

Formal and informal social capital as determinants of European entrepreneurship and their role in explaining entrepreneurship among women and immigrants

Dilek Cetin ^{a, b, c}

Ana Fernandez-Zubieta ^a

Fulvio Mulatero ^{a*}

^a Institute for Prospective Technological Studies (IPTS), Joint Research Centre (JRC), European Commission, Seville, Spain

^b Department of Economics, Middle East Technical University, Ankara, Turkey

^c Department of Economics, Suleyman Demirel University, Isparta, Turkey

This article analyses the effect of different forms of capital – financial, human and social – on entrepreneurship in Europe. We distinguish between formal and informal aspects of social capital. We use European and World Values Surveys Four-wave Integrated Data File focusing on the 27 European Union Member States. We found a significant effect of social capital on entrepreneurship that varies within its formal and informal aspects. Formal social capital has a negative effect on entrepreneurship, while informal social capital positively influences entrepreneurship. We also find that the effect of formal social capital is different for women and immigrant entrepreneurs. Formal social capital has a positive and significant effect in explaining entrepreneurship among women and immigrants.

* Corresponding author. Fulvio Mulatero Tel. +34 954 488 461 ;fax +34 954 488 8326
E-mail address: fulvio.mulatero@ec.europa.eu

1. Introduction

Policymakers' attitudes towards entrepreneurship have evolved over the last decades, with an increasing attention devoted to entrepreneurship not simply for social and political reasons policy but also as a powerful engine of innovation and growth (Audretsch et al., 2002). Systematic international comparisons such as the Global Entrepreneurship Monitor (GEM) have contributed to raise awareness.¹ A number of regularities have emerged, such as the correlation between the creation of new firms and the rate of growth of GDP (Reynolds et al., 1999). Carree and Thurik (2003) survey the different strands of literature dealing with the relationship between entrepreneurship and economic growth: empirically, there is a growing body of evidence pointing towards a positive causal relation between entrepreneurship and growth.² Moreover, this relation seems to be getting similar across countries. However, when turning to the characteristics of entrepreneurship, data show a different behaviour in the US and Europe. So, for instance, while the education level affects the probability of being self-employed positively in the US, it does negatively so in Europe (Blanchflower 2004).³ In general, and as for many economic phenomena, while there is a more or less consolidated body of evidence on self-employment on the US, the evidence on Europe is still composed mainly by studies at the national level that, while giving a detailed picture for some countries, are not fully comparable.

The variables used to explain the individual decision of becoming an entrepreneur are usually of a personal nature: demography (age, gender, marital status, ethnicity...), psychological traits (risk aversion, preferences with respect to working time and organization of work), ability, formal education and other skills (creativity, initiative, opportunity seeking, persistence), financial assets, family background and previous work experience. There are also hints that social and cultural aspects have a bearing on the occupational status of an individual. The presence of successful role models of entrepreneurs, for instance, helps foster a cultural environment favourable to new entrepreneurial activities. According to Reynolds et al. (1999), a society with the following values is particularly favourable to entrepreneurship: the respect for entrepreneurs, the value placed on independence and autonomy in the workplace, the tolerance for inequality of income and wealth, and the (absence of) stigma attached to those whose entrepreneurial initiatives fail.⁴ However, social and cultural factors have generally attracted less attention as explanatory variables of entrepreneurship.

As regards the sources of data, often used is the Global Entrepreneurship Monitor (GEM) and, in particular, the Adult Population Surveys (APS) made within the remit of that project. Extensive and internationally comparable data focusing on the cultural dimension are difficult to have. In this respect, the European and World Values Surveys (EVS and WVS, respectively) present a natural appeal. To our knowledge, there are not many studies⁵ of entrepreneurship exploiting the richness of the EVS and WVS in the availability of non-economic variables and coverage of European countries.

This article analyses the effect of social capital on entrepreneurship, comparing it with financial capital, human capital and other individual variables. Within social capital, we distinguish between formal and informal social capital. By the former, we mean belonging to voluntary organization. By the latter, we mean frequency of

¹ The first issue of the GEM (1999) covered a restricted number of advanced economies (Canada, Denmark, Finland, France, Germany, Israel, Italy, Japan, United Kingdom, US); the latest (2008) version included 43 countries.

² Different ways of measuring entrepreneurship, however, lead to more or less significant results. So, for instance, Blanchflower (2004) does not find any evidence that a high self-employment level increases GDP or (net) job creation.

³ For the US case, Kim (2007) presents evidence that the relation between education and self-employment varies over time: high school graduates tend to have higher rates than those with college education when younger (under 35) while the reverse is true at later ages. The higher ability of college graduates to gather the necessary starting capital over time is one possible explanation.

⁴ Quite interestingly, Casson (2003) remarks that the qualities possessed by would-be entrepreneurs are surrounded by uncertainty and this implies that financing decisions are necessarily based on cultural stereotypes. Given the crucial role of the financial system in deciding which entrepreneurs are to be given financial support, the dominant culture within the financial sectors should play an important role.

⁵ Suddle et al. (2007) combined data from GEM and EVS/WVS in order to determine the role of national entrepreneurial cultures in fostering entrepreneurship, testing if countries with stronger entrepreneurial culture have higher rates of entrepreneurial activity. They use several existing indicators as proxy of entrepreneurial culture along with a newly developed one based on EVS/WVS data. The overall evidence is mixed and conflicting: according to the indicator used, the impact attributed to entrepreneurial culture can be either significant or not, positive or negative.

contacts with different social milieus (e.g. family, friends). We aim to check to what extent different forms of capital –financial capital, human capital and social capital – and diverse types of social capital – formal and informal – influence entrepreneurial activity differently. To our knowledge, there are not previous studies on the relationship between entrepreneurship and diverse types of social capital – formal and informal. We further focus our analysis on women and immigrants. We expect that formal and informal social capital will effect differently on entrepreneurship among women and immigrants, as these groups have some social disadvantages – share difficulties accessing full-time formal labour market and face specific constrains – and a significantly lower proportion of entrepreneurs.

This article is organised as follows: Section 2 presents the theoretical background; Section 3 introduces the hypothesis; Section 4 summarises the dataset and methodology; Section 5 reports the results; Section 6 concludes.

2. Theoretical background

2.1 Entrepreneurship and capital stocks

The importance of financial capital in facilitating entrepreneurship is well recognised (Meyer, 1990; Dunn and Holtz-Eakin, 2000 and Blanchflower and Shadforth, 2007). Blanchflower and Oswald (1998 and 2007), using UK data, show that receiving financial capital (e.g. inheritances or gift) increases the probability of an individual becoming an entrepreneur. While access to finance is considered a crucial factor in entrepreneurship, (would-be) entrepreneurs often face financial constraints (Evans and Jovanovic, 1989; Evans and Leighton, 1989; Holtz-Eakin, Joulfaian and Rosen, 1994; Blanchflower, Levine and Zimmerman, 2003). While access to financial capital is considered a crucial factor in entrepreneurship, other types of resources –educational and social- could also have an effect on entrepreneurship.

Human capital (Becker, 1962) has received a lot of attention for its possible influence on the development of abilities and opportunities of entrepreneurs. However, the evidence of a positive relationship between education and entrepreneurship is not very clear and it appears to vary across countries. Higher educational attainment increases the probability of becoming an entrepreneur in US (Blanchflower, 2000), whereas the relationship is negative, or less clear, in countries like United Kingdom or Canada (Blanchflower and Shadford, 2007). The diverse effect of human capital on entrepreneurship thus deserves more attention, as well as its relationship with other social factors like social capital.

The concept of social capital is increasingly used to explain a broad range of economic and social phenomena (Lin 1999; Woolcock, 1998; Jackman and Miller, 1998; Alder and Kwon, 2000 and Halpern, 2005). The concept of social capital has its roots in the work of European and American sociologists like Bourdieu (1986), Coleman (1988, 1990) or Burt (1992)⁶. Political scientists like Putnam (1993, 1995) or Fukuyama (1995) also invoke the concept of social capital to study the factors that create mutual trust, thus ensuring an adequate policy and institutional development.⁷ Although frequently they do not explicitly mention the concept, we could also consider as dealing with social capital all studies on social networks that follow Granovetter's work (1973, 1985) and analyse individual social resources as the result of the number of relationships in which the subject is involved (De Graaf and Flap, 1988; Lin, 1999;; Lin et al, 1981). Recently, some economists, like Becker (1996), Dasgupta (2000) or Ostrom (2000), have started to integrate the concept of social capital in their analysis although others show more reluctance, in particular with respect to its equivalence with traditional definitions of capital (Solow, 1997; Sobel, 2002). Social capital appears to have better acceptance among economists that study local development (see Knack, 2001; Knack and Keefer, 1997; Woolcock, 1998). The concept of social capital has been increasingly applied by different disciplines, with the exception of some studies on immigrants and minority groups or more theoretical analyses like Westlund and Bolton (2003), the relationship between social capital and entrepreneurship has not received extensive attention.

Social capital could be defined, following Bourdieu, as the resources derived from the actors' possession of a durable network of relationships mutual acquaintance and recognition (1986: 248). According to Coleman

⁶ Jacobs (1961) and Loury (1977) provide initial work on social capital. For more information, see Porters and Landolt (1996).

⁷ Portes and Landolt (1996) and Sobel (2002) offer a critical view on Putnam's concept of social capital. Hardin (1999) offers a distinction between the approach to social capital by sociologists and political scientists. The sociological view, especially Coleman, focuses on how social capital facilitates social action, while political scientists focus on how social action facilitates institutional and governmental development.

(1990), it has a mixture of elements of the system of relationships of the individual – belongings, contract and interactions – and institutional system – socialization, norms, reciprocity and expectations. It is useful for the instrumental action under certain conditions and contexts that share the same values and recompenses. According to Bourdieu, it goes beyond the effect of social origins and education. Then, we can expect an effect of social capital in addition to that of social origin and human capital –education.

The different approaches to the concept of social capital indicate its similarities and differences with other forms of capital – financial and human. Social capital could facilitate the management of information, helping individuals to achieve objectives, that otherwise would not have been achieved, and offering them a system of recognition that links individuals to groups and helps individuals to be integrated by fulfilling group expectations.

2.2 Formal and informal social capital

Recent debates on the concept of social capital (Pichler and Wallace, 2007) claim for distinguishing formal and informal aspects. Formal social capital would be defined by formal participation in civic organizations (Putnam, 1995; Schofer and Fourcade-Gourinchas, 2001), while informal social capital would be defined by social relationship that individual establish with family, friends, colleagues, neighbours, etc. Pichler y Wallace (2007) show evidence that these two dimensions of social capital are related to each other by accumulation and substitution that changes across countries. Then, Nordic countries show high levels of both formal and informal social capital. Southern countries seem to compensate low levels of formal social capital with high levels of informal social capital, while contrary case appears to happen in Eastern European countries⁸. Because this different behaviour between formal and informal aspects of social capital and country variations, we distinguish between formal and informal aspects of social capital aiming at increasing understanding of different aspects of social capital in Europe.

Empirical evidence suggests that human capital – educational attainment – is positively correlated with formal social capital (Putnam, 1995; Bekkers, 2005; Gesthuizen, 2006). However, the sign of the relationship between human capital and informal social capital is not clear (Scheepers and Janssen, 2003 and Gesthuizen et al., 2008). Some authors find a negative correlation between educational attainment and contacts with family but not with friends (Scheepers et al., 2002; Kaariainen and Lehtonen, 2006). However, other studies find that more educated people tend to have more frequent contacts with both, family and friends (Van Oorschot and Arts, 2005). For this reason, we will analyse the impact of these two types of capital on entrepreneurship jointly, while disentangling the respective effect.

Recent evidence on the different effects of formal and informal aspects of social capital indicates the necessity of analysing separately the effects of these two components of social capital on entrepreneurship.

2.3 Entrepreneurship and social capital among women and immigrants

There is an expansion of self-employment in most OECD countries among groups where entrepreneurship was under-represented (e.g. women and immigrants). Females represent one of the fastest growing groups among self employed (Devine, 1994; Carrasco and Ejrnaes, 2003). Women show total and relative increases among the self-employed (Devine, 1994; Blanchflower, 2004, 2008).⁹ The rate of female business ownership is also rising in the US (Fairlie and Robb, 2009; Coleman and Robb, 2009). In many OECD countries immigrants show higher rates of self-employment than natives (OECD, 2010; Borjas, 1989).¹⁰ Many of these countries exhibited increased migration flows between 1998 and 2007 (OECD, 2010).¹¹ At the same time, immigrants from particular countries and backgrounds are more prone to entrepreneurship (Fairlie, 1999). The diversification of European labour market and expansion in minority entrepreneurship has increased the academic and policy interest in entrepreneurship among women and immigrants.

⁸ These country differences do not imply heterogeneous effects of formal and informal aspects of social capital on entrepreneurship.

⁹ The most abundant evidence refers, once again, to the US.

¹⁰ Especially in Belgium, France, Nordic countries, and particularly, in central and Eastern Europe (OECD, 2010).

¹¹ In the last decade, Australia, Austria, Canada, Iceland, Ireland, Luxembourg, Norway, Spain, Sweden, Switzerland, the Czech Republic and Italy showed important changes in their population from migration (OECD, 2010).

Women and immigrant entrepreneurs have specific characteristics.¹² Evidence from the US shows that average self-employed woman is older, more educated and more likely to be married than average employed women (Devine, 1994).¹³ Women and men appear to enter into self-employment for different reasons. Female entrepreneurship tends to be more influenced by personal characteristics like family size, marital status and ages of children than men (Carr, 1996). Male seem to pursue entrepreneurship looking for financial success and innovation more than women do (Carter et al., 2003). Immigrant entrepreneurs also possess distinctive features. Many studies show the importance of family characteristics favouring or delaying entrepreneurship among immigrants (Sanders and Nee, 1996). Immigrant self-employment has been a significant opportunity for social mobility (Raijman, 2001). Other specific factors specifically affecting immigrants, like time spent in the country, also affect entrepreneurship and seem to delay the intentions to become entrepreneurs (Borjas, 1986). Socio-cultural and family features seem to have an important role explaining entrepreneurship among women and immigrants.

Financial and human capitals are also important factors explaining entrepreneurship among women and immigrants. Devine (1994), using US data, shows that women and men self-employed are more educated than wage and salary workers. Cowling and Taylor (2001) find that women entrepreneurs are better educated than men entrepreneurs. However, educated immigrants are less likely to become an entrepreneur (Toussaint-Comeau, 2005). Women have less start-up capital and less prior work experience in a family business (Coleman and Robb, 2009). Immigrants use family and ethnical networks to get human and financial resources (Loewen, 1971; Sanders and Nee, 1996). Evidence, coming mainly from North America, on the differential effect of human and financial capital on entrepreneurship among women and immigrants shows the importance of checking the effect of these factors in these populations in Europe. Lack of opportunities for wage employment and need of flexibility appear to be important determinants of self-employment among women and immigrants (Evans and Leighton 1989; Devine, 1994; Fairchild, 2009) Disadvantaged groups facing problems accessing to labour market may use self-employment as an alternative to unemployment or rigid labour markets (Carrasco Ejrnaes, 2003). Studies among immigrants and women indicate that they tend to use formal and informal social networks to overcome disadvantages.

Socio-cultural and family factors have an important role explaining entrepreneurship among women and immigrants. They appear to opt for self-employment as a way to overcome their difficulties in accessing to the salary labour market. They seem to rely on formal and informal social capital to overcome difficulties. Because women and immigrants share difficulties accessing labour market and face specific constrains, we can expect that formal and informal social capital have a different effect on their entrepreneurship.

¹² Some studies that include women in their estimates of the determinants of self-employment are McPherson (1988), Boden (1996), Dunn and Holtz-Eakin (2000), Williams (2000) and Cowling and Taylor (2001).

¹³ Women self-employed alto tend to have a "spouse present to be covered by someone else's health care policy, to be in a managerial or administrative occupation, and to work either a relatively small number of hours or a relatively large number of hours per week than the average wage and salary woman. She also was less likely to be black labour as likely to have young children and, if married, more likely to have a self-employed husband. And she earned less money" (Devine, 1994).

3. Hypotheses

In this section we test basically three hypotheses. Firstly, we want to determine if social capital plays a role in determining entrepreneurship that is both significant and distinguishable from other forms of capital – financial and human. Secondly, we expect formal and informal social capital to play different roles in determining entrepreneurship. Individuals with more formal social capital are more integrated in society they live in and thus have more access to employment opportunities. Finally, we expect different forms of social capital to have differentiated impact in explaining entrepreneurