of the estimated variance.

In addition to family and institutions, universities can also be an important source of support for young entrepreneurs. As we discussed above, skills, education and work experience strengthen entrepreneurial competencies and increase the likelihood that new firms show a positive performance (Van der Sluis et al., 2008). Not surprisingly, many studies find a positive relationship between the quality of training opportunities (that are offered within the university but also in other contexts) and the entrepreneurial intent of young adults (Peterman and Kennedy, 2003). According to Dyer (1994), the provision of courses on entrepreneurship and procedures for starting a new business raises the confidence of potential entrepreneurs about the feasibility of their project. Krueger and Brazeal (1994) share the same view and emphasize the importance of entrepreneurial education to foster self-efficacy. Franke and Lüthje (2004) suggest that the university environment significantly contributes to the view that students have of an

entrepreneurial career and affects their orientation towards launching a new business. Further evidence on the role played by the university context in affecting business decisions is provided by Schwarz et al. (2009), Autio et al. (1997), Chen et al. (1998) and Turker and Selcuk (2009). The analysis conducted by Tung et al. (2011) reports that the support provided by the university is a significant predictor of the proclivity toward entrepreneurship. In summary, with few exceptions, significant evidence is available about the role played by the university in influencing entrepreneurial intent. Beyond acquiring formal competencies, the university is seen as a social environment affecting individual creativity, spirit of independence and autonomy. On the grounds of the previous arguments, the last hypothesis that we propose for empirical testing is the following:

H3.3 Perceived support of entrepreneurship provided by family/friends, institutions and university is positively related to entrepreneurial intent.

3. Method

3.1Participants and procedure

Our sample consisted of 4583 students from the University of Parma. Among them, 1917 (41.9%) were men and 2659 (58.1%) were women (7 participants did not report their gender). The mean age of the sample was 23.12 years (*SD* = 0.49, range = 18-71 years). We enrolled both BA (73.2%) and MA students (26.8%) from different faculties.[3]

Questionnaires were distributed in both electronic (n = 3259) and paper-and-pencil (n = 1324) form. For the electronic version, participants were contacted by mail and invited to complete an online questionnaire. For the paper-and-pencil version, students were recruited

[3] In particular, 154 students (3.36%) came from the Faculty of Agricultural Science, 199 (4.34%) came from Architecture, 1072 (23.40%) came from Economics, 274 (5.98%) came from Pharmacy, 187 (4.08%) came from Law, 772 (16.85%) came from Engineering, 452 (9.86%) came from Philosophy, 454 (9.91%) came from Medicine, 93 (2.03%) came from Veterinary Medicine, 274 (5.98%) came from Psychology, 551 (12.03%) came from Natural Science, and 100 (2.18%) came from Political Science. Such sample distribution across faculties broadly reflects the underlying population.

in the classroom before the lesson and asked to complete the questionnaire. Participation was voluntary. The data were collected during May and June 2012.

3.2 Entrepreneurial intent

Entrepreneurial intent can be generally defined as the intention of an individual to set up a new business venture sometime in the future (Thompson, 2009). Previous studies have used different measures of entrepreneurial intent. Usually, these measures are associated with items that capture both the feeling of attraction to becoming an entrepreneurs and the perceived likelihood of starting a business (Davidsson, 1995; Kennedy et al., 2003; Thandi and Sharma 2003; De Pillis and Reardon, 2007; Lanero et al., 2011). In this study, we followed a similar approach and defined two distinct variables: the first is the *propensity* to start a new venture, which was measured with a single item asking participants to indicate the extent to which they were willing to create their own business. The choices were: 1 = no, I have no interest; 2 = no, I never think about it; 3 = yes, vaguely; 4 = yes, I do and this may be a future possibility; 5 = yes, I want to build an enterprise. The second variable is the *perceived likelihood* of being an entrepreneur in the future, which was measured with a single item asking participants to indicate the probability of starting a business in the next ten years. The scale was a 5-point Likert scale in which 1 = 0%; 2 = less than 25%; 3 = more than 25% and less than 50%; 4 = more than 50% and less than 75%; and 5 = more than 75%. Instead of combining these two measures into a single dependent variable, we chose to keep them separate. In our view, in fact, these two measures capture distinct aspects of entrepreneurial intent and we wanted to test whether our predictors impacted them differently.

