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What's so entrepreneurial about intrapreneurs?

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Abstract This paper discusses the determinants of becoming an intrapreneur. Individuals maximise their utility while deciding among three occupations: independent entrepreneurship, paid employment and intrapreneurship. I show that intrapreneurs resemble employees rather than entrepreneurs. Specifically, comparing the decision-making of intrapreneurs to that of entrepreneurs, the former are significantly more risk averse, expect lower but less uncertain reward and are broadly endowed with a poorer set of entrepreneurial abilities; despite having higher levels of human capital they fail to recognise business opportunities and have lower confidence in their entrepreneurial skills. A distinction within the category of intrapreneurship, based on the level of engagement and therefore the level of personal risks they bear, adds to our understanding of intrapreneurship. Engaged intrapreneurs, i.e., intrapreneurs that expect to acquire an ownership stake in the business, unlike the rest of intrapreneurs, share the attributes usually assumed to characterise entrepreneurs.

Keywords Intrapreneurship · Entrepreneurship · Occupational choice theory · GEM

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1 Introduction

"Entrepreneurship in existing organisations" has been a widely used definition for intrapreneurship (Antoncic and Hisrich 2003). Despite the existence of terminology differences in the literature (Sharma and Chrisman 1999; Christensen 2004), the recognition of intrapreneurial activities has widened the notion of entrepreneurship by incorporating entrepreneurial activities undertaken within established organisations to the usual view of entrepreneurship as new independent business creation.

This article investigates the determinants of becoming an intrapreneur. An important stream in entrepreneurship research has been interested in understanding the transition into entrepreneurship, as an alternative to paid employment offered in the labour market (Stevenson and Jarillo 1990); nevertheless, there has been little discussion about its consistency to explain individuals' intrapreneurial action to date. Recent attempts to understand the nature of intrapreneurship focus on factors that favour intrapreneurship over independent entrepreneurship, as a response to the substantial body of the literature that regards the former a sub-field of entrepreneurship (Matthews et al. 2001; Parker 2011; Antoncic and Hisrich 2003). For instance, Parker (2011) shows evidence on the differences between

these groups and asserts the role of general human capital in promoting nascent entrepreneurship over nascent intrapreneurship. Against the conventional traits attributed to entrepreneurs, nascent intrapreneurs seem to lack intrinsic motivation and fail to recognise promising business opportunities in the market.

In this paper, I extend this line of work by introducing paid employees in the analysis and asking whether intrapreneurs are actually similar to independent entrepreneurs or rather resemble a profile of employees. Here, entrepreneurship is used as a synonym for autonomous venture set up whereas intrapreneurship refers to the generation and exploitation of new business ideas by existing organisations, without assuming intrapreneurship a subcategory of entrepreneurship per se. I expect to find strong similarities between employees and intrapreneurs as they both work within the boundaries of a firm, yet I test their resemblance to entrepreneurs as they are, almost by definition, engaged in entrepreneurial behaviour and actions.

Following the utility maximisation theory, I explore why individuals decide to be either self-employed, paid employees or intrapreneurs. Modern economic theories of entrepreneurship target occupational choice models subject to heterogeneous specific personal characteristics, usually risk aversion or managerial talent (Parker 2004). Douglas and Shepherd (2000, 2002) argue that people's attitudes toward risk, independence and expected income explain their motivation to become self-employed. Based upon this framework, Monsen et al. (2010) analyse the decision making of potential intrapreneurs by including risk taking and work effort behaviours as moderating factors in a financial utility maximisation model. I merge these views and build a joint occupational choice model where the decision making of individuals is driven by a combination of their expected financial reward, entrepreneurial ability and attitudes towards risk.

The article makes two main contributions to the literature. First, I introduce a novel distinction within the category of intrapreneurship. I consider the timing and the degree of engagement in intrapreneurial activities within the notion of intrapreneurship as a continuous process that implies further commitment and risk taking for the intrapreneur as the project develops (Antoncic and Hisrich 2003). This is particularly true for those employees that initially get involved in seeking new business opportunities for their employer and end up creating and owning part of the new venture. So these "engaged intrapreneurs", as I will refer to them, appear to be on the frontier between paid and self-employment. Some empirical facts demonstrate that most independent entrepreneurs develop ideas discovered in their previous work place, for instance, Bhide (1994) states that 71% of fast growing founders "replicated or modified an idea encountered through previous employment" (p. 151). Non-compete covenants and intellectual property rights have been advanced as arguments to explain why internal development of ideas occur even in situations when alternative independent start-ups were optimal (Aghion and Tirole 1994; Hvide 2009; Anton and Yao 1995). However, since both entrepreneurial processes differ in the associated implied risk and required managerial ability, I expect individual level characteristics to also condition the potential transition of the individual employee into self-employment. I, thus, include a fourth occupational category, namely "engaged intrapreneurs", which serves to test whether these individuals differ from the rest of intrapreneurs, who have decided to remain within the organisation and develop the business ideas for their employers, and the extent to which they resemble independent entrepreneurs.

