THE DECISION TO BECOME AN ENTREPRENEUR IN SPAIN: THE ROLE OF HOUSEHOLD FINANCES

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ABSTRACT

Our objective is to analyse the decision to become an entrepreneur in Spain, with a special focus on the role of household finances in making that decision. To that end, we compare earnings for both salaried workers and entrepreneurs, and develop a theoretical framework to characterize entrepreneurship outcomes by a production function. This model is then estimated by binary Maximum Likelihood estimation regression models, employing Spanish micro-data from the Financial Survey of Families (Encuesta Financiera de las Familias), 2011. Our results show that household assets (vehicles, real estate, and investments) and the financial security that they provide, also affect entrepreneurship by encouraging individuals to become entrepreneurs.

INTRODUCTION

Entrepreneurship is a common alternative to salaried employment at a global level. However, we should think about it not simply as one kind of occupation, but also as an activity where background (family factors, education…) and external determinants must be taken into account (Galindo, Méndez & Alfaro, 2010).

In this context, the objective of our work is to analyse the decision to become an entrepreneur in Spain, with a special focus on the household financial situation. To that end, we first compare earnings and its determinants for both salaried workers and entrepreneurs. Spain has been strongly affected by the economic crisis and the unemployment rate has suffered greatly from its effects. Thus, Spanish individuals may have incentives to find income from sources other than salaried jobs (Congregado, Golpe & Carmona, 2010; Cueto, Mayor & Suárez, 2015). However, it is possible that the expectations of those considering becoming an entrepreneur - a job without supervision, without a boss, without rigid schedules - will be tramelled by the reality of a crisis-affected labour market, in the sense that the expected earnings cannot be obtained unless entrepreneurs devote not only large temporal and capital investments and managerial inputs, but also use other concepts, such as innovation.

In order to satisfy our objective, we develop a theoretical framework stating that entrepreneurship outcomes are characterized by a production function whose inputs are capital investment, time devoted, and individual managerial ability (see Blau, 1985; Taiwo, 2010). We also regard technical abilities as being important. Individual managerial ability refers to the capability to successfully run a business, which will be taken into account as labour experience, while technical abilities involve technical knowledge, closely linked to the individual's level of education. We will also include other personal and family variables that have traditionally been included in wage empirical works to check their relevance and utility in our entrepreneurship context.

LITERATURE AND CONCEPTUAL FRAMEWORK

Literature

Theoretical and empirical studies of entrepreneurship are common fields in the economic literature. Before describing the literature on the economic factors that may play a key role in entrepreneurship, we first refer to the works that have studied earnings for both salaried workers and entrepreneurs. Carrasco, Martínez-Granado & Albarrán (2009) study the inequality between salaried and entrepreneur workers, showing that salaried workers' wages are significantly higher than the earnings of their self-employed counterparts. Castro and Santero (2014) find empirical evidence on the importance of level of education, labour stability, and experience of gender as determinants of entrepreneurship. At an international level, Hamilton (2000) studies earnings differentials between private-sector salaried workers and self-employed workers, showing that the financial profits of salaried workers, and their rate of growth, are 35% higher than those of self-employed workers. Although the literature includes many works analysing wages and their determinants (e.g., Pinkston, 2003; Soni & Goel, 2014; Rodrigo, 2015), to the best of our knowledge there are no analyses testing whether those determinants play any role in determining self-employment outcomes. In fact, analyses of the linkages between entrepreneurial activities and background and individual characteristics do not emphasise the role of potential self-employment and entrepreneurship income (e.g., Ruiz-Arroyo, Fuentes-Fuentes & Ruiz-Giménez, 2014; Gonzalez and Montero, 2014; Diaz. Guerrero & Peña, 2014; Garcia-Villaverde, Ruiz-Ortega, Parra-Requena & Rodrigo-Alarcón, 2014; Mata, 2014).

Returning to the influence of economic factors on entrepreneurial activity, and according to Acs (1992), there are certain macroeconomic factors that are important in determining levels of entrepreneurship, such us institutions (Kotsova, 1997) and social and economic country-specific factors. Barrado & Molina (2015) present an analysis of such indicators and find that OECD countries provide a more favorable macroeconomic background for developing entrepreneurship activities, although there are also some non-OECD countries where entrepreneurial activity is strong. There is some controversy about the importance of these institutional factors. Spencer and Gomez (2003) maintain that legal treatment and tax regimes are not sufficient in themselves to either encourage or discourage entrepreneurship, although Gomez-Haro & Gomez (2010) and Lugo & Espina (2014) find a positive relationship between entrepreneurial activity and institutions. Furthermore, there is no consensus on the role of Government incentives in entrepreneurial activity (Yu, 1998; Bjornskov & Foss 2006).