3.3 Psychological variables

Psychological factors were captured by two distinct variables. The first is *achievement motivation,* which was measured with eight items asking participants to indicate the extent to which each item was a motive for creating a new enterprise (e.g., "To improve the quality of my life," "To be autonomous and independent") on a 4-point Likert scale (1 = strongly agree; 4 = strongly disagree). The second is *self-*

efficacy, which was measured with four items asking participants to indicate the extent to which they believe they are able to face problematic situations (e.g., "I think I am able to solve unexpected events") on a 4-point Likert scale (1 = strongly agree; 4 = strongly disagree).

3.4 Experiential variables

The second group of predictors consisted of experiential variables, including previous work experience, presence of role models and lack of entrepreneurial competences. *Work experience* was measured with a single dichotomous item asking participants to indicate whether they had some past work experience, in which 1 = yes and 0 = no. *Presence of role models* was measured with five dichotomous items asking participants to indicate whether their a) parents, b) brothers, c) other relatives, d) friends or e) other people they knew were entrepreneurs. For each cue, participants could indicate 1 = yes or 0 = no. The final score was computed as the sum of the five items, implying that it could range from 0 to 5. *Lack of competencies* was measured with three items asking participants to indicate the extent to which they perceived each item (e.g., "The lack of entrepreneurial competencies," "The lack of managerial and administrative experience") as an obstacle to creating a new business, recording each answer on a 4-point Likert scale in which 1 = very important and 4 = very unimportant.

3.5 Contextual variables

Five contextual variables constituted the third group of predictors. The first is *economic context as barrier*, which was measured with a single item asking participants to indicate the extent to which they consider that the existing economic situation can be an obstacle for the creation of new businesses on a 4-point Likert scale (1 = very important and 4 = very unimportant). The second variable is *risk perception*, which was measured by asking participants to indicate whether each of three aspects (e.g., "excessive risk," "fear of failure" and "the lack of initial capital") would be an obstacle to starting a new business (e.g., "excessive risk") on a 4-point Likert scale (1 = very important, 4 = very unimportant). The third variable is *family support*, which was measured with two items asking participants to indicate whether they would be supported by family or friends when starting a

new business (e.g., "If I started a company, I would be supported by my family") on a 4-point Likert scale (1 = strongly agree, 4 = strongly disagree). The fourth variable is *institutional support*, which was measured with seven items on a 4-point Likert scale. Participants indicated the extent to which they believed that some institutional aspects could hinder the starting of a new business (e.g., "The lack of business association supporting entrepreneurs," "The bureaucracy required to start a business"). Finally, the fifth variable is *university support*, which was measured by asking participants to indicate their agreement with four statements about the role of the university's support in entrepreneurship (e.g., "The university developed my entrepreneurial competence and skills") on a 4-point Likert scale (1 = strongly agree; 4 = strongly disagree).

4. Results

4.1 Preliminary analysis

Prior to testing the research hypotheses, we assessed the convergent and discriminant validity of some of our predictors through confirmatory factor analysis in which we tested a seven-factor structure (achievement motivation, self-efficacy, lack of competencies, risk perception, family support, institutional support, and university support). According to Kline (2005), the model fit was assessed considering the comparative fit index (CFI), Tucker Lewis index (TLI), root mean square error of approximation (RMSEA) and standardized root mean square residual (SMSR). CFI and TLI values greater than 0.90 and an SMSR value lower than 0.08 indicate satisfactory model fit (Kline, 2005). For RMSEA, values lower than 0.05 indicate close fit, and values between 0.05 and 0.08 indicate reasonable fit (Browne and Cudeck, 1992). Our seven-factor model showed a good fit ($\chi^2(400) = 3414.42$, $P < 0.001$, CFI = 0.93; TLI = 0.92, RMSEA = 0.039, 90% CI = 0.037-0.040, $P = 0.99$, SRMR = 0.039) and all items were significantly represented by the intended dimension (all Ps < 0.001). Thus, we retained the seven-factor solution and computed the score dimension as the mean of the intended items. Each dimension was calculated so that higher scores indicated higher levels of the measured construct. Table 1 shows descriptive statistics and factor determinacy for each dimension.

