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My choices are better than yours! Gender differences in narcissistic start-ups entrepreneurs / Leonelli, Simona. - In: EUROMED JOURNAL OF BUSINESS. - ISSN 1450-2194. - 17:4(2022), pp. 488-502. [10.1108/EMJB-12-2020-0130]

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*Original Citation:*

*Availability:*

This version is available at: 11577/3390023 since: 2022-11-30T19:35:27Z

*Publisher:*

*Published version:*

DOI: 10.1108/EMJB-12-2020-0130

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**My choices are better than yours! Gender differences in narcissistic start-ups entrepreneurs**

Journal:	<i>EuroMed Journal of Business</i>
Manuscript ID	EMJB-12-2020-0130.R2
Manuscript Type:	Empirical Research Paper
Keywords:	Narcissism, Gender, Entrepreneurs, Start-ups, organizational choices

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3 **My choices are better than yours! Gender differences in narcissistic start-**  
4 **ups entrepreneurs.**  
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12 **Abstract**

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15 **Purpose:** The paper explores the role of narcissism on entrepreneurs' decisions in terms of  
16 organizational choices, discussing gender differences. The aim relies on the influence that  
17 entrepreneurs' personality, capabilities, and cognitive orientation have in the creation and  
18 management of start-ups.  
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26 **Design/methodology/approach:** Analyzing an Italian sample of 207 entrepreneurs and using  
27 ANOVA and generalized linear model methods, the hypotheses were tested to understand  
28 whether and how narcissism affects R&D expenditure, patent ownership, and the presence of a  
29 specialized team in organizations led by women and men entrepreneurs.  
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36 **Findings:** Differences in the management and organizational choices of narcissistic women  
37 entrepreneurs compared to their men counterparts emerged. First, results show that women  
38 entrepreneurs are less narcissistic than men. Second, gender is shown to moderate the effect of  
39 narcissism on the choice of having a qualified team in a start-up. Third, narcissistic women  
40 entrepreneurs were found to engage less in risk-taking activities, such as R&D expenditure, and  
41 to patent their ideas more than their male counterparts.  
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51 **Originality:** The study expands the existing literature by applying a gendered lens to  
52 entrepreneurs' narcissism to investigate whether they behave and manage their start-ups  
53 differently.  
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3 **Keywords:** *Narcissism, Gender, Entrepreneur, Start-up, R&D expenditure, Qualified team,*  
4 *Patent ownership.*  
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9 **Article classification:** Empirical Research Paper  
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EuroMed Journal of Business

## 1. Introduction

The creation and management of start-ups is a process filled with difficulty and failure (Venkataraman et al., 1990). Previous studies suggest that the personality, capabilities, and cognitive orientation of entrepreneurs strongly influence their willingness to pursue their entrepreneurial activity and face difficulties (Nga and Shamuganathan, 2010, Macenczak et al., 2016, Mathieu and St-Jean, 2013, Buttice and Rovelli, 2020). For example, entrepreneurs who believe they can control the environment through their behavior will be more likely to persist in entrepreneurial activities when experiencing difficulties. The emphasis on entrepreneurial personality has led to considering both the bright and dark sides of personality traits, showing both the positive and negative effects on the firm outcome (Resick et al., 2009). The paper focuses on narcissism as a personality trait identified as a set of self-centered behaviors, such as high self-esteem, self-promotion, and self-enhancement (Leonelli et al., 2019a). However, few studies have examined gender in the context of entrepreneurs' narcissism despite the established differences in entrepreneurship between men and women (Ingersoll et al., 2019). Specifically, the paper investigates whether narcissism is more prevalent among women or men entrepreneurs and whether narcissistic female entrepreneurs tend to invest more, less, or equally in R&D, in protecting their ideas, and in having a specialized team, compared to narcissistic male entrepreneurs. Based on the upper echelon theory (Hambrick and Mason, 1984) and social role theory (Eagly et al., 2000), 207 Italian entrepreneurs and start-ups will be examined to understand whether and how narcissism affects firm-level practices in organizations led by women and men entrepreneurs. Thereby, the present paper advances two theretofore-distinct studies: research on the organizational impacts of narcissism and women entrepreneurship, answering the Cragun et colleagues' (2020) call for future studies about the investigation of individual attributes that could influence narcissism manifestation and how narcissism could

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3 impact on organizational choices and outcomes. Finally, the paper provides useful and practical  
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5 implications for governments and policymakers.  
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## 8 **2. Theoretical Background and Hypotheses**