We now introduce some relevant information for Spain with respect to the key variables of our study. Spain is a country with a high structural unemployment rate (Domenech & Gomez, 2005), and during the recent crisis its unemployment rate reached 24.6% in 2012 (Rocha & Aragon, 2012). According to the Federal Reserve Bank of St. Louis (2012), there were almost 31.35 million individuals of working age in Spain, which states a rate of the working age population of 67.5%. The demographic and unemployment data could lead us to conclude that becoming an entrepreneur would be a good labor alternative to being an employee or unemployed, i.e., entrepreneurship due to necessity may be strong in Spain. However, we can find in Barrado & Molina (2015) a detailed review of the Spanish context (according to GEM indicators), in comparison with OECD and non-OECD countries, which does not agree with this hypothesis. These authors show that entrepreneurial activity in Spain was 6.1% in 2001 (vs. 8.7% of the OECD mean) and increased to 7.6% just prior the crisis (2007), then decreased to 4.3% in 2010 (vs. around 6% of the OECD mean), then remained stable around 5.6% until 2014

(vs. 8.99% of the OECD mean). The comparison with the OECD mean is even more dramatic when we measure entrepreneurship via GEM's TEA (Total Entrepreneurship Activity) index. The Spanish index is about one-half of the OECD mean. As is shown in Barrado & Molina (2015), Spanish institutions do not specially favour entrepreneurship. In all cases, the indicators (tax treatment, bureaucracy, I+D transfers, Government incentive policies and programmes, access to infrastructures, market opening and dynamism, entrepreneurial education programmes, and social norms) are below the OECD means – some of them significantly - and in the case, for example, of access to financing, Spain is at the bottom of the list, above only Greece.

Focusing now on the social and economic factors, Gimenez-Nadal & Molina (2014) show the importance of identifying those economic factors, such as unemployment, and the household economic situation, that can encourage or discourage entrepreneurship, in order to develop and design labor policies. Thus, unemployment has a strong impact on entrepreneurial activity, although there is no clear relationship and it can be conditioned by socio-geographical characteristics (Storey & Johnson, 1987; Thurik, Carree, Van Stel & Audretsch, 2008).

Cueto, Mayor & Suárez (2015) find that, in certain regions of Spain, unemployment and self-employment move in opposite directions, while in other regions they move in the same direction. This is due to the so-called "entrepreneurial spirit" of individuals: if this entrepreneurial spirit is strong in a certain region, then people will find entrepreneurship to be an attractive alternative to salaried employment and they may resort to it as a way out of unemployment. On the contrary, if the entrepreneurial spirit is weak in a given region, increases in unemployment will not be followed by increases in self-employment.

Following the same line of research, and also in the case of Spain, Congregado, Golpe & Carmona (2010) analyse the relationship between unemployment and entrepreneurship and find that, during economic crises, unemployment encourages entrepreneurship. Moreover, during periods of expansion, few successful entrepreneurs leave self-employment because they cannot find better labour conditions. On the other hand, these same authors (Congregado, Esteve & Golpe, 2012) find evidence that, while the level of salaried employment in Spain has varied substantially during the recent economic crisis, the level of self-employment has not, in a different pattern from that of the 1991-1993 crisis, where the level of self-employment was not stable.

Household variables have been underestimated, and underused, in the existing literature and we believe that the inclusion of the household economic situation in a micro-econometrical model is novel. Sobel (2008) highlights the importance of individuals assuming personal financial risks in order to be entrepreneurs as an important and inherited characteristic of entrepreneurial activity. This argument leads us to analyse the role of the family financial situation, which is a primary factor in the individual's attitude toward risk - not only economically, but also psychologically. Despite that some authors (e.g. Keeble, Bryson & Wood, 1993) claim that a higher level of education leads to more entrepreneurial opportunities, Galindo, Méndez & Alfaro (2010) show how University-educated individuals may choose salaried jobs rather than initiate a business, because of the inherent risk and income instability. On the other hand, Gimenez-Nadal, Molina & Ortega (2012) analyse the relationships between self-employment and time spent on household chores, showing how self-employment offers individuals more flexible hours, allowing mothers, for example, to structure their market-work time and childcare time in a more efficient way. Ruiz-Arroyo, Fuentes-Fuentes & Ruiz-Giménez (2014) discuss the importance of resources and capabilities in entrepreneurship, although they do not include in this category any household finance-related factors, and Mata (2014) talks about

the role of the entrepreneurial environment, while also omitting any variables connected with the financial situation of individuals or households.

Conceptual Framework

Our new approach takes the unitary models of Blau (1985) and Taiwo (2010) as benchmarks, in order to formulate a household/collective conceptual model, in line with those developed by Chiappori (1992) and Donni & Matteazzi (2010), for example. In the context of the unitary models, individuals maximize their utility function (whose inputs are leisure and consumption) individually, subject to both budgetary and temporal constraints. As mentioned above, entrepreneurship outcomes are characterized by an income-production function with capital, temporal, and managerial inputs. Individuals can control the time devoted to entrepreneurship and capital investment, but not personal abilities, which are fixed for each individual.

In moving to a household approach, we suppose that households are formed by two individuals *i*=1,2, i.e., our households will be couples. The difference is that it is the household itself, and not its component individuals, who maximize utility. Thus, we can write the maximization utility function as follows:

$$\mu \times U_1(\boldsymbol{G}_1, S_1) + (1-\mu) \times U_2(\boldsymbol{G}_2, S_2) \quad (1)$$

where $U_i(\boldsymbol{G}_i, S_i)$ is the utility of i, in function of consumption, $\boldsymbol{G}_i$, and leisure time, S_i. Parameter $\mu \equiv \mu(w_i + Q_i, d)$ defines the household bargaining power of $i = 1$ (so $1-\mu$ is that of individual $i = 2$) as a function of individual earnings, $w_i + Q_i$, and socio-demographic characteristics, d. We define w_i as private-sector wage and Q_i as the self-employment earnings of individual i.