Table 1. Descriptive statistics and factor determinacy of the seven factors

		Min	Max	*Mean*	*SD*	Factor Determinacy	Items
1	Self-efficacy	1	4	2.79	0.52	0.90	4
2	Achievement motivation	1	4	3.21	0.56	0.93	8
3	Lack of competencies	1	4	3.05	0.69	0.92	3
4	Institutional support	1	4	2.90	0.46	0.91	7
5	University support	1	4	2.16	0.65	0.91	4
6	Family support	1	4	2.52	0.75	0.75	2
7	Risk perception	1	4	3.20	0.56	0.89	3

4.2 Regression analysis

To test our research hypotheses, we performed a four-stage hierarchical linear regression for both the propensity and perceived likelihood. The first stage contained sex and age. The second stage contained psychological variables (self-efficacy and achievement motivation), the third stage contained experiential variables (work experience, presence of role model(s), lack of entrepreneurial competencies) and the fourth stage contained contextual variables (lack of institutional support, university support, family support, risk perception and economic context as a barrier). Moreover, in each stage, faculty was added as control variable. Table 2 shows zero-order correlation among considered variables. As reported, all variables were

significantly correlated with both propensity and perceived likelihood, except for age, which was not correlated with perceived likelihood.

Table 2. Zero-order correlations among considered measures

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Entrepreneurial intent	1													
2	Perceived likelihood	0.51**	1												
Demographic variables															
3	Sex (0 = women)	0.24**	0.17**	1											
4	Age	0.09**	-0.01	0.04*	1										
Psychological variables															
5	Self-efficacy	0.39**	0.33**	0.13**	0.08**	1									
6	Achievement motivation	0.22**	0.16**	-0.06**	-0.02	0.21**	1								
Experiential variables															
7	Work experience (0 = No)	0.14**	0.06**	0.05**	0.21**	0.12**	0.04**	1							
8	Role model	0.30**	0.22**	0.10**	0.11**	0.20**	0.08**	0.13**	1						
9	Lack of competencies	-0.29**	-0.25**	-0.26**	-0.06**	-0.35**	0.09**	-0.10**	-0.19**	1					
Contextual variables															
10	Lack of institutional support	-0.12**	-0.15**	-0.15**	0.05**	-0.13**	0.21**	-0.03	-0.08**	0.53**	1				
11	University support	0.34**	0.31**	0.11**	-0.01	0.40**	0.23**	0.02	0.13**	-0.25**	-0.08**	1			
12	Family support	0.07**	0.11**	0.01	-0.12**	0.17**	0.07**	-0.05**	0.10**	-0.04*	-0.05**	0.15**	1		
13	Risk perception	-0.25**	-0.26**	-0.21**	-0.01	-0.28**	0.14**	-0.03*	-0.15**	0.48**	0.48**	-0.11**	-0.13**	1	
14	Economic context	-0.08**	-0.14**	-0.15**	0.00	-0.08**	0.19**	-0.01	0.02	-0.28**	-0.34**	0.05**	0.09**	-0.34**	1
	Mean	2.88	2.42	0.42	23.12	2.79	3.21	0.67	1.79	3.05	2.90	2.16	2.52	3.20	3.49
	SD	1.16	0.94	0.49	4.08	0.52	0.56	0.47	1.17	0.69	0.46	0.65	0.75	0.56	0.73

* $P < 0.05$; ** $P < 0.01$

Propensity

First, we checked for multicollinearity, finding that multicollinearity among variables was not present (Tolerance average value in model 4 = 0.763, *SD* = 0.133; VIF average value in model 4 = 1.351, *SD* = 0.251). Table 3 reports the results from the hierarchical regression analysis on the propensity to start a business. All models were statistically significant and R^2 improvement was statistically significant at each stage, with the fourth model explaining the 32% of the entrepreneurial propensity variance. All considered variables significantly predicted propensity in the expected direction, except for the lack of institutional support, family support and economic context as a barrier, which turned out to be not significant. Concerning demographic variables, the results indicated that men were more oriented toward entrepreneurship than women and that propensity increased with age. As we have already said, most of the hypothesized effects were confirmed. Psychological dimensions were positively related to propensity so that, in accordance with H1.1 and H1.2, the more that participants were achievement-oriented and self-efficacious, the more they were determined to start a new business. Even experiential variables had an important role; as expected from H2.1 and H2.3, participants with work experience and with a role model within their family (or network of friends) were more oriented toward entrepreneurship, while the perception of a lack of competencies hindered entrepreneurial propensity.