Second, the paper enriches the literature, mainly made up of theoretical studies to date, by presenting an empirical evidence of differing utilities across a broader set of occupational choices. So far, little empirical work exists on the determinants of intrapreneurship at the individual level of analysis, due to scarce data to make it feasible, and as far as I know there is no study undertaking a comparative analysis between these occupational categories together. The present study addresses this gap by using Global Entrepreneurship Monitor (GEM) data from Spain.

In what follows, Sect. 2 presents the theoretical background supporting the hypotheses of income variability and expected market reward on the context of heterogeneous aversion to risk and I then consider the differing entrepreneurial ability among individuals in the four occupational categories. In Sect. 3, I discuss the empirical analysis and results from

both descriptive and multinomial logit regressions. Section 4 concludes by summarising the main findings and limitations of the present study and makes suggestions for future research.

2 The choice of becoming an intrapreneur. Theoretical background

The conceptual framework adopted here is the utility maximisation, which will represent the preferences of individuals over three main dimensions: financial reward, degree of risk aversion and entrepreneurial ability. This allows going beyond the simpler financial maximising framework, as it captures further working conditions that generate satisfaction or dissatisfaction and therefore, explain individuals' career choice. Of course, this approach is still unable to consider other socio-psychological dimensions, such as group collectivism, that could influence the decision of quitting a firm to become an entrepreneur, yet provides a simple and tractable framework to test empirically the predictions in the next section.

2.1 Risk aversion and expected earnings

Heterogeneity of an individuals' aversion to risk and risk-adjusted labour market rewards was first proposed by Knight (1921). Modern approaches in this area are influenced by the later contribution of Kihlstrom and Laffont (1979), which suggests that more risk-averse individuals become employees and more risk-tolerant agents entrepreneurs. Empirical studies have shown, however, contradictory results regarding the influence of risk attitudes on entrepreneurial activity (Xu and Ruef 2004; Blanchflower and Oswald 1998; Parker 2009). These have been many times explained by the difficulties in measuring this aversion precisely and indeed separately from other psychological characteristics such as optimism and confidence (Caliendo et al. 2009; Weber and Milliman 1997; Arenius and Minniti 2005). I conjecture here the most intuitive notion that risk adversity influences negatively entrepreneurial activity, as supported by many theoretical studies (Kihlstrom and Laffont 1979; Praag and Cramer 2001; Landier 2004; Douglas and Shepherd 2000).

Risk-taking behaviour has also been considered an aspect of intrapreneurship (Antoncic and Hisrich 2003; Lumpkin and Dess 1996; Monsen et al. 2010; Antoncic 2003), but contrary to autonomous entrepreneurship, risk is shared between the firm and the intrapreneur. The established company provides the intrapreneur support of a different kind. For instance, it may assume financial risk and offer operational and administrative assistance if necessary (Luchsinger and Bagby 1987). In case of failure, the intrapreneur may be reallocated to another position within the firm, while the entrepreneur suffers the cost of losing his job and having to search for a new occupation. These contractual terms diminish the personal risks that intrapreneurs are required to assume, which primarily involve reputational and career advancement risks rather than financial risks, and lead them to undertake risks at the level of the firm that would not be taken individually (Lumpkin and Dess 1996; Antoncic 2003).

Similarly, the choice to commit further in the corporate venture by acquiring an ownership stake may be determined by the disutility that intrapreneurs derive from additional risk bearing, as it involves greater financial uncertainty and may also imply a risk of losing their employment (Monsen et al. 2010; Douglas and Shepherd 2000, 2002). This results in the least risk-averse intrapreneurs being more likely to quit the firm to manage the corporate spin-out. In comparison to entrepreneurs, however, these engaged intrapreneurs do not bear the total risk of profit/loss along the entire process of the project development as do entrepreneurs, especially throughout the process of searching for opportunities and liaising with their employer. Risk-taking behaviour, therefore, still seems to separate engaged intrapreneurs from entrepreneurs and confirms their lack of inherent risk-taking behaviour necessary for autonomous start-up.

Hypothesis 1 Individuals showing greater risk aversion are less likely to engage in entrepreneurial and more autonomous occupations such as independent entrepreneurship and engaged intrapreneurship.

This theoretical approach makes the relationship between risk-taking behaviour and market rewards central to understand entrepreneurial entry. Given that individuals self-select in different occupational categories based on their degree of risk aversion, this could also explain earning differentials across categories, which are determined in equilibrium by the supply of each occupational choice. Thus, a risk premium, also known as entrepreneurial premium, is

needed for risk-averse individuals to engage in entrepreneurial projects (Petrakis 2004; Kihlstrom and Laffont 1979). In other words, individuals confront the trade-off between higher returns with greater levels of risk and safer but lower earnings, and the market risk premium outweighs the disutility of greater variability for more risk-tolerant individuals. As noted in Hypothesis 1, differences in assumed risk levels consequently imply income differences across the occupations when agents maximise their utility by adjusting income variability to their risk attitude.

Hypothesis 2 Intrapreneurs and engaged intrapreneurs are more likely to demand lower remuneration than entrepreneurs but higher than employees.