Let E be total household worth and T be total disposable time (which must be divided between leisure, salaried work, H_i, and entrepreneurship, N_i). We take w_i as exogenous. Now, we characterize entrepreneurship by using a production function $Q_i \equiv Q_i(K_i, N_i, M_i)$ where Q_i is output, K_i is capital investment and M_i reflects personal (managerial and technical) abilities. Q_i follows the common productivity function hypothesis. Then, temporal and budgetary constraints can be respectively written as:

$$H_i + N_i + S_i = T, \; i = 1,2 \quad (2)$$

$$G_1 + G_2 + K_1 + K_2 = E + w(H_1 + H_2) + Q_1 + Q_2 \quad (3)$$

Note that there is a temporal restriction for each individual because there is no conceptual or analytical reasoning behind defining a household temporal restriction. However, there is a unique budgetary constraint that depends not only on individual earnings and working time, but also on household income.

Against this background, individuals have control over H, N and K (note that as far as T is fixed, by controlling H and N, $S = T - H - N$ is immediately determined). Thus, the maximization problem can be solved by using the second theorem of welfare economics. According to this theorem, the problem is analogous to a two-step process. In the first step, an intra-family

negotiation process is carried out and individuals arrive at an agreement regarding household income distribution: $E = E_1 + E_2$. In the second step, individuals maximize their utilities independently, under a traditional temporal constraint and a new budgetary constraint that depends upon the negotiation process of the previous step:

$$\begin{aligned} &\text{For } i = 1,2, \quad \text{Max:} \quad U_i = U_i(G_i, S_i) \\ &\text{Subject to:} \quad H_i + S_i = T \\ &\qquad\qquad G_i + K_i = E_i + wH_i + Q_i \end{aligned} \tag{4}$$

METHODS

Data and Variables

The Bank of Spain's "Encuesta Financiera de las Familias" (EFF) is a survey of the National Statistical Plan ("Plan Estadístico Nacional") that collects information about income, assets, debts, and consumption at the household level. It has been developed every three years since 2002, for individuals of each socio-economic stratum, in order to obtain a complete picture. Its objective is to offer direct information about the economic and financial situations of Spanish families. Such information complements the aggregated data collected in the financial accounts ("Cuentas Financieras") of the Spanish economy. The survey is based on 245 (on average) stylized questions about the following: demographics, real assets and their associated debts, other debts, financial assets, pensions and insurance, labor market situation and labor income, non-labor income, means of payment, and consumption and savings. Some of these questions are asked of the head of the household and others to every member of the household. The sample oversamples the wealthy, because a small fraction of the population holds a large share of household wealth, and many financial assets are held by a small fraction of the population. It also contains replicate weights in order to take into account simple design features. The total sample size is of 6,106 individuals. More information can be found in http://www.bde.es/bde/es/areas/estadis/Otras_estadistic/Encuesta_Financi/.

We use the cross-sectional data collected in this survey for both the household and the head of household for the year 2011. The importance of this data is that it includes financial and economic variables, such as wages, earnings, labour contracts, self-employment outcomes, levels of debt, value of business, value of household worth, mortgages, benefits, scholarships, loans, assets…, and also personal, social variables such as age, education level, and nationality. This kind of data has been underused in labour economics, particularly in entrepreneurship analyses.

We keep or set up the following variables: "entrepreneur" (determines when an individual is an entrepreneur), "entrepreneur, main" (when an individual's main job is as an entrepreneur), "salaried" (when an individual is employed in a salaried position), "salaried, main" (when an individual's main job is salaried), "wage" (measured in Euros, of the head of the family), "entrepreneurship earnings" (measured in Euros, of the head of the family), "total earnings" (the sum of the two former values), "salaried work time" (measured in hours per week, of the head of the family), "entrepreneurship work time" (measured in hours per week, of the head of the family), "work time" (the sum of the two former values), "household income", "household expenses" (both measured in average Euros per month of the whole family), "home ownership" (when a family owns the home they live in, versus renting it), "age" (of the head of the family), "age^2/100", "family size", "living as a couple", "good health" (of the head of the family, self-

reported by individuals in EFF), "education level" (of the head of the family; we distinguish between basic, secondary, and university education), "age of business" (for entrepreneurs), "experience, private sector" (for salaried head of families), "long-term contract", "full-time contract" (for salaried head of families), "mortgages" (aggregating the present value of all outstanding mortgages in the household, measured in Euros), "household vehicles value" (aggregating the present value of all household vehicles, measured in Euros), "household estate value" (aggregating the present value of all household real estate, measured in Euros), "other property value" (jewellery, art…), "debts" (aggregating the present value of all household debts, except mortgages, measured in Euros) and "assets" (aggregating the present value of all household assets, measured in Euros). A summary of these constructed variables and their correspondence to the original EFF2011 counterparts cab be found in Table A1 in the Appendix.

We eliminate those families whose head of household is retired or unemployed, and retain a sample of 2,501 individuals (of whom 1,724 are salaried workers and 842 are self-employed or entrepreneurs). A statistical summary of our variables, by gender and by labour status, is shown in Table 1. We have defined zero earnings for those individuals who are entrepreneurs and have no profit from a business. It is apparent that, on average, men present higher earnings than women. In fact, this pattern is true for both salaried (+1,400€) and entrepreneur (+600€) families. Moreover, those who are employed receive significantly higher earnings than those who are entrepreneurs (+2,000€ for men and +1,000€ for women). Regarding time devoted to work, we find that, in fact, entrepreneurship is not related to less market work time. On the contrary, entrepreneurs, both men and women, devote on average 3 hours more per week to their jobs than do their counterparts. Men also devote, on average, more time to market work than women, +6 hours and +5.5 hours per week for employed and entrepreneur men, respectively. This is directly related to the so-called Household-Responsibilities Hypothesis (Gimenez-Nadal and Molina, 2015), which holds that women devote more time to childcare and household activities. Thus, mothers will devote less time to other activities, such as market work.