Finally, concerning contextual variables, risk perception hindered participants' willingness to start new businesses (H3.2) whereas the perception of university support increased propensity, in partial accordance with H3.3. However, and in contrast with H3.3 and with H3.1, perceived family support, lack of institutional support as well as the perception of economic context as a barrier had no significant effect.

Perceived Likelihood

The same hierarchical regression analysis described above was performed on perceived likelihood, and the results are reported in

Table 4. Additionally in this case, no multicollinearity appeared (Tolerance average value in model 4 = 0.763, *SD* = 0.134; VIF average value in model 4 = 1.352, *SD* = 0.253). The results indicated that all models were statistically significant and R^2 improvement was again statistically significant at each stage, with the fourth stage accounting for the 23% of the perceived likelihood variance.

Similarly to what was found for *propensity*, perceived *likelihood* was higher for men, more self-efficacious and achievement-oriented people (according with H1.1 and H1.2, respectively) and for individuals with a role model (according with H2.3). Partially in accordance with H3.3 and H3.2, even people who perceived more university support and lower risks show more entrepreneurial likelihood. Again, contrary to H3.3, lack of institutional support and family support had no significant effects on perceived likelihood of starting a business. However, some expected paths for *likelihood* were not significant. First, and contrary to what was found about propensity, the likelihood decreased with increased age. Again, and contrary to H2.1, work experience was not significant when entered in the regression (model 3) and remained not significant when other variables were added. In accordance with H2.2, the lack of competencies was, as expected, significant when entered in the regression (model 3) but it lost its effect when contextual variables were entered into the model (model 4). Finally, and in partial contrast with the results obtained with the *propensity* measure but in line with H3.1, the perception of high economic barriers significantly reduces the perceived likelihood of starting a business.

Table 3. Results of the hierarchical regression analysis for propensity to start a business

	Model 1		Model 2		Model 3		Model 4	
	B	*SE*	*B*	*SE*	*B*	*SE*	*B*	*SE*
Intercept	20.440**	0.100	-0.385**	0.143	0.417*	0.165	0.713**	0.187
Demographic variables								
Age	0.023**	0.004	0.016**	0.004	0.008*	0.004	0.008*	0.004
Sex	0.483**	0.036	0.420**	0.033	0.340**	0.033	0.315**	0.032
Psychological variables								
Self-efficacy	\	\	0.686**	0.030	0.516**	0.032	0.384**	0.033
Achievement motivation	\	\	0.305**	0.028	0.329**	0.027	0.318**	0.028
Experiential variables								
Lack competencies	\	\	\	\	-0.203**	0.024	-0.105**	0.028
Work experience	\	\	\	\	0.117**	0.032	0.139**	0.032
Role model	\	\	\	\	0.181**	0.013	0.174**	0.013
Contextual variables								
Lack of institutional support	\	\	\	\	\	\	0.040	0.040
University support	\	\	\	\	\	\	0.260**	0.027
Family support	\	\	\	\	\	\	-0.037	0.020
Risk perception	\	\	\	\	\	\	-0.264**	0.032
Economic context as barrier	\	\	\	\	\	\	-0.006	0.022
F	45.293**		97.169**		105.158**		92.113**	
R^2	0.116		0.245		0.297		0.321	
adj R^2	0.114		0.243		0.294		0.318	
ΔR^2			0.129**		0.052**		0.024**	

NOTE. Sex: 0 = female; Work experience: 0 = no. * $P < 0.05$; ** $P < 0.001$

Table 4. Results of the hierarchical regression analysis for perceived likelihood.