### 9 10 11 *2.1. Entrepreneur narcissism*

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15 Research on entrepreneur narcissism is generally linked to the upper echelons theory, which  
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17 considers organizations as a reflection of their managers' priorities and values (Hambrick and  
18  
19 Mason, 1984). According to this theory, the personality of entrepreneurs and CEOs shapes  
20  
21 organizational outcomes as a result of their ability to influence firm strategy, policy, and practice  
22  
23 (Hambrick, 2007). This influence is further amplified in micro firms, such as start-ups, where  
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25 entrepreneurs are surrounded by few peers and employees and also act as CEOs, having formal  
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27 and informal powers to explore and implement promising ideas (Abebe and Alvarado, 2013,  
28  
29 Leonelli et al., 2019a).  
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34 As already suggested by prior research, in fact, their personality can have significant and lasting  
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36 impacts on organizations (Galvin et al., 2015, Leonelli et al., 2019b, Smith and Webster, 2018).  
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38  
39 The word narcissism comes from the Greek mythological character Narcissus, known for his  
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41 beauty, who fell in love with his own reflection and drowned trying to reach his beloved.  
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43  
44 Therefore, this word is still associated with concepts such as a sense of superiority, self-  
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46 centeredness, entitlement, and a strong desire for authority and personal power. Here, narcissism  
47  
48 is considered as a personality dimension, not a clinical disorder. Personality traits tend to remain  
49  
50 stable over time and explain why people act differently in the same situation (Leonelli et al.,  
51  
52 2016). Narcissism, per se, encompasses various facets that are essential for effective leaders  
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54 (Judge et al., 2009, Gruda et al., 2021). Narcissistic entrepreneurs have a constant need for praise  
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56 and approval from their "followers," although they tend not to show their insecurities. They  
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58 describe themselves as having a strong personality, yet at the same time, they would get upset if  
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3 people did not notice their looks when they go out in public. Narcissism, therefore, is a complex  
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5 personality dimension, including both bright and dark aspects, like every personality trait.  
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7 Studies related to the dark side of narcissism show that narcissists usually act in an insensitive  
8  
9 and hostile way due to their tendency to see others as inferior. Furthermore, they exhibit a self-  
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11 serving bias in interpreting information and often make decisions based on how they will affect  
12  
13 their image and reputation. Accordingly, they tend to lack empathy, and in conversation, they  
14  
15 engage in manipulative patterns serving their own interests and objectives (Judge et al., 2009,  
16  
17 Chatterjee and Hambrick, 2007). Conversely, the bright side of narcissism is associated with the  
18  
19 idea of the “charismatic leader.” The organizational goals will reflect the narcissistic  
20  
21 characteristics of the entrepreneurs, who will thus share with peers and employees their pleasure  
22  
23 in performing a task and their apprehension during a challenge (Maccoby, 2012, Gruda et al.,  
24  
25 2021). Moreover, narcissistic leaders have grandiose visions for their company, which enables  
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27 them to attract many followers (Macenczak et al., 2016).  
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## 34 *2.2. Entrepreneur gender and narcissism*

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36 Narcissism is not a gender-egalitarian phenomenon. Prior studies, in fact, show that men are  
37  
38 more narcissistic than women (Ingersoll et al., 2019, Grijalva et al., 2015). Men leaders fully  
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40 reflect the values of grandiose narcissism, showing characteristics such as superiority (i.e.,  
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42 everything is due) as well as the need to appear or assert themselves to achieve goals (Tschanz  
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44 et al., 1998). Morf and Rhodewalt (2001) argue that the differences in the levels of narcissism  
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46 between men and women depend on their social role. According to social role theory, the  
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48 behavioral differences between the sexes primarily arise from the differential social roles  
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50 occupied by women and men, especially those concerning the division of labor (Eagly et al.,  
51  
52 2000). Since women experience significant limitations on their ability to show typical  
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54 leadership qualities such as dominance, competitiveness, and assertiveness, their path to top  
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56 leadership is constrained and distinct from that of the one followed by men leaders (Glass and  
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3 Cook, 2016). In detail, according to Harms et al. (2020), successful entrepreneurs generally  
4 show masculine characteristics (i.e., aggressiveness and opportunism). This result might also  
5 be related to the cultural background; generally, men decide to create a new business to make  
6 things happen and accept the challenge to control their destiny, while women are pushed from  
7 the high degree of dissatisfaction with the previous occupation. Moreover, Gruda et al. (2021)  
8 state that gender impacts the degree to which narcissistic entrepreneurs are perceived as  
9 productive and qualified. De Hoogh et al. (2015) instead demonstrate that the relationship  
10 between entrepreneur gender and followers' gender impact firms' outcome. In this vein,  
11 numerous studies underline that women who hold leadership positions are evaluated negatively  
12 if they behave as autocratic or directive because they are incongruent with the expected sex-  
13 role behavior (i.e., helpful and nurturing). Finally, recent studies also show that narcissism  
14 affects fundraising success (Anglin et al., 2018, Leonelli et al., 2020) and that gender could be  
15 a possible moderator of the above relationship even if this result is not supported yet (Gruda et  
16 al., 2021).