Table 1
DESCRIPTIVES

	Male					**Female**				
	Entrepreneurs		**Salaried**		Diff.	**Entrepreneurs**		**Salaried**		Diff.
Variables	Mean	E.D.	Mean	E.D.	*P*-value	Mean	E.D.	Mean	E.D.	*P*-value
Entrepreneur (main)	.9037	.2951	.0144	.1194	(<0.01)	.9096	.2875	.0043	.0659	(<0.01)
Salaried (main)	.0616	.2407	.9652	.1831	(<0.01)	.0451	.2083	.9752	.1554	(<0.01)
Salaried	.0827	.2756	1	0	(<0.01)	.0564	.2315	1	0	(<0.01)
Entrepreneur	1	0	.0530	.2242	(<0.01)	1	0	.0145	.1198	(<0.01)
Self-employment earnings	1029.7	4117.6	46.07	725.7	(<0.01)	412.03	1642.1	1.778	46.62	(<0.01)
Wage	247.82	1035.8	3029.7	4394.1	(<0.01)	64.11	354.34	1591.6	1227.9	(<0.01)
Total earnings	1277.5	4246.9	3075.8	4459.6	(<0.01)	476.18	1667.5	1593.4	1227.7	. (<0.01)
Household income	17430	44847	7906.5	29789	(<0.01)	14867	63919	4576.9	5547.6	(<0.01)
Household expenses	2433.2	3796.8	1561.2	1269.3	(<0.01)	1884.1	2452.0	1247.0	905.05	(<0.01)
Home Ownership	.9593	.1975	.9189	.2729	(<0.01)	.8983	.3031	.8791	.3261	(0.443)
Age	55.24	10.99	49.13	10.15	(<0.01)	51.82	10.92	46.70	9.619	(<0.01)
Age^2/100	31.72	12.14	25.17	9.837	(<0.01)	28.04	11.55	22.73	8.903	(<0.01)
Family size	3.198	1.334	3.145	1.260	(0.450)	2.915	1.300	2.895	1.236	(0.815)

Living as a couple	.8330	.3731	.7849	.4110	(<0.01)	.6214	.4863	.5254	.4997	(0.020)
Good health	.8090	.3933	.8746	.3312	(<0.01)	.8135	.3905	.8602	.3469	(0.113)
Basic education	.1909	.3933	.1494	.3567	(0.054)	.1920	.3950	.1382	.3454	(0.068)
Sec. education	.3203	.4669	.4445	.4971	(<0.01)	.3898	.4890	.4643	.4990	(0.072)
Univ. education	.4872	.5002	.4011	.4903	(<0.01)	.4124	.4936	.3930	.4887	(0.637)
Age of business	18.75	13.08	-	-	-	16.44	14.58	-	-	-
Experience (p.s.)	1.908	.3890	17.39	12.31	(<0.01)	.6610	.2411	12.74	10.89	(<0.01)
Long-term contract	-	-	.8833	.2311	-	-	-	.8034	.3976	-
Full-time contract	-	-	.9324	.2510	-	-	-	.7423	.4376	-
Entrepreneurs working hours	43.25	16.82	1.314	6.729	(<0.01)	37.81	19.57	.3595	3.345	(<0.01)
Salaried working hours	2.357	8.982	40.13	10.12	(<0.01)	1.276	5.690	34.18	10.63	(<0.01)
Total working hours	45.61	16.33	41.45	10.53	(<0.01)	39.09	19.40	34.54	10.70	(<0.01)
Mortgages	10150	50396	4943	10546	(<0.01)	4793.2	10094	4977.9	24089	(0.911)
Household vehicles value	2714.5	8808.3	1359.6	2189.4	(<0.01)	1437.0	2237.3	906.01	1454.4	(<0.01)
Household real-estate value	173703	515277	55884	110650	(<0.01)	94087	166910	41111	126153	(<0.01)
Other property value	4433.0	20359	1017.2	7474.1	(<0.01)	1437.3	4659.5	505.49	4330.9	(0.011)
Debts	18113	311605	1620.5	17517	(0.092)	2334.8	12022	525.58	3351.5	(<0.01)
Assets	79739	2757656	443076	3152419	(0.013)	402989	2132587	68646	292650	(<0.01)
N. obs.	665		1037			177		687		

Note that employed and entrepreneur individuals do not necessarily have a single employment. Observing the number of individuals in our sample and the number of employed and entrepreneurs, we find that some must, by necessity, combine both types of labour status. 8.2% (5.6%) of entrepreneur men (women) in our sample are also salaried workers, and 5.3% (1.4%) of the employed men (women) also have their own business.

Earnings densities are shown in Figure 1. We see a strong presence of null or almost null declared earnings for entrepreneurs (remember that those individuals who report having a self-employment loss have been coded as having zero earnings). These individuals are an important part of our analysis (85.6% of the entrepreneurs from the sample declare zero or negative self-employment earnings) and we do not consider eliminating them to be an option, due to the fact that they reflect an important part of our sample and, thus, the reality of entrepreneurship and self-employment in Spain. Although salaried workers also present a density concentrated around low values, the mean is significantly higher than that of entrepreneur workers, as mentioned above.

Figure 1
DENSITIES OF EARNINGS

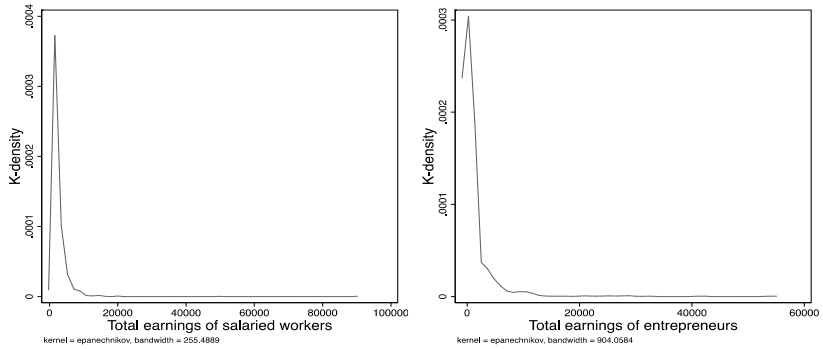


Figure 2 shows the relationships between total earnings, total time devoted per week to work, and educational level, for both salaried workers and entrepreneurs. We see a relationship between a high educational level and higher earnings in the employed workforce, although there is no clear relationship to market work time. Regarding the entrepreneurial workforce, we see that education and earnings do not appear to be related, but the higher the educational level, the lower the market work time. Figure 3 shows the relationships between experience and earnings. For salaried workers, we take their experience directly from the EFF; for entrepreneurs, we approximate it based on the age of their business. Although it appears that earnings increase slightly with experience for salaried workers, we cannot conclude that there is a positive relationship, either for those who are employed or for entrepreneurs. Thus, we find no clear evidence, in the case of Spain, of the importance of technical and managerial abilities as inputs for the entrepreneurship production function. Moreover, the temporal input also does not appear to play a determinant role.

Figure 2
RELATIONSHIPS BETWEEN EARNINGS, EDUCATION LEVEL AND MARKET-WORK TIME

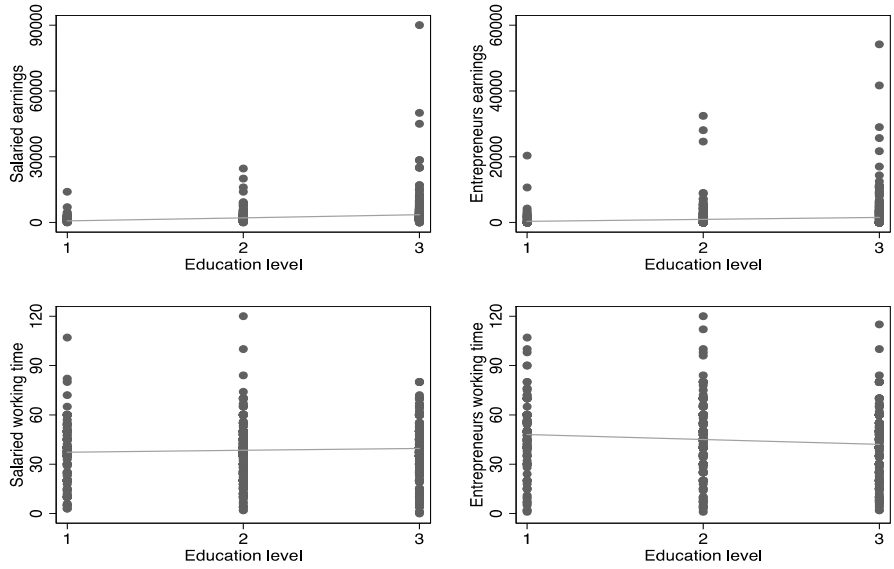
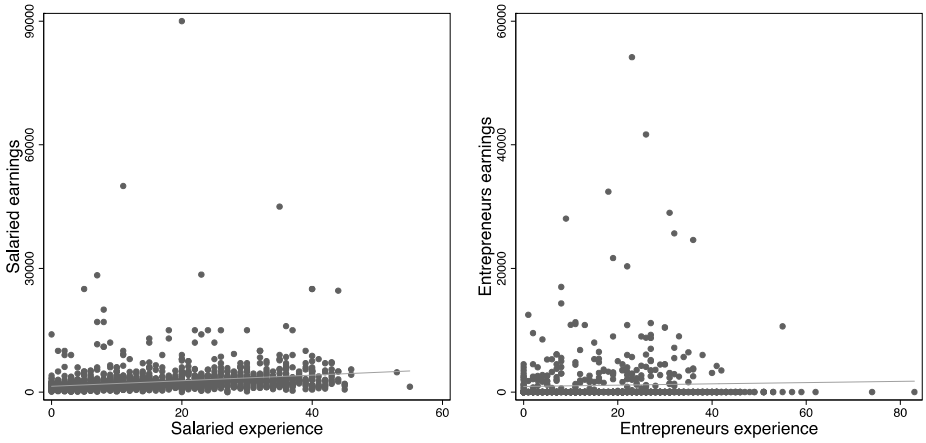


Figure 3
RELATIONSHIP BETWEEN EARNINGS AND EXPERIENCE



Analysis Strategy

We propose two empirical models, one for the earnings analysis and another for the study of household finances and entrepreneurs. The former, which we call the "earnings model", is proposed as a linear regression model whose parameters will be estimated by Ordinary Least Squares, OLS. We regress earnings for salaried workers and entrepreneurs from a series of variables. These variables are work-related (experience, market-work time, and type of contract, for salaried workers), educational, household (living as a couple, family size, ownership of the home, monthly expenses, and debt), personal (age, gender, and health), and labour status variables, all as shown in Table 1. Estimates of these parameters will be interpreted as the average variation of earnings between individuals, according to their labour status (for salaried workers, the entrepreneurship parameter reflects the earnings differences, *ceteris paribus* and are not measured by the rest of the variables, between an individual who only works in a salaried position and an individual who is also an entrepreneur). We also include age squared, to measure the presence of non-linear relationships.