	Model 1		Model 2		Model 3		Model 4	
	B	*SE*	*B*	*SE*	*B*	*SE*	*B*	*SE*
Intercept	20.498**	0.084	0.592**	0.124	10.215**	0.146	10.551**	0.163
Demographic variables								
Age	-0.002	0.003	-0.006*	0.003	-0.010**	0.003	-0.008*	0.003
Sex	0.274**	0.030	0.220**	0.029	0.166**	0.029	0.134**	0.028
Psychological variables								
Self-Efficacy	\	\	0.536**	0.026	0.421**	0.028	0.279**	0.029
Achievement motivation	\	\	0.148**	0.024	0.172**	0.024	0.180**	0.025
Experiential variables								
Lack of competencies	\	\	\	\	-0.161**	0.021	-0.035	0.024
Work experience	\	\	\	\	0.018	0.029	0.048	0.028
Role model	\	\	\	\	0.102**	0.011	0.093**	0.011
Contextual variables								
Lack of institutional support	\	\	\	\	\	\	-0.005	0.035
University support	\	\	\	\	\	\	0.260**	0.024
Family support	\	\	\	\	\	\	0.014	0.017
Risk perception	\	\	\	\	\	\	-0.242**	0.028
Economic context as barrier	\	\	\	\	\	\	-0.081**	0.019
F	21.179**		55.723**		56.895**		58.017**	
R^2	0.059		0.159		0.188		0.232	
adj *R2*	0.056		0.156		0.185		0.228	
ΔR^2			0.100**		0.029**		0.044**	

NOTE. Sex: 0 = female; Work experience: 0 = no. * $P < 0.05$; ** $P < 0.001$

4.3 Further analyses

To further investigate the relationship between variables and, in particular, the observation that some variables lost their effects when entered into the regression models, we performed mediation analysis. Related to propensity, institutional and family support as well as economic context as a barrier lost their zero-order significant effect when inserted into the regression equation. This seems to suggest that their effect would be mediated by some of the other variables. Observing the zero-order correlations matrix, we detected risk perception as a candidate for mediating the relationship between lack of institutional support and entrepreneurial intent. Accordingly, Sobel's test revealed that when risk perception was added to the regression, the significant effect of a lack of institutional support disappeared (β = -0.12, $P < 0.001$; β = -0.01 ns, Sobel's test = 14.010, $P < 0.001$). In other words, a lack of institutional support affected propensity only through an increased perception of risk (Figure 1a).

For family support, the correlation matrix indicated both university support and self-efficacy as potential mediators. Accordingly, Sobel's test revealed that both university support (9.293, $P < 0.001$) and self-efficacy (10.942, $P < 0.001$) completely mediated the relationship between family support and entrepreneurial propensity. Thus, family support increases the propensity to start a business because it increases both the perception of university support and self-efficacy (Figure 1b).

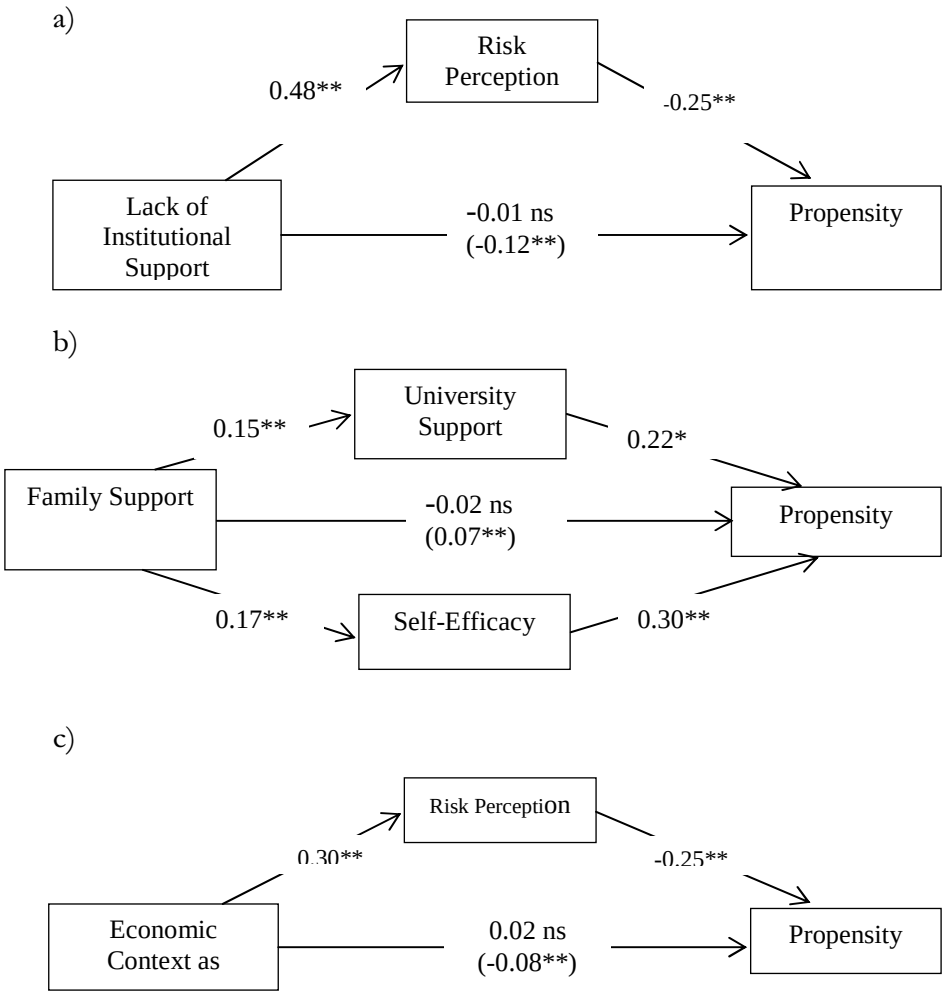
Finally, risk perception also completely mediated the relationship between economic context as a barrier and entrepreneurial propensity (Sobel's test = 5.281, $P < 0.001$) in such a way that this relationship turned out to be not significant when risk perception was added to the model (β = -0.08, $P < 0.001$ and β = 0.02, $P < 0.16$). Additionally in this case, economic context acts as a barrier to entrepreneurial propensity because it increases the perception of risk (Figure 1c).

We also tested the mediation model for perceived likelihood. Even in this case, the significant zero-order correlation of lack of institutional support and family support on the perceived likelihood disappeared when other variables were added to the regression. Thus, we verified the same mediation patterns tested for entrepreneurial intent. Again, the effect of the lack of institutional (Figure 1d). support

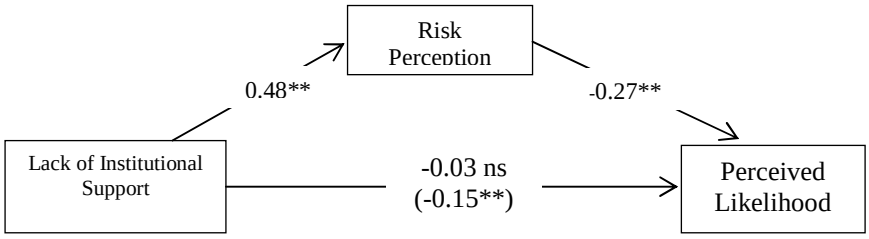
was completely mediated by risk perception (Sobel's test = 14.388, $P < 0.001$).

For family support (Figure 1e)., we found that university support (Sobel's test = 9.100, $P < 0.001$) and self-efficacy (Sobel's test = 10.558, $P < 0.001$) again mediated the relationship between family support and perceived likelihood but, in this case, the mediation was only partial because family support maintained a significant effect (β = 0.037, $P < 0.01$) when controlled for by university support and self-efficacy.

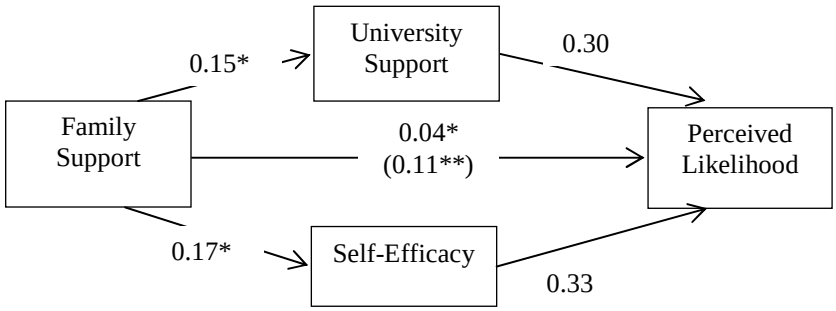
Figure 1. Mediational analysis paths



d)



e)



Standardized coefficients are reported. * $P < 0.01$, ** $P < 0.001$

5. Discussion and conclusion

Focused on young Italian potential entrepreneurs, this paper aimed to better understand the role of different theoretical variables that could determine these young people's decision to start a new business. More precisely, three different typologies of predictors, defined in accordance with Bronfenbrenner's ecological systems theory (1979), were tested considering two dimensions of entrepreneurial intent, namely the propensity and the likelihood to start a venture.

Some of our findings confirm previous empirical evidence, showing the same expected paths for both propensity and likelihood. As suggested by a large portion of the literature (Davidsson 2006; Lans *et al.*, 2010; Sandhu et al. 2011; Zhao *et al.,* 2005), male students are, on average, more oriented toward entrepreneurship and perceive a higher likelihood of starting a new venture than female students. Even our results concerning psychological variables confirm most of the previous findings; self-efficacy and achievement motivations are significant predictors of both entrepreneurial propensity and the perceived likelihood of starting a business. However, this common result is qualified by the fact that their significant effect is not hindered when contextual variables such as economic barriers and lack of institutional support are taken into account. The effects of these psychological factors are not weakened nor suppressed in a context affected by a deep economic crisis, such as the context in Italy. To some extent, entrepreneurship seems to be strongly affected by the psychological dispositions of people, independently of contingent circumstances.

Experiential factors as role models and two of our contextual variables showed effects in the hypothesized direction on both propensity and likelihood. On the one hand, in line with our expectations, knowing some entrepreneurs favors the two dimensions of entrepreneurial intent. On the other hand, the more students perceive university support as salient and the less they perceive risk, the more they are interested in starting a new business and the higher their perceived likelihood of succeeding. The lack of institutional support and perception of family support, on the contrary, affect neither propensity nor perceived likelihood when all the other contextual variables are controlled for. Tentatively, we can conclude that while an adverse economic context does not reduce the individual propensity to start a new firm, it negatively impacts the likelihood to turn the intention into a reality. Finally, in a country characterized by the widespread and relevant role of "strong ties" and where the family is crucial in feeding a strong entrepreneurial supply (Piore and Sabel, 1984; Colli and Rose 1999; Guerrieri and Petrobelli, 2004), it is interesting to observe that family support is perceived to be hardly relevant in stimulating entrepreneurship.

Mediation analysis, however, reveals that the effect of such variables can be mediated by other predictors included in our model. In

particular, we found that while the lack of institutional support has an indirect effect on both propensity and perceived likelihood through risk perception, the overall impact of family support is mediated by both university support and self-efficacy. This seems to suggest that while a lack of institutional support can decrease entrepreneurial intent because it increases the perception of risk, family support can instead increase students' self-efficacy and awareness of competencies acquired at the university, which, in turn, foster entrepreneurial orientation.

However, the most significant results of this work concern the observation that the two dimensions of entrepreneurial intent we considered are explained by partially different sets of variables. First, we found that the perception of the economic context as a barrier has a negative and highly significant impact on the likelihood to start a business, but this effect on propensity does not emerge when it is controlled for by other variables. In this case, the effect of the economic context is completely mediated by risk perception, indicating that economic barriers decrease entrepreneurial propensity because of the increased perception of risk. Second, it appears that while older students show higher propensity, they perceive themselves to be less likely to actually start a business when the full set of psychosocial variables is taken into account. In other words, if increasing age does not weaken the aspiration to start a business, it seems to modify the perception of the difficulties that could affect the project. Third, the lack of competences and previous work experience affects only entrepreneurial propensity when all the other variables are controlled for.

These results have a number of implications not only for academics but also for policy makers. Formative and development programs should take into account the double dimension of entrepreneurial intent. The results suggest that macro-economic difficulties, particularly in a country affected by a deep economic crisis such as Italy, influence entrepreneurial supply primarily through a worsening of the perceived probability to succeed and only marginally through a reduction in the propensity to start a business. Educational efforts should pay attention to the factors that affect the perceived likelihood of becoming an entrepreneur.

Like all research, this study also has several limitations. First, the use of cross-sectional questionnaires instead of an experimental design

imposes caution about the causal relationships between predictors and entrepreneurial intent (both in terms of propensity and perceived likelihood). Moreover, this design may introduce distortion in results, given the common method variance and social desirability. These aspects should limit the generalizability of present results. However, the very large and heterogeneous (in terms of faculties) sample used in this research, as well as the consistency between these results and those obtained through experimental research, somewhat mitigate these shortcomings.

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