2.2 Entrepreneurial ability

There is evidence that entrepreneurial ability also enters into the decision to become an entrepreneur (Gimeno et al. 1997; Lucas 1978; Murphy et al. 1991). Lucas's (1978) seminal paper motivated later models in occupational choice on the basis of a continuous distribution of entrepreneurial talent among the workforce. He offered an explanatory model for the division between employees and managers (entrepreneurs), where less talented individuals that share common skills are employees, and above a certain ability threshold level, some people become entrepreneurs. Skill, according to Lucas (1978), is defined as managerial talent and understood to be an innate and exogenous virtue of individuals.

In broad terms, entrepreneurial ability comprises human capital aspects required to perform tasks that entrepreneurs undertake but also the ability to recognise emerging business opportunities in the market. Human capital (Becker 1964) is usually measured by formal educational attainment and job experience valuable in this context to start a business. Empirical studies assessing the linear impact of additional years of education on entrepreneurial entry, however, have been conflicting (van der Sluis et al. 2008) and find greatest support for an inverse U-shape relation between entrepreneurship and educational attainment as a proxy of ability (Poschke 2008; Blanchflower 2000).

Lazear (2005), however, discusses how the range of skills, instead of the depth of the knowledge or higher levels of education, relates to the likelihood of an individual to engage in entrepreneurial activities. He argues that entrepreneurship requires a wide range of knowledge and skills to perform the different roles involved in setting up a new venture, so individuals not simply with higher educational attainment but with more balanced skills are more likely to become entrepreneurs. This leads potential entrepreneurs to invest in a more balanced general human capital through their formal education and diverse professional experience. This "jack-of-all-trades" view of entrepreneurs does somehow contradict the notion of innovative entrepreneurs, who are believed to have specific and deep knowledge on a particular technology or industry (Marvel and Lumpkin 2007). Nevertheless, we could expect specialists or individuals without such balanced skills, or who possess lower managerial skills, to become intrapreneurs or engaged intrapreneurs since the organisation will offer them support on those skills for which they have not been trained. Therefore, they can better perform in the task of exploiting the business opportunity by concentrating on their specialist skill sets.

But it is not just objective skills but also the self-assessment of entrepreneurial abilities that is correlated with entrepreneurship (Arenius and Minniti 2005). Due to the predominance of overly optimistic attitudes among entrepreneurs, skill perceptions are also likely to be biased, and as a result, entrepreneurs may too often over-estimate their chances to succeed and to pursue profitable opportunities (Camerer and Lovallo 1999). This could explain some of the contradictory empirical findings on the relationship between human capital measures and entrepreneurial activity and could actually determine the tipping point between paid and self-employment. Furthermore, if an intrapreneur perceives his entrepreneurial talent to be high, he may demand an ownership stake in the business and become an engaged intrapreneur. In this case, a spin-off rather than a new business unit within the firm is more likely to occur.

Hypothesis 3a Entrepreneurship and engaged intrapreneurship are positively associated with a more balanced pool of skills and self-perception of entrepreneurial skills.

On the basis of the Kirznerian view of the entrepreneur as an opportunity seeker, individuals need to be alert to recognise business opportunities in the market (Kirzner 1999, 1997). As pointed out by Parker (2011), intrapreneurs might act solely in response to a request by their employer, meaning that they do not perceive any real opportunity by themselves because they lack this behavioural trait. In addition, both engaged intrapreneurs and intrapreneurs may have a narrower scope of market opportunities, constrained to business ideas that relate to the core competences of the parent firm, whereas independent entrepreneurs can operate and search for ideas in a wider set of industries and markets.

Measurement of this alertness appears to be hard to test empirically, as I seek to control for the background noise of the subjective nature of individual perceptions. However, given, as mentioned earlier, that entrepreneurs are characterised by optimistic attitudes, entrepreneurs may also over-estimate existing business opportunities.

Hypthesis 3b Entrepreneurs recognise more business opportunities than engaged intrapreneurs, intrapreneurs and employees.

3 Empirical analysis

3.1 Sample

This section tests empirically the above hypotheses using the Spanish Global Entrepreneurship Monitor (GEM) data. This research programme assesses entrepreneurial activity at national and regional level on an annual basis (Reynolds 2005) and collects data through telephone surveys of a randomly selected adult sample on their involvement and attitudes toward entrepreneurship. Apart from the core set of questions asked each year, additional questions are included in the survey every year to cover different areas within entrepreneurship research. Data used in this paper are taken from the Spanish GEM 2008 survey which addressed the special topic of intrapreneurial activity and allowed me to differentiate for the first time intrapreneurs from independent entrepreneurs and the rest of employees, as well as providing additional information about intrapreneurial activities.

Based on the screening questions and business ownership information in GEM I define each occupational category as follows. Intrapreneurs refer to employees who reported to "have been involved in the development of new business activities for their employer, such as establishing a new outlet or subsidiary, or launching new products and new product-market combinations for an existing organisation during the last 2 years".[1] Thus, I initially consider a broad definition of intrapreneurship, without assuming business ownership a necessary requirement to classify employees into intrapreneurs. But as discussed above, as business projects develop, some of them will remain under the ownership and control of the established organisation, while other projects will operate as free-standing firms run by venture managers that acquire an ownership stake in the business. For this reason, and following the usual definition in GEM (Reynolds 2005), I do apply the ownership criteria when defining engaged intrapreneurs and entrepreneurs. In both cases, individuals are trying to start a new business that is up to 42 months old and expect to take part or full ownership in the business. In other words, they meet the criteria to be part of the definition of nascent entrepreneurial activity calculated each year by the GEM Global project. However, engaged intrapreneurs perform the activities for their employer, as part of their usual work, while entrepreneurs indicate that they are trying to start a new business independently of their work. Previous empirical studies addressing differences across the two entrepreneurial categories have also analysed differences between nascent intrapreneurs and nascent entrepreneurs (Matthews et al. 2001; Parker 2011), since it allows the comparing of both categories at the development stage and captures not just self-employment but new venture founders.

Ideally, I would track intrapreneurs throughout the development of the project in order to assess which finally leave the firm to manage the business independently, but unfortunately the GEM methodology

[1] Specifically, 70% of the intrapreneurs said to participate in projects in an advanced stage of development, so that their tasks included activities such as promoting the idea, preparing a business plan, developing marketing activities and searching for funding sources, whereas the rest of intrapreneurs were still developing ideas and searching for information to transfer them to their directors.

consists of annual cross-sectional samples. It does provide, however, information to consider an alternative approach to understand part of the dynamics between paid and self-employment through the introduction of a new category (engaged intrapreneurs) defined by a greater degree of engagement through business ownership participation.

Screening questions to identify intrapreneurs were carried out on employees that were neither owner-managers of the firm they worked for, nor classified as entrepreneurs in the initial screening questions. Therefore, the four occupational groups defined above are discrete and do not overlap in the sample. Thus, from the total dataset, 113 individuals were identified as intrapreneurs, 615 were classified as independent entrepreneurs, 1,887 employees[2] and 339 as engaged intrapreneurs.

3.2 Descriptive analysis

With regard to the variables used in the analysis, theoretical predictions suggest that a range of factors are related to the decision-making process of an individual to become an entrepreneur (for a more detailed description of the variables, see the Appendix).

Specifically, I include the dummy variable *Fear of Failure* as a proxy for risk aversion, which takes a unit value if the respondent agrees that the fear of failure would prevent him from starting a business and as the theory predicts, I expect higher income levels (*lnIncome*) to be correlated to occupations that involve a greater uncertainty in earnings. I acknowledge that this measure of risk aversion, as some of other attitudinal variables presented below may present a cognitive dissonance problem (Bertrand and Mullainathan 2001), in other words, individuals may be tempted to reveal attitudes that are consistent with past actions. Hence, if this was fully true, I would expect entrepreneurs and engaged intrapreneurs reporting negative answers to this question. However, as in other studies across countries and years (Wagner 2007), this interpretation is not supported by the data here. Other studies have attempted to measure risk aversion through individuals' risk preferences over lotteries (Praag and Cramer 2001; Xu and Ruef 2004) or psychometric tests (Ekelund et al. 2005), but these are not available in this dataset. Yet, the analyses between entrepreneurs and engaged intrapreneurs on one side, and intrapreneurs and employees on the other side, would be free from this potential bias and are still of the interest in this paper.

The group of *Entrepreneurial ability* variables contain a wide range of dummy variables that permit exploring objective general human capital indicators, such as whether the respondent has received training on business creation or not (*Training business creation*) and highest educational attainment (*Graduate studies*), as well as self-reliance on personal skills for business creation (*Perceived start-up skills*). Distinguishing between specialised and balanced skills to test Hypothesis 3a would require information about the roles that would-be entrepreneurs performed in their career history or the courses that constituted their educational curriculum (Silva 2007; Lazear 2005; Wagner 2007), which are not available in this dataset. Alternatively, I use *Training in business creation* as a proxy for the generalised skills, so assume that courses on business creation contain modules from a variety of fields, necessary to build up wider entrepreneurial skills. Similarly, *Opportunity recognition* represents personal beliefs about the existence of good business opportunities in the market in the 6 months ahead. Finally, a set of demographic variables are introduced for control purposes (i.e., age and gender).

Table 1 provides descriptive statistics for the four occupational categories in the sample and shows first evidence of the similarities and differences across the groups. The last column for each occupation, i.e., entrepreneurs, employees and engaged intrapreneurs, comprise differences in means between intrapreneurs and corresponding category. Levene's test for the equality of variances suggested inequality in variances, with just a few exceptions at 5% significance level, so independent samples *t* tests were performed to compare means.

[2] This extension about intrapreneurship of the Spanish GEM survey in 2008 was carried out on a subsample of 2,000 employees, out of the total 30,879 Spanish interviews, and enables discrimination of intrapreneurs from employees solely in this smaller sample. For empirical analysis, this reduces the initial sample of employees from 17,784 to 1,887 observations, since I am unable to separate intrapreneurs from general employees in the rest of the sample. The excluded subsample, therefore, consists of the pooled sample of wage earners, retired, students, inactive and owner-managers of established businesses.

Table 1 Descriptive statistics

	Intrapreneur			Entrepreneur				Employee				Engaged intrapreneurs			
	n	Mean	SE	*n*	Mean	SE	Diff	*n*	Mean	SE	Diff	*n*	Mean	SE	Diff
lnIncome	77	10.00	0.08	560	10.26	0.02	0.26***	1299	9.92	0.02	−0.08	299	10.26	0.03	0.26***
Fear of failure	111	0.57	0.05	601	0.31	0.02	−0.26***	1830	0.52	0.01	−0.05	333	0.34	0.03	−0.23***
Training business creation	113	0.18	0.04	612	0.21	0.02	0.03	1881	0.14	0.01	−0.04	337	0.25	0.02	0.08
Graduate	113	0.34	0.04	615	0.29	0.02	−0.04	1887	0.36	0.01	0.02	339	0.37	0.03	0.03
Perceived start up skills	111	0.50	0.05	609	0.89	0.01	0.38***	1774	0.48	0.01	−0.02	333	0.90	0.02	0.4***
Opportunity recognition	87	0.08	0.03	531	0.50	0.02	0.42***	1514	0.17	0.01	0.09**	285	0.43	0.03	0.35***
Control variables															
Male	113	0.46	0.05	615	0.54	0.02	0.08	1887	0.45	0.01	−0.01	339	0.60	0.03	0.14***
Age	113	42.39	0.98	615	40.69	0.46	−1.70	1887	41.08	0.25	−1.31	339	41.15	0.62	−1.24
Know entrepreneur	110	0.35	0.05	608	0.58	0.02	0.22***	1883	0.37	0.01	0.01	336	0.66	0.03	0.30***
Household size	113	3.15	0.09	615	0.82	0.02	0.09	1845	3.24	0.03	0.09	339	3.26	0.07	0.11
Urban	113	0.84	0.03	599	3.23	0.05	−0.02	1887	0.86	0.01	0.02	339	0.85	0.02	0.01

Differences in the number of observations (*n*) within each category respond to missing responses

Asterisks indicate *t* test for equality of means. Differences in mean at ***1%, **5% and *10% levels. Equal variances are not assumed and tested by Levene's test for equality of means.

As expected, intrapreneurs are significantly more risk averse than entrepreneurs, earn lower incomes, perceive less business opportunities in the short term and do not consider that they have enough skills to succeed in setting up a business, results that show evidence for Hypotheses 1, 2 and 3b. These results are almost identical to those I obtain when comparing intrapreneurs to engaged intrapreneurs and corroborates the idea that more entrepreneurial and riskier occupations require specific individual characteristics to succeed; hence, not all intrapreneurs will be able and willing to deal with greater responsibility in the venture. However, employees, somewhat counter-intuitively, seem to observe more business opportunities than intrapreneurs, a result that could be interpreted by the weak motivational factors and pessimistic beliefs about the quality of the project by the latter.

These tests do not consider any interaction among the variables, but they do nevertheless provide insight into the differences across the four occupational groups. The most striking observation to emerge from this is that the two categories of intrapreneurs appear clearly distinguished, engaged intrapreneurs bearing a greater resemblance to autonomous entrepreneurs and less committed intrapreneurs more likely to resemble the profile of employees.

3.3 Regression specification

In this section, I apply the multinomial logit model to predict the likelihood of an individual choosing an occupational category given their entrepreneurial ability and attitudes.[3] I expect individuals to choose their occupation by maximising their expected utility defined as:

$$\begin{aligned} U_i &= \alpha + \beta' X_i \\ &= \alpha + \beta_0 \text{ Finantial Utility}_i + \beta_1 \text{ Risk Aversion}_i \\ &\quad + \beta_2 \text{ Entrepreneurial Ability}_i + \beta_3' Z_i \end{aligned}$$

and I estimate:

$$\begin{aligned} U_i = \alpha &+ \beta_0 \ln \text{Income}_i + \beta_1 \text{Fear of failure}_i \\ &+ \beta_2 \text{Training business creation}_i + \beta_3 \text{Graduate}_i \\ &+ \beta_4 \text{Perceived startup skills}_i \\ &+ \beta_5 \text{Opportunity recognition}_i + \beta_6' Z_i + \varepsilon_i \end{aligned}$$

where the first variable measures the household income in logarithms, followed by a risk aversion proxy and variables determining the entrepreneurial ability (human capital and market opportunity

[3] Missing values for some of these variables will limit the size of the sample in the following regression analyses.

perceptions), and finally, a set of demographic control variables denoted by Z. Thus, and assuming i.i.d., extreme value distributed error terms, I estimate the multinomial logistic model as follows (Greene 1992):

$$\Pr(y = k) = \frac{\exp(\alpha + \beta' X_{ij})}{\sum_{j=1}^{4} \exp(\alpha + \beta' X_{ij})} \quad k = 1, 2, 3, 4.$$

A categorical dependent variable is defined so that it takes on four levels (1 for intrapreneurs, 2 for entrepreneurs, 3 for employees and 4 for engaged intrapreneurs) and weighted data are used to correct for unbalanced groups and missing responses.[4] One caveat of this method is that the preference of selecting one occupational over another is independent of the existence of any other alternative, that is, the model assumes the Irrelevance of Independent Alternatives (IIA).

4 Results

The results of the multinomial logit regression are reported in the Table 2 for each pair of comparison groups in terms of the relative risk ratios or exponentiated coefficients. Again, intrapreneurs are compared to each alternative occupation that is set as the base category in the columns (1)–(3). I will comment only on the results that help us understand the nature of the intrapreneurial process, and omit other interpretations which may perhaps be interesting in another context, for example, the comparison between entrepreneurs and employees.

Column (1) shows that a higher fear of failure significantly increases the probability of becoming an intrapreneur over an independent entrepreneur holding all else constant and reaffirms the Hypothesis 1 that intrapreneurs are more risk averse than entrepreneurs. However, compared to employees and engaged entrepreneurs, whilst the ratio is greater than unity, which highlights their greater risk aversion, it is not statistically significant.

Table 2 Multinomial logit analysis-intrapreneurs, entrepreneurs, employees, engaged intrapreneurs

Independent variables	(1) Intrapreneur vs. entrepreneur[a]	(2) Intrapreneur vs. employee[b]	(3) Intrapreneur vs. engaged intrapreneur[c]
lnIncome	0.60** (0.13)	1.31 (0.25)	0.68* (0.15)
Fear of failure	1.79* (0.55)	1.16 (0.33)	1.55 (0.50)
Training business creation	2.34** (0.90)	2.03** (0.73)	2.02* (0.80)
Graduate	1.03 (0.37)	0.60 (0.20)	0.75 (0.27)
Perceived start-up skills	0.11*** (0.04)	1.03 (0.30)	0.11*** (0.04)
Opportunity recognition	0.08*** (0.04)	0.37* (0.20)	0.12*** (0.07)
Control variables			
Male	1.35 (0.41)	1.27 (0.36)	0.99 (0.32)
Age	1.36** (0.15)	1.18 (0.12)	1.30** (0.15)
Age^2	1.00** (0.00)	1.00 (0.00)	1.00** (0.00)
Know entrepreneur	1.24 (0.38)	1.13 (0.32)	0.88 (0.28)
$n = 1{,}760$			
$\chi^2 = 334.98$			
Prob $> \chi^2 = 0.000$			
Pseudo $R^2 = 0.1061$			

Asterisks indicate significance level where *** $p < 0.01$, ** $p < 0.5$, * $p < 0.1$. Relative risk ratios from multinomial logistic regression. Robust standard errors are reported in parentheses

[a] Entrepreneur is the base outcome

[b] Employee is the base outcome

[c] Engaged Intrapreneur is the base outcome

The results on the income variable (*lnIncome)* are consistent with Hypothesis 2, indicating that higher expected income is associated with riskier occupations, that is, higher income levels predict entrepreneurial or engaged intrapreneurial options over the intrapreneurial career and confirms that financial reward is necessary for individuals to assume greater personal risks. Previous studies on corporate venturing reward schemes have also found that, for instance, the likelihood of individuals participating in intrapreneurial activities increases when higher profit-sharing terms are introduced (Monsen et al. 2010) and that variable bonuses based on return on investment are the preferred compensation schemes among venture managers (Block and Ornati 1987).

[4] Due to the methodology to identify intrapreneurs employed in GEM, as explained in footnote 2, entrepreneurs were overrepresented in the sample: while the ratio of entrepreneurs over the total sample of employees represented 3.5% (615/17,784), the ratio was significantly higher (30.7%) over the subsample of employees (315/2,000). I overcome this issue by weighting the data by their inverse sampling probability so that each occupational category matches its real proportion in the population. Unweighted regressions provided similar results.

As the theory predicts, intrapreneurs differ from entrepreneurs on their entrepreneurial ability and the relative risk ratios are in the same direction as the theoretical predictions (Hypotheses 3a and 3b). For example, greater opportunity recognition and self-perception of entrepreneurial skills decrease significantly the relative risk for the choice between intrapreneurial and entrepreneurial outcomes. In other words, intrapreneurs are less likely to perceive they have the necessary start-up skills and that there are good opportunities for start-up in the market in the next 6 months. The comparison between intrapreneurs and employees in column (2) confirms the finding in the previous section that short-term opportunity recognition is negatively associated with an intrapreneurial career. Some intrapreneurs may get involved in the projects at the request of their employer or another colleague and this would explain their lack of alertness and more negative perception of the market opportunity (Parker 2011). Interestingly, training in starting a business after completing official schooling (i.e., post-secondary education), turns out to be significant and more likely to be associated with intrapreneurship rather than entrepreneurship. This variable could reflect a more balanced or diverse formal training necessary for start-up and would reject part of the Hypothesis 3a that balanced human capital is linked to independent entrepreneurship. This is somewhat surprising, as I would have expected entrepreneurship training to encourage people to cross the frontier into entrepreneurship. But it may reflect something else; it encourages people to be enterprising beyond the usual conception, that is, in the context of an established business.

Turning now to the predicted differences between intrapreneurs and engaged intrapreneurs, column (3) reaffirms the trend already observed in the descriptive analysis: the variables of interest (*Fear of failure, lnIncome, Training in business creation, Graduate, Perceived start-up skills and Opportunity recognition*) exert an almost identical effect on the decision-making between intrapreneurs over entrepreneurship as over-engaged intrapreneurship. Given that these results suggest a clear distinction between the two intrapreneurship categories and point intuitively towards a greater resemblance between engaged intrapreneurs and entrepreneurs, I now consider the probability of becoming an engaged intrapreneur over an independent entrepreneur.

Table 3 Multinomial logit analysis-engaged intrapreneurs, entrepreneurs

Independent variables	Engaged intrapreneur vs. entrepreneur[a]
lnIncome	0.88 (0.11)
Fear of failure	1.15 (0.21)
Training business creation	1.15 (0.24)
Graduate	1.38* (0.25)
Perceived start up skills	0.99 (0.29)
Opportunity recognition	0.66** (0.12)
Control variables	
Male	1.35* (0.23)
Age	1.04 (0.06)
Age sq	1.00 (0.00)
Know entrepreneur	1.42* (0.27)
$n = 1{,}760$	
$\chi^2 = 334.98$	
Prob $> \chi^2 = 0.000$	
Pseudo $R^2 = 0.1061$	

Asterisks indicate significance level where *** $p < 0.01$, ** $p < 0.5$, * $p < 0.1$. Relative risk ratios from multinomial logistic regression. Robust standard errors are reported in parentheses

[a] Entrepreneur is the base outcome

The factors underlying the probability of choosing engaged intrapreneurship over entrepreneurship differ from those observed for the choice of intrapreneurship. As shown in Table 3, observing good business opportunities in the market increases the likelihood of getting involved in independent entrepreneurship. However, having a university-level degree now exerts a significantly positive effect on engaged intrapreneurship while the rest of the human capital measures (*Perceived start-up skills* and *Training in business creation*) turn out to be non-significant in the model and do not provide evidence for the prediction on balanced human capital skills.

So far, I have discussed results that were statistically significant and which supported (or not) my predictions set out in the hypotheses. I now move on to explore the magnitude or the economic significance of these effects. For this purpose, I plot discrete change coefficients, which indicate how a unit increase, i.e., one standard deviation change for continuous variables and a unit change for dummy variables, affects the probability of choosing each of

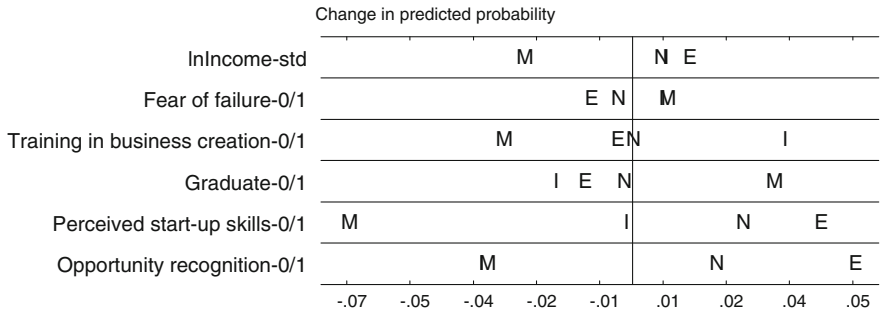

Fig. 1 Discrete changes in predicted probabilities

the occupations holding the rest of the variables at their mean value (Long and Freese 1997). The four occupational categories are labelled as before: intrapreneurs (I), entrepreneurs (E), employees (M) and engaged intrapreneurs (N).

Figure 1 reveals that the effect of entrepreneurial ability, in particular the effects of perceived start up skills and the ability to observe business opportunities, is the largest predictor of occupational choice and especially increasing the probability of riskier occupations. Recognising business opportunities in the short-term increases the likelihood of becoming an entrepreneur by 0.054. A slightly lower absolute positive change (0.045) is associated with the perception of having enough knowledge and skills for start-up, while this effect substantially decreases the probability of becoming an employee (−0.070). The corresponding effects on the probability of engaging in intrapreneurial activities are in the same direction of entrepreneurship but of a lower magnitude. The effect of entrepreneurship education is large in predicting the probability of intrapreneurship. Similar calculations as before show that training in business creation is associated with an absolute 0.037 increase in its probability.

I have undertaken a large variety of robustness tests. As mentioned earlier, the multinomial logit regression requires the Independence of Irrelevant Alternatives (IIA) to hold (Train 2003). A Hausman test was conducted to detect this potential error and I concluded that the IIA assumption was not violated at the 5% significance level. Moreover, in order to relax this theoretically strong assumption, and given that the Hausman test is only reliable under homoskedastic residuals, a multinomial probit model was performed. The results confirmed the robustness of the logit specification. All results are also robust to including additional demographic variables, such as regional dummies, household size and urban–rural origin of respondents.[5]

Finally, one central issue in the formulation of the conceptual discussion and empirical analysis presented here is whether intrapreneurs resemble any occupational category not included in the model. Over half of the intrapreneurs reported that they performed a leadership role in the project, suggesting an interesting comparison to middle managers not involved in corporate venturing activities rather than the pooled sample of employees might be a fruitful line of inquiry. However, I was unable to identify managers with no involvement in the ownership of the business separately from owner-managers in the sample, and hence I conducted the comparison test between intrapreneurs and owner-managers of established firms (more than 42 months) that are also surveyed as part of the GEM survey. Overall, and not surprisingly, the results were similar to those obtained from the comparison of intrapreneurs with entrepreneurs and conclude that owner-managers reflect the profile of successful independent entrepreneurs' attitudes and abilities.

5 Conclusions

This paper has been designed to investigate the determinants of becoming an intrapreneur. Based on the definition that intrapreneurs are individuals involved in the formation of new businesses within the boundaries of an existing organisation, that is, in broad terms, a form of corporate venturing, the paper questions their similarity with independent

[5] Results are available upon request.

entrepreneurs and asks whether they are more likely to resemble the profile of employees.

The results presented here have gone some way towards enhancing our understanding of the process of intrapreneurship. The existing literature on intrapreneurship has underestimated the role and impact of individual intrapreneurs and poorly understood their incentives to participate in corporate venturing activities. Indeed, intrapreneurs are generally thought of as a sub-category of entrepreneurship, without the necessary supporting evidence. I argue that a distinction within the category of intrapreneurship, based on the level of engagement and, therefore, the level of personal risks that they are required to bear, sheds some light on the concept of intrapreneurship. I find that engaged intrapreneurs, a term which is meant to encompass intrapreneurs who expect to acquire an ownership stake in the business, unlike the rest of intrapreneurs, share the attributes usually assumed to characterise entrepreneurs.

Second, following the utility maximisation theory, I provide empirical evidence to show that intrapreneurs resemble employees rather than entrepreneurs, a fact that should be taken into account in future theoretical developments on the definition of intrapreneurship. Specifically, comparing the decision-making of intrapreneurs to that of entrepreneurs, GEM data for Spain suggest that intrapreneurs are significantly more risk averse, expect a lower but less uncertain reward, and are broadly endowed with a poorer set of entrepreneurial abilities; despite having higher levels of human capital, they fail to recognise business opportunities and have lower confidence in their entrepreneurial skills. My findings are consistent to those of Parker (2011), who found that those variables explaining the self-selection of individuals into intrapreneurial or entrepreneurial activities also supported the choice of nascent intrapreneurship over nascent entrepreneurship. The study also shows greater similarities between intrapreneurs and employees and reaffirms the idea that the former have a significant preference for paid employment and may lack the necessary skills and attitudes commonly linked to independent entrepreneurship.

I have also argued that the same factors driving the decision to become an entrepreneur are also associated with the choice of switching to engaged intrapreneurship. Thus, I stress the fact that aggregation of the different dimensions of intrapreneurship should be made with caution in future theoretical developments on the individual intrapreneurship literature. Another important managerial implication is that suitable reward schemes should differ for each type of intrapreneurial activity. As pointed out by Monsen et al. (2010), profit-sharing contracts have an increased effect on the willingness to participate in corporate venturing activities when both pay and the risks of job security are lower. Taken together, I argue that the reaction to profit-sharing contracts will not be homogeneous among all intrapreneurs, but could be used to attract the ablest and less risk-averse employees to participate in riskier projects.

I am also aware of some of the limitations of the study that may have influenced the results. For example, GEM surveys lack data on individual income levels, so household income data have been used instead, with the consequent potential measurement error. I am also concerned about endogeneity issues between the choice of the occupation and the variables considered as independent in the model, such as income, fear of failure or perceived entrepreneurial skills. In particular, this problem would affect the comparison between paid employees and both entrepreneurial groups. Additionally, I may be omitting significant variables not provided by the GEM survey, such as work experience, tenure, or industry categories as well as information concerning the precise contractual terms between intrapreneurs and their employers that would help understanding the potential transition from paid to self-employment. Indeed, I have addressed the occupational choice from a static view, so a natural step would be to allow flows across occupations. I hope to tackle these issues in future waves of the GEM data.

Further questions remain regarding the optimal decision for the parent company on whether to develop the projects internally or rather to spin-out an independent venture through the vehicle of a former employee. In line with the concept of engaged intrapreneurship, this would relate to the incentives structure at the corporate level which would interplay with those of the employee to allow intrapreneurs to participate as an owner of the new venture.

In conclusion, most individual intrapreneurs are found to be vaguely entrepreneurial based on the traditional entrepreneurial traits, such as risk aversion, opportunity recognition and self-perception of entrepreneurial skills. We are left, however, with the

evidence that intrapreneurs are a heterogeneous group and their level of engagement in the business yields a valuable insight into their decision to make further commitments.

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Appendix

See Table 4.

Table 4 Description of variables

Variable name	Variable description
Risk-related variables	
lnIncome	Total income of household in natural logarithms
Fear of failure	(1,0) dummy taking value one if respondent answered *yes* to: "would fear of failure prevent you from starting a business?"
Entrepreneurial ability	
Training business creation	(1,0) dummy training in starting a business after completing education in school
Graduate	(1,0) dummy if graduate or postgraduate educational attainment
Perceived start-up skills	(1,0) dummy taking value one if respondent answered *yes* to: "do you have the knowledge, skills and experience required to start a new business?"
Opportunity recognition	(1,0) dummy taking value one if respondent answered *yes* to: "in the next six months will there be good opportunities for starting a business in the area where you live?"
Demographic controls	
Male	(1,0) dummy if male
Age	Age at time of interview
Know entrepreneur	(1,0) dummy taking value one if respondent answered *yes* to: "do you know someone personally who started a business in the past 2 years?"
Household size	Total size of household including respondent
Urban	(1,0) dummy if urban residence

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