The second model we propose refers to household finances, and we call it the "entrepreneurship model". We intend to show the relationships between certain financial variables, such as value of assets, household property, and debt, and being either an entrepreneur or salaried. In doing this, we propose two binary models, Logit and Probit. Since both models behave similarly, we expect that they will offer robust comparative estimates, in the sense that the significance and sign of the coefficients do not vary from one to another. The dependent variable of these models is thus the dummy variable "entrepreneur", because we want to compare the financial situation of salaried and entrepreneur families. We include not only financial variables in the model (mortgages, vehicle value, real estate value, other property value, debt, and assets), but also personal factors (gender, age, age squared, and health), household (expenses, living as a couple, and family size), labour (time worked, experience, and being unemployed in 2010) and education (using basic education level) variables. We use the weights collected in the EFF for both the Earnings and the Entrepreneurship model.

We can write the earnings models as follows:

$$W_i = \beta_0 + \beta_1 SE_i + \boldsymbol{\beta_2 X_i} + \varepsilon_i \quad (5)$$

$$W_i = \alpha_0 + \alpha_1 AS_i + \boldsymbol{\alpha_2 Y_i} + \epsilon_i \quad (6)$$

where W is the earnings of salaried workers and entrepreneurs, respectively, SE is the dummy "entrepreneur", AS is the dummy "salaried", $\boldsymbol{X}$ and $\boldsymbol{Y}$ are the remaining dependent variables for the salaried workers and the entrepreneurs, respectively, and ε and ϵ are standard robust error terms. We expect to find that $\beta_1 < 0$ and $\alpha_1 > 0$ are both meaningful, according to the notion that salaried workers earn more than entrepreneurs.

The Entrepreneur binary models can be written as:

$$SE_i = \delta_0 + \delta_1 \boldsymbol{Z_{1i}} + \delta_2 \boldsymbol{Z_{2i}} + \delta_3 \boldsymbol{Z_{3i}} + u_i \quad (7)$$

where $\boldsymbol{Z_1}$ are personal, family, labour and education variables, $\boldsymbol{Z_2}$ are debts and $\boldsymbol{Z_3}$ is property value; u is the standard robust error term. The coefficients must be interpreted as the change in the probit/logit function of being an entrepreneur (versus a salaried worker) when the corresponding dependent variable increases by one unit (the probit/logit function is directly related to the probability of being an entrepreneur, so it increases or decreases with increases or decreases in the probability of being an entrepreneur). We expect that $\boldsymbol{Z_2} < 0$ and $\boldsymbol{Z_3} > 0$, i.e., high wellness value, will encourage individuals to become entrepreneurs, and high debt will discourage them.

EMPIRICAL FINDINGS

Table 2 shows the results of the earnings models. Column 1 is restricted to individuals who are salaried and Column 2 is restricted to individuals who are entrepreneurs (again, not necessarily as their main job). We see that, for salaried workers, entrepreneurship implies, on average, a meaningful loss in earnings (-656€/month). On the other hand, the entrepreneurs who also work as salaried workers experience, on average, a meaningful increase in earnings (+1,295€/month).

Table 2
EARNINGS RESULTS

Variables	(1) Salaried	(2) Entrepreneur
Entrepreneur	-659.456**	
	(305.214)	
Salaried		1,295.558***
		(302.154)
Working hours	24.667***	4.709
	(9.267)	(6.818)
Male	509.114***	-117.346
	(70.859)	(273.505)
Age	12.796	18.160
	(28.650)	(37.798)
Age^2/100	-18.869	-19.188
	(32.552)	(33.214)
Good health	-243.912	94.847
	(230.074)	(125.483)

Home ownership	-118.408	123.383
	(199.143)	(183.979)
Debts	0.006	-0.001
	(0.006)	(0.000)
Living as a couple	70.766	-35.461
	(78.823)	(111.840)
Family size	-149.251***	-20.495
	(40.186)	(81.070)
Monthly expenses	746.675***	660.066**
	(143.793)	(259.883)
Sec. education	157.291*	-28.331
	(89.085)	(126.153)
Univ. education	1,097.100***	156.624
	(141.638)	(204.091)
Experience (p.s.)	21.059***	
	(4.829)	
Full-time contract	205.148	
	(179.770)	
Long-term contract	257.303***	
	(90.179)	
Age of business		5.092
		(8.626)
Intercept	-760.962	-1,160.756
	(484.416)	(860.462)
Observations	1,724	842
R-squared	0.415	0.200

It is also shown that market-work time is significantly related to earnings, but only for salaried workers. The greater the amount of market-work time, the higher their monthly salaried earnings, and vice-versa. For entrepreneurs, this relationship is not meaningful, indicating that, while salaried workers are encouraged to work more time for a higher wage, or that they receive higher earnings by working more hours, these factors do not hold for entrepreneurs. Moreover, family size has a negative relationship with earnings for salaried workers, but not for entrepreneurs. Gender is also related to salaried earnings (men earn about 500€/month more than women), but not for entrepreneurs. Age is not related to either condition.

We find that level of education and experience are not related to entrepreneurs' outcomes, which surprises us. Thus, we find no evidence, in this Spanish case study, of the importance of the hypothesis of Blau (1985), who discusses managerial abilities, measured as experience. Nor do we find evidence of the importance of technical abilities (measured as education level). However, we can conclude with certainty that the personal, family, and socio-demographic factors that are usually related to earnings are meaningful in the case of Spanish salaried workers, but not for entrepreneurs. Only monthly expenses show a positive relationship to entrepreneurs' outcome.

We now address the previously-mentioned importance of unobservable heterogeneity, i.e., factors for which data is not available (e.g., laws, taxes, evasion, differentiation between firm-owner, employer, or freelance worker, type of business, ideas behind business, innovation…). When we look at the R^2 of the models, we see that it is higher in Column 1, reflecting that the Earnings model of the entrepreneurs is less well-adjusted than the model for the salaried workers. Other variables that may affect entrepreneurs' earnings are individual expectations and entrepreneurial spirit. Dawson et al. (2015) maintain that pessimism and

realism imply success for self-employment because they do not raise expectations too high, but optimistic entrepreneurs do, and thus it is more difficult for them to fulfill those expectations.

Table 3 displays the estimates of the Entrepreneurship models. Columns 1 and 2 refer to Probit models and Columns 3 and 4 to Logit models. We obtain qualitatively similar results in both cases, so results do not depend on the statistical model chosen. Furthermore, we have eliminated certain non-meaningful variables of Columns 1 and 3 in Columns 2 and 4. The variables retain their significance, and the relationships do not change. Across household, personal, and labour variables, we see how market-work time is positively related to entrepreneurship, so the more time that is devoted to work, the greater likelihood of entrepreneurship, and vice-versa. Age is also, quadratically and positively, related to the probability of becoming an entrepreneur. It displays a U-shaped relationship, with a minimum around the 50s, indicating that middle-aged individuals are less likely to initiate a business, relative to both younger and older individuals. The pattern regarding the case of education variables is as follows: when we control for basic education level, a secondary education level is positively related to salaried employment. A university education level does not have a meaningful relationship with entrepreneurship or salaried employment. Health, gender, living as a couple, and family size do not affect the probability of becoming an entrepreneur. Regarding financial factors, it is shown that mortgages and debt are not related to the probability of being an entrepreneur; therefore, they do not affect entrepreneurs. Having been unemployed during the previous year is negatively related to entrepreneurship, while real estate, vehicles, and other valuable assets are positively related to entrepreneurship.

Table 3
ENTREPRENEURSHIP RESULTS

Variables	**(1)** **Probit (1)**	**(2)** **Probit (2)**	**(3)** **Logit (1)**	**(4)** **Logit (2)**
Working hours	0.030***	0.030***	0.052***	0.030***
	(0.006)	(0.006)	(0.013)	(0.006)
Male	0.181	0.185	0.212	0.185
	(0.142)	(0.142)	(0.258)	(0.142)
Age	-0.149**	-0.149**	-0.176	-0.149**
	(0.065)	(0.065)	(0.109)	(0.065)
Age^2/100	0.207***	0.209***	0.264**	0.209***
	(0.071)	(0.071)	(0.121)	(0.071)
Good health	-0.061	-0.059	0.105	-0.059
	(0.217)	(0.216)	(0.392)	(0.216)
Living as a couple	0.039	0.036	0.033	0.036
	(0.150)	(0.149)	(0.282)	(0.149)
Family size	0.035	0.033	0.088	0.033
	(0.065)	(0.065)	(0.118)	(0.065)
Sec. education	-0.434**	-0.437**	-0.789**	-0.437**
	(0.193)	(0.196)	(0.332)	(0.196)
Univ. education	-0.180	-0.187	-0.399	-0.187
	(0.209)	(0.210)	(0.369)	(0.210)
Experience (p.s.)	-0.149***	-0.149***	-0.379***	-0.149***
	(0.020)	(0.020)	(0.068)	(0.020)
Unemployed in 2010	-0.944***	-0.944***	-1.974***	-0.944***
	(0.255)	(0.256)	(0.544)	(0.256)
Monthly expenses	0.170*	0.169**	0.187	0.169**
	(0.087)	(0.086)	(0.193)	(0.086)

Mortgages	-0.057		-0.048	
	(0.070)		(0.132)	
Household vehicles value	0.793*	0.809*	1.828*	0.809*
	(0.468)	(0.470)	(1.050)	(0.470)
Household estate value	0.044**	0.042**	0.118*	0.042**
	(0.021)	(0.017)	(0.067)	(0.017)
Other property value	0.144		0.624	
	(0.431)		(0.800)	
Debts	0.174		0.358	
	(0.131)		(0.415)	
Assets	0.000	0.001	0.002	0.001
	(0.001)	(0.001)	(0.002)	(0.001)
Intercept	0.891	0.856	-0.036	0.856
	(1.417)	(1.419)	(2.366)	(1.419)
Observations	2,501	2,501	2,501	2,501

CONCLUSIONS

This paper analyses the differences between salaried and entrepreneur earnings; not only quantitative differences, but also the factors that determine them. We also study how household finances are related to entrepreneurial activity. To do so, we use the Bank of Spain's "Encuesta Financiera de las Familias", EFF, from 2011. Our main objective is to empirically study entrepreneurship in Spain, and examine the concept as a potential alternative to being an employee, with certain advantages, such as better time management.

Our empirical results show that salaried workers obtain significantly higher earnings than their entrepreneur counterparts. Furthermore, the average work time of entrepreneurs is notably higher than that of employed workers. We find evidence of the importance of the usual factors that determine wages, but these variables are not related to entrepreneurship outcomes. Moreover, the R^2 statistics appear to indicate that unobservable heterogeneity, possibly variables related to legal issues or a sense of calling, have a strong effect on entrepreneurs' income. We also find that debts and mortgages are not particularly related to entrepreneurial activity, in comparison with salaried employment, but the prior experience of unemployment discourages entrepreneurship and a good household financial situation encourages it. This leads us to conclude that entrepreneurship, and therefore self-employment, is not an activity exclusively derived from needs, but often arises from entrepreneurial spirit, desire, and innovation. Under these circumstances, we could add to the 'necessity vs. opportunity' classification of entrepreneurial activity (Reynolds, Bygrave, Autio, Cox & Hay, 2003) a new 'desire or calling' category.

Our empirical results show that salaried workers' wages are higher than entrepreneurs' earnings. Furthermore, factors that traditionally determine wages in a significant way do not have the same effect in the case of entrepreneurship outcomes. We also find that debt does not have a significant impact on the decision to become an entrepreneur, although the pessimism arising from unemployment does, discouraging that decision. Household assets (vehicles, real estate, and investments) and the financial security that they provide also affect entrepreneurship by encouraging people to become entrepreneurs. A need for income derived from high average household expenses also affects entrepreneurship in a negative way.

One limitation of our analysis comes from the nature of the data used. Since it is cross-sectional, we cannot determine causes and effects, we can only find relationships between variables. In our case, the causal relationships involved are not at all clear. The financial situation may determine entrepreneurial activity, or perhaps it is the fact of being self-employed, in comparison to being an employee, that determines the household financial situation.

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APPENDIX

Table A1
EFF2011 VARIABLES CORRESPONDENCE

EFF2011 Variable Codes	Set up variables	Kind of variable
P1_1_1=1 (I am required to ask you for your gender; that is to say, man or woman?)	Male	Continuous, head of household
P6_1c2_1=1 (What is your current employment situation?)	Entrepreneur	Dummy, head of household
P6_1c1_1=1 (What is your current employment situation?)	Salaried	Dummy, head of household
P6_32_1_1=1 (Is this your main job?)	Entrepreneur (main)	Dummy, head of household
P6_10_1_1=1 (Is this your main job?)	Salaried (main)	Dummy, head of household
P6_102_1_1 (How much do you receive monthly?) + p6_104_1_1 (How much do you personally receive from the business, apart from the regular wage, in annual terms?) /12	Self-employment earnings	Continuous, head of household
P6_14_1_1 (What are the regular gross monthly earnings this job brings you?)	Wage	Continuous, head of household
-	Total earnings	Continuous, head of household
mrenthog	Household income	Countinuous, all household
P9_1 (What is your household's total average spending on consumer goods in a month?)	Household expenses	Continuous, all household
P2_1=2 or 3 (What is the ownership status of your main residence?)	Home Ownership	Dummy, head of household
P1_2d_1 (Therefore, [name] is [calculated age] years old, correct?)	Age	Continuous, head of household
-	Age^2/100	Continuous
P1 (number of household members)	Family size	Continuous
P1_4_1=2 or 3 (What is your current marital status?)	Living as a couple	Dummy, head of household
P1_7_1=1 or 2 (What is the general state of health of the household members?)	Good health	Dummy, head of household
P1_5_1=1,2 or 3 (What is the highest educational level reached?)	Basic education	Dummy, head of household
P1_5_1=4, …, 9 (What is the highest educational level reached?)	Sec. education	Dummy, head of household
P1_5_1=10, 11 or 12 (What is the highest educational level reached?)	Univ. education	Dummy, head of household
2011-p4_107_1 (In what year did the business begin?)	Age of business	Continuous, head of household
P6_17_1_1 (How long have you worked for this company?)	Experience (p.s.)	Continuous, head of household
P6_13_1_1 (What type of employment contract do you have?)	Long-term contract	Dummy, head of household

P6_11_1_1 (Do you work full or part-time?)	Full-time contract	Dummy, head of household
P6_33_1_1 (How many hours do you usually work each week?)	Entrepreneurs working hours	Continuous, head of household
P6_12_1_1 (How many hours a week do you devote to this job?)	Salaried working hours	Continuous, head of household
-	Total working hours	Continuous, head of household
p2_12_1+…+p2_12_4+p2_55_1_1+p2_55_1_2+p2_55_1_3+p2_55_2_1+p2_55_2_2+p2_55_2_3+p2_55_3_1+p2_55_3_2+p2_55_3_3+p2_61_4	Mortgages*	Continuous, all household
P2_75+P2_79	Household vehicles value*	Continuous, all household
P2_5+P2_39_1+…+P2_39_4	Household real-estate value*	Continuous, all household
P2_84	Other property value*	Continuous, all household
P3_6_1+…+P3_6_8	Debts*	Continuous, all household
P4_24+P4_15+P4_7_1+P4_7_2+P4_7_3+P4_28a+P4_35+P4_43+P5_7_0	Assets*	Continuous, all household
P6_63c3_1=1 (What was your employment situation in 2010?)	Unemployed in 2010	Dummy, head of household

* Codes can be consulted in the questionnaire. Questionnaire is downloadable from http://www.bde.es/f/webbde/SES/estadis/eff/ficheros/en/questionnaire_2011.pdf