17  
18 In this paper, gender differences are considered on the basis of the three best-known  
19 mechanisms related to entrepreneur narcissism - *leadership*, *exploitation*, and *exhibitionism*.  
20 *Leadership* is associated with the desire to exercise authority and control over others. Men  
21 entrepreneurs show a greater desire for power; they are more motivated than women to achieve  
22 managerial roles and emerge as leaders (Grijalva et al., 2015). *Exploitation* refers to the levels  
23 of aggressiveness, the implementation of counterproductive behaviors, and the propensity to  
24 commit fraud. Men entrepreneurs show a great ability to assert themselves through persuasion  
25 and exploitation of others compared to their female counterparts. Additionally, men are  
26 rewarded for publicly displaying anger since they are perceived as demanding and deserving.  
27 Women, on the other hand, are often punished for similar behavior because they are seen as  
28 hysterical or too emotional (Ingersoll et al., 2019, Brescoll and Uhlmann, 2008). Lastly,  
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3 *exhibitionism* builds on vanity and the desire to be the center of attention. However, while men  
4 are rewarded for self-promotion, women are evaluated negatively (Livingston et al., 2012).  
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6 Therefore, not to violate the stereotypical gender role expectations, women are discouraged  
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8 from an early age to engage in narcissistic behavior. Furthermore, if they have narcissistic  
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10 characteristics (e.g., an inflated sense of self-importance, dominance, and lack of empathy),  
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12 they prefer not to show them openly. Thus, it is stated that:  
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16 Hypothesis 1. Women entrepreneurs are less narcissistic than men entrepreneurs.  
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### 19 20 *2.3. Entrepreneur gender, narcissism, and start-up dynamics* 21 22

23 As for start-up dynamics, this paper considers the amount that start-up invest in R&D (i.e.,  
24 Start-up R&D expenditure), the presence of a qualified team (i.e., Start-up qualified team), and  
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26 the ownership of patents (i.e., Start-up patent ownership). Narcissistic entrepreneurs see start-  
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28 ups as an extension of themselves and tend to look for extreme and grandiose strategies that  
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30 endanger their organizations (Chatterjee and Hambrick, 2007). However, the decisions about  
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32 investments in R&D are more important for start-up entrepreneurs compared to larger  
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34 companies (Whalley, 2011, Innocenti and Zampi, 2019). The assessment of R&D investments  
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36 is complicated because it is related to uncertainties associated with the possible profitability of  
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38 the R&D project. Not only is the value of the R&D project output generally uncertain, but there  
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40 is often even greater uncertainty about the expected cost for the completion of the R&D project  
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42 (Whalley, 2011). However, women are more risk-averse than men (Nelson, 2015, Hoang et al.,  
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44 2019). Female entrepreneurs generally avoid constraints that limit their ability to lead  
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46 organizational initiatives, particularly those that are risky, novel, or harmful to the organization.  
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48 As a result of these constraints, narcissistic women entrepreneurs - unlike their male  
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50 counterparts - are expected to be unable to pursue high-risk practices, such as investing more  
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52 in R&D expenditure. Thus, it is hypothesized that:  
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3 Hypothesis 2. Gender moderates the effect of narcissism on the amount of R&D expenditure  
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5 so that narcissistic women entrepreneurs will invest less in R&D than narcissistic men  
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7 entrepreneurs.  
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10 The presence of a qualified team within a start-up is a surplus. Skilled team members can offer  
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12 extensive knowledge, access to resources not available internally, and can contribute with vast  
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14 experience (Kor, 2003, Jyoti and Singh, 2020). The personal characteristics of entrepreneurs  
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16 impact the presence or absence of a qualified team in a start-up and on the relationship that  
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18 these entrepreneurs will have with the team. Narcissistic entrepreneurs may feel threatened by  
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20 the presence of a qualified team because they prefer to act independently, impose their view on  
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22 the team, and be the center of attention (Rosenthal and Pittinsky, 2006, Lumpkin and Dess,  
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24 1996). Hence, the presence of skilled people may obscure their magical aura.  
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28 However, there are differences in the levels of narcissism between women and men  
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30 entrepreneurs. Women entrepreneurs show less narcissistic characteristics than their male  
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32 counterparts and, due to their intrinsic features, they may prefer being surrounded by qualified  
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34 peers and employees. At the same time, Shaw et al. (2009) suggest that women have smaller  
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36 and less effective entrepreneurial networks than men, so the presence of a qualified team can  
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38 contribute to the achievement of more resources and information. For this reason, it is stated  
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40 that:  
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44 Hypothesis 3. Gender moderates the effect of narcissism on the presence of a qualified team in  
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46 a start-up so that narcissistic women entrepreneurs prefer the presence of a qualified team more  
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48 than narcissistic men entrepreneurs.  
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51 Discovering new technologies is a challenging task, but creating a start-up based on such  
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53 discoveries requires further tenacity and a stronger sense of control (Markman et al., 2005,  
54  
55 Couch et al., 2018). Entrepreneurs should convert their new technological breakthroughs into  
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57 working prototypes and turn them into profit-yielding products and services (Markman et al.,  
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2005). Self-efficacy and self-belief are key characteristics that favor entrepreneurs in making discoveries as well as obtaining patents, which are frequently refuted before obtaining patent status (Bandura, 2001, Jensen et al., 2018). As the discovery process is filled with technological obstacles, success in obtaining patents rests heavily on a strong self-belief (Markman et al., 2005). Therefore, determination, perseverance, problem-solving ability, and tolerance for failure are vital to achieving the patent's goal (McKay, 2001). Narcissistic women entrepreneurs possess these characteristics in higher values compared to men entrepreneurs. Thus, it is stated that:

Hypothesis 4. Gender moderates the effect of narcissism on start-ups' patent ownership so that narcissistic women entrepreneurs patent their ideas more than narcissistic men entrepreneurs.

### 3. Methodology

#### 3.1. Sample and procedure

This study is based on a sample consisting of Italian start-ups enlisted in the register of the Italian Chamber of Commerce. The initial sample included 500 start-ups randomly selected in the Italian territory. Entrepreneurs were contacted via their LinkedIn profile or email address, where they received the project outline and an invitation to be part of it. A link to the online survey was sent to those who agreed. Among them, 207 entrepreneurs answered the questionnaire (28.36% response rate). The survey was administered between September and November 2019; three reminder emails were sent to encourage response.

The data for the analysis consists of survey data and secondary data from a public database, thus increasing external validity. Entrepreneurs' personal information was collected through the survey, start-ups' financial information was gathered by consulting the Aida database, which contains complete information on Italian firms. Patent information was obtained from the Italian Patent register.

### 3.2. Measure

#### 3.2.1. Dependent and Independent variables

Entrepreneur narcissism was measured using the short version of the Narcissistic Personality Inventory (NPI-16) developed by Ames et al. (2006) since entrepreneurs are usually time-constrained (Wallace & Baumeister, 2002). A five-point Likert scale version adopted by Gentile (2013), eliminating the non-narcissistic statement from each item, was employed. The original survey items were translated from English into Italian following a rigorous back-translation technique. The independent variables were all dummy variables. *Start-up R&D expenditure* was given the value one if the start-up spent at least 15% of its annual costs in R&D and zero if it did not. *Start-up qualified team* was assigned the value one if the total workforce included at least 1/3 of PhDs or at least 2/3 of the team held a master's degree, and zero if it did not. These two criteria are chosen because, according to the Italian law, start-ups with these characteristics are more likely to spur innovation (Italian Ministry of Economic Development, 2019). Finally, *start-up patent ownership* had the value one if the start-up owned at least one patent and zero if it did not. The choice to use a dummy variable was determined by the fact that small firms generally have a small number of patents.

#### 3.2.2. Control variables

In this model, seven control variables controlling for individual, firm, and environment level factors were used to minimize variances not directly linked to the present study. At the individual level, entrepreneur's education and age were controlled for. Entrepreneurs with longer/higher education are likely to have access to a greater amount of resources to support their entrepreneurial ambitions and a greater ability to recognize opportunities and exploit them successfully (Altinay and Wang, 2011). Entrepreneurs' age can influence their level of aggressiveness and risk-taking, with older entrepreneurs generally being less aggressive and

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3 risk-prone (Bertrand and Schoar, 2003). At the firm level, start-up age and initial capital were  
4 controlled for. The age and capital of start-ups affect the choice to invest and pursue innovation,  
5 for example, a higher initial capital can push start-ups to make riskier and more innovative  
6 investments (Nanda and Rhodes-Kropf, 2013). Finally, at the environmental level, industry,  
7 technology intensity, and geographical area were controlled for. In order to underline the level  
8 of technology, we have grouped start-ups based on the R&D intensities in manufacturing and  
9 service industries (low-, mid-low, mid-high, and high). For the start-ups belonging to the  
10 manufacturing industries, we have followed the classification of Carroll et al. (2000), while for  
11 those belonging to the service industries, we have followed the classification of Galindo-Rueda  
12 and Verger (2016). The exact geographical location of the start-up may provide a cultural milieu  
13 influencing the propensity for risk and innovativeness, as well as the entrepreneurial orientation  
14 of the firm owner (Kreiser et al., 2010).

### 31 3.3. *Analysis*

32 Exploratory factor analysis (EFA) was conducted to extract the appropriate number of factors  
33 from the narcissism scales. In accordance with Osborne and Costello (2009), the eigenvalue  
34 graph was examined to identify natural curves or breakpoints. The graph suggested retaining  
35 only one factor because of the steep slope between the first and second factors. Cronbach's alpha  
36 is 0.80. Hypothesis 1 was tested using ANOVA and Cohen's D to assess the mean difference  
37 between two unequal sample sizes. Given the unequal sample sizes, a matched-sample test (i.e.,  
38 Tukey test) of Hypothesis 1 was also performed. Since our dependent variables are dummy  
39 variables, we employed logistic regressions to test Hypotheses 2, 3, and 4. A Gaussian (normal)  
40 distribution with an identity link function was specified. This same approach has been used in  
41 prior studies examining the effect of CEO narcissism (Chatterjee and Hambrick, 2007,  
42 Chatterjee and Hambrick, 2011).

### 3.4. Results

Table 1 reports the characteristics of the surveyed sample. In detail, the start-ups in our sample belong mainly to service industries (43.96%), operate in medium-high tech industries (47.34%), are located in the North West area of Italy (48.79%), and, as initial capital, they have invested between 5,000 and 10,000 euros (42.51%). Regarding the entrepreneurs, the gender is almost well balanced (i.e., 54.59% male and 45.41% female); entrepreneurs are between 30 and 39 years old (40.10%) and possess a master's degree level of education (60.39%).

\*\*\* Insert Table 1 here\*\*\*

Descriptive statistics and Spearman's correlations results of the examined variables are presented in Table 2 and Table 3. We used Spearman's rank-order correlation because it is a unique tool that enables to calculate the correlation of continuous and ordinal variables (Hauke and Kossowski, 2011). Interesting results arise from Table 3. In detail, the strong correlations between our three dependent variables justify our choice again to investigate these phenomena separately (e.g., start-up R&D expenditure vs start-up qualified team,  $r=-0.678$ ,  $p<0.05$ ). Furthermore, results show a strong positive association between entrepreneur gender and start-up's age ( $r=0.853$ ,  $p<0.05$ ) and between entrepreneur narcissism and start-up's age ( $r=0.450$ ,  $p<0.05$ ).

\*\*\* Insert Table 2 here\*\*\*

\*\*\* Insert Table 3 here\*\*\*

Hypothesis 1 predicts that women entrepreneurs will be less narcissistic than men entrepreneurs. Specifically, in the mean comparison within Table 2, women entrepreneurs scored substantially lower on the narcissism measure than their male counterparts ( $-0.39$  vs.  $0.35$ ). Moreover, in Table 3, results show a strong positive association between entrepreneur narcissism and entrepreneur gender ( $r=0.402$ ,  $p<0.05$ ), underlining a positive association between a higher level of narcissism and male entrepreneurs. Finally, we conducted the ANOVA test, a technique used

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3 to compare the means of two or more samples (Howell, 2010), and the Tukey test, which is a  
4 post-hoc ANOVA's test, to determine which specific groups' means are different (Abdi and  
5 Williams, 2010). In detail, there is a statistically significant difference between groups (i.e., male  
6 and female) as determined by the one-way ANOVA test ( $F(1, 205)=42.44, p=0.000$ ), and the  
7 Tukey test revealed that entrepreneur narcissism is statistically significantly higher in men  
8 entrepreneurs compared to women entrepreneurs ( $0.74 \pm 0.11, p=0.000$ ). These results allow us  
9 to fully support Hypothesis 1.

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12 Table 4 presents the results of the logistic regressions, with column 1 showing the results for the  
13 total sample, and columns 2 and 3 reporting cross-sectional analyses by gender.

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30 Hypothesis 2 suggests that gender moderates the effect of narcissism on the amount of start-up  
31 R&D expenditure so that narcissistic women entrepreneurs will invest less in R&D than  
32 narcissistic men entrepreneurs. In Panel A, the non-significant interaction between gender and  
33 narcissism ( $p=0.569$ ) leads to the rejection of Hypothesis 2 in the first place. Considering the  
34 results shown in columns 2 and 3, narcissism was found to have a negative and statistically  
35 significant effect on start-up R&D expenditure only in the female sample. This result could be  
36 linked to the different ways men and women face risks, confirming that narcissistic women  
37 entrepreneurs tend to engage in significantly fewer risky activities, which partially supports  
38 Hypothesis 2. Hypothesis 3 suggests that gender moderates the effect of narcissism on the  
39 presence of a qualified team in start-ups. This means that narcissistic women entrepreneurs will  
40 prefer being surrounded by qualified employees and peers more than narcissistic men  
41 entrepreneurs. In Panel B, the interaction term between gender and narcissism is negative and  
42 statistically significant ( $p<0.1$ ), suggesting that gender mitigates the effect of narcissism on the  
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3 presence of a qualified team. Women entrepreneurs with high levels of narcissism prefer being  
4 surrounded by qualified employees and peers more than their male counterparts. The results in  
5 columns 2 and 3 confirm that narcissism has a positive and statistically significant effect on the  
6 propensity to work in and with a specialized team within the women entrepreneur sample  
7 analyzed.  
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14 Finally, Hypothesis 4 suggests that gender moderates the effect of narcissism on start-up patent  
15 ownership. In this perspective, narcissistic women entrepreneurs patent their idea more than  
16 narcissistic men entrepreneurs. In the full sample column of Panel C, the interaction term gender  
17 and narcissism has a negative and non-statistically significant result, which, at first sight, leads  
18 to the rejection of Hypothesis 4. However, results in the female sample column confirm that  
19 narcissism has a positive and statistically significant effect on patent ownership. This result,  
20 however, is not significant in the male sample, showing that, as the level of narcissism increases,  
21 women have a higher propensity to patent than men.  
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33 In sum, results support Hypothesis 1 and 3 and partially Hypothesis 2 and 4.  
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#### 37 **4. Discussions**

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40 This paper investigates whether narcissism is prevalent among women entrepreneurs, as well as  
41 the differences in the behavior of narcissistic women entrepreneurs concerning their start-ups'  
42 management and organizational choices compared to their male counterparts. Results show that  
43 women entrepreneurs are less narcissistic than men. Additionally, findings suggest that gender  
44 moderates the effect of narcissism on the choice to have a qualified team operating in the start-  
45 ups. This means that narcissistic women entrepreneurs prefer being surrounded by qualified  
46 employees and peers more than narcissistic men. As for R&D expenditure and patent  
47 ownership, the hypotheses are partially confirmed, showing that narcissistic women  
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3 entrepreneurs engage less in risk-taking activities, such as R&D expenditure, and they also  
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5 patent their idea more than narcissistic men entrepreneurs.  
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#### 8 *4.1. Theoretical implications*

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10 The present study contributes and expands the existing literature related to the entrepreneur  
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12 personality and entrepreneurship in general, and strategic and organizational choices.  
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15 Regarding the entrepreneur personality literature, we investigated whether entrepreneurs behave  
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17 differently by applying a gendered lens to entrepreneurs' narcissism. So far, research on  
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19 entrepreneur narcissism has focused almost exclusively on men, given that most entrepreneurs  
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21 are men. Other works focus on how narcissistic behaviors are perceived differently when  
22  
23 exhibited by women than men, showing that narcissism may have different manifestations  
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25 among entrepreneurs due to the social construction of gender norms and the unequal treatment  
26  
27 received by genders (Ingersoll et al., 2019). For example, women entrepreneurs who display  
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29 narcissistic personalities are perceived by their men employees as less effective leaders than  
30  
31 equally narcissistic men entrepreneurs (De Hoogh et al., 2015). This suggests that narcissistic  
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33 women entrepreneurs may face biases not experienced by narcissistic men entrepreneurs.  
34  
35 Finally, previous works focus mainly on middle management roles or women entrepreneurs of  
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37 SMEs. Thus, our work expands this research stream, underlining that the manifestation of  
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39 narcissism varies according to gender, and this difference is significant also for start-up  
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41 entrepreneurs.  
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45 Regarding the entrepreneurship literature, we answer the Cragun et colleagues' (2020) call for  
46  
47 future studies about the investigation of other individual attributes that could influence  
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49 narcissism manifestation. Previous studies provide some initial evidence that gender differences  
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51 in narcissism might impact the choices to become entrepreneurs (Grijalva et al., 2015, Harms et  
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53 al., 2020). Investigating the combination between gender and personality, we underlined the  
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55 differences related to the way entrepreneurs create and manage their start-ups. In detail, we  
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3 underlined the difficulties that women entrepreneurs should overcome in order to achieve the  
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5 same results as men entrepreneurs.  
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8 Finally, this study contributes to the strategic and organizational choices literature, examining  
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10 the differences between entrepreneurs' personality traits and gender and entrepreneurs' decision-  
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12 making. Again, we answered the Cragun et colleagues' (2020) call for future studies about the  
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14 impact of narcissism on organizational choices and outcomes. We contribute to this field,  
15  
16 showing that narcissistic women entrepreneurs undertake different strategic choices than men  
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18 entrepreneurs. In particular, our study underlined the different ways women and men  
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20 entrepreneurs face the strategic choices to protecting their ideas through patents, invest in R&D,  
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22 and being surrounded by a specialized team.  
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#### 29 *4.2. Practical implications*

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31 On a practical level, this paper has important implications for governments and policymakers,  
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33 especially in times of global crisis. Governments and policymakers should consider the gender  
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35 differences in entrepreneurship, taking care of women who want to become entrepreneurs.  
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37 According to the ISTAT (Italian National Institute of Statistics) data (2021), out of 101 thousand  
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39 new unemployed, 99 thousand are women, showing that the COVID-19 pandemic has widened  
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41 the problem of gender inequality. This means that after the COVID-19 pandemic, women will  
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43 likely decide to create their own business to be newly placed on the labor market. Thus, in order  
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45 to push women in choice the entrepreneurial career and protect them from endogenous shock,  
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47 governments and policymakers should create special funds for them, encourage networking,  
48  
49 offer business and financial support for industries being of particular relevance for women (e.g.,  
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51 internet or local tourism business) (Goldstein et al., 2019), and give them the opportunity to be  
52  
53 supported in managing non-work commitments. Indirectly, this could have an important impact  
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55 on national economies because women prove to be more capable than men in managing and  
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3 changing their businesses to survive because they are always forced to rely on their own  
4 resources (given the difficulties in obtaining loans) (Pines et al., 2010).  
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#### 10 **4.3. Originality, limitations, and future research**

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13 The originality of the study is based on a sample composed of real data on entrepreneurs.  
14 Unobtrusive measures of narcissism, such as analysis of CEO photographs and firms' reports,  
15 were not employed. The present study, on the other hand, shows some limitations that suggest  
16 paths for further research. The present results are based on an Italian sample, and in light of this,  
17 future studies may consider the impact of different cultures on the level of entrepreneur  
18 narcissism.  
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### 30 **5. Conclusions**

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33 In sum, the paper explored the impact of entrepreneurs' personality traits and gender on their  
34 decision-making (i.e., organizational choices). The focus was on narcissism as a controversial  
35 personality trait strictly related to gender differences. Results showed that women  
36 entrepreneurs are less narcissistic than men. Thus, there are differences in the management  
37 and organizational choices of narcissistic women entrepreneurs compared to their men  
38 counterparts. In detail, the choice of having a qualified team, the amount of R&D expenditure  
39 invested in the start-ups, and the choice to patent are moderated by the gender of the  
40 entrepreneurs.  
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<i>Start-ups' characteristics</i>			<i>Entrepreneurs' characteristics</i>		
	<i>N</i>	<i>%</i>		<i>N</i>	<i>%</i>
Industry			Gender		
Manufacturing	25	12.08	Male	113	54.59
Construction	6	2.90	Female	94	45.41
Information and communication	85	41.06	<i>Tot</i>	207	100.00
Other Services	91	43.96			
<i>Tot</i>	207	100.00	Age		
Technology Intensity			≤ 29 years old	15	7.25
Low-Tech	28	13.53	30-39 years old	83	40.10
Medium-Low-Tech	42	20.29	40-49 years old	72	34.78
Medium-High-Tech	98	47.34	50-59 years old	30	14.49
High-Tech	39	18.84	≥ 60 years old	7	3.38
<i>Tot</i>	207	100.00	<i>Tot</i>	207	100.00
Geographical area			Education		
North West	101	48.79	High school	29	14.01
North East	27	13.04	Bachelor's degree	16	7.73
Centre	38	18.36	Master's degree	125	60.39
South and Islands	41	19.81	PhD	37	17.87
<i>Tot</i>	207	100.00	<i>Tot</i>	207	100.00
Initial capital					
≤ € 5,000	36	17.39			
€ 5,000 - € 10,000	88	42.51			
€ 10,000 - € 50,000	57	27.54			
> € 50,000	26	12.56			
<i>Tot</i>	207	100.00			

Table 1. Characteristics of the surveyed sample

Variable	Full sample (n=207)				Female sample (n=94)				Male sample (n=113)			
	Mean	SD	Min	Max	Mean	SD	Min	Max	Mean	SD	Min	Max
1. Start-up R&D expenditure <sup>a</sup>	0.599	0.491	0	1	0.649	0.480	0	1	0.558	0.499	0	1
2. Start-up qualified team <sup>a</sup>	0.401	0.491	0	1	0.394	0.491	0	1	0.407	0.493	0	1
3. Start-up patent ownership <sup>a</sup>	0.188	0.392	0	1	0.149	0.358	0	1	0.221	0.417	0	1
4. Entrepreneur narcissism	0.015	0.891	-1.985	1.745	-0.389	0.923	-1.985	1.630	0.350	0.709	-1.816	1.745
5. Entrepreneur gender <sup>b</sup>	0.549	0.499	0	1	-	-	-	-	-	-	-	-
6. Entrepreneur education	2.821	0.888	1	4	2.830	0.812	1	4	2.814	0.950	1	4
7. Entrepreneur age	2.667	0.930	1	5	2.553	0.911	1	5	2.761	0.938	1	5
8. Start-up age	6.324	2.205	1	9	4.415	1.931	1	8	7.912	0.492	6	9
9. Start-up initial capital	2.353	0.912	1	4	2.266	0.870	1	4	2.425	0.943	1	4
10. Industry	10.275	3.469	3	19	10.628	3.027	3	19	9.982	3.787	3	14
11. Technology intensity	2.715	0.925	1	4	2.660	0.911	1	4	2.761	0.938	1	4
12. Geographical area	2.092	1.209	1	4	2.021	1.209	1	4	2.150	1.212	1	4

Notes: <sup>a</sup> 1=Yes, 0=No; <sup>b</sup> 1=Male, 0=Female;

Table 2. Descriptive statistics

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Start-up R&D expenditure	1											
2. Start-up qualified team	-0.678**	1										
3. Start-up patent ownership	-0.186**	-0.067	1									
4. Entrepreneur narcissism	-0.117	0.061	0.115	1								
5. Entrepreneur gender	-0.093	0.014	0.092	0.402**	1							
6. Entrepreneur education	-0.005	0.036	-0.137**	-0.011	0.023	1						
7. Entrepreneur age	-0.013	0.037	0.078	0.068	0.107	-0.077	1					
8. Start-up age	-0.005	-0.060	0.097	0.450**	0.835**	0.048	0.073	1				
9. Start-up initial capital	-0.040	0.041	0.149**	-0.038	0.085	-0.039	0.044	0.082	1			
10. Industry	0.065	-0.016	-0.056	0.032	0.015	0.221**	-0.037	0.054	-0.040	1		
11. Technology intensity	-0.007	-0.006	-0.107	0.069	0.042	0.197**	0.007	0.044	0.008	0.061	1	
12. Geographical area	-0.112	0.039	-0.055	0.015	0.069	0.178**	-0.036	0.156**	-0.112	0.140**	0.085	1

Table 3. Correlations (\*\*= $p < 0.05$ )

	Full sample (n=207)	Female sample (n=94)	Male sample (n=113)
<b>Panel A. Dependent variable: Start-up R&amp;D expenditure</b>			
<i>Independent variables and moderation</i>			
Entrepreneur narcissism	-0.514*	-0.564**	-0.304
Gender	-3.015**		
Gender × Entrepreneur narcissism	0.249		
<i>Control variables</i>			
Entrepreneur education	-0.028	-0.617*	0.229
Entrepreneur age	0.001	0.282	-0.146
Start-up age	0.324**	0.279**	1.094**
Start-up initial capital	-0.163	-0.280	-0.159
Industry	0.061	0.105	0.035
Technology intensity	-0.249	-0.275	0.179
Gender x Technology intensity	0.490		
Geographical area	-0.384*	-0.309	-0.237
Gender x Geographical area	0.238		
Constant	0.417	1.194	-8.495
<b>Panel B. Dependent variable: Start-up qualified team</b>			
<i>Independent variables and moderation</i>			
Entrepreneur narcissism	0.616**	0.693**	-0.081
Gender	1.436		
Gender × Entrepreneur narcissism	-0.714*		
<i>Control variables</i>			
Entrepreneur education	0.165	0.909**	-0.153
Entrepreneur age	0.118	0.043	0.156
Start-up age	-0.287**	-0.267*	-0.884*
Start-up initial capital	0.145	0.286	0.134
Industry	-0.022	-0.034	-0.010
Technology intensity	0.138	0.159	-0.028
Gender x Technology intensity	-0.225		
Geographical area	0.119	0.013	0.198
Gender x Geographical area	-0.005		
Constant	0.433	-2.502	6.065*
<b>Panel C. Dependent variable: Start-up patent ownership</b>			
<i>Independent variables and moderation</i>			
Entrepreneur narcissism	0.522	0.660*	0.230
Gender	0.700		
Gender × Entrepreneur narcissism	-0.318		
<i>Control variables</i>			
Entrepreneur education	-0.175	0.505	-0.424*
Entrepreneur age	0.162	0.171	0.243
Start-up age	-0.022	-0.082	0.388
Start-up initial capital	0.393*	0.667*	0.338
Industry	-0.021	-0.058	-0.000
Technology intensity	0.111	-0.024	-0.412
Gender x Technology intensity	-0.346		
Geographical area	-0.259	-0.332	-0.007
Gender x Geographical area	0.277		
Constant	-1.427	-3.455	-3.692

Table 4. Regressions results (\*= $p < 0.1$ ; \*\*= $p < 0.05$ ; \*\*\*= $p < 0.01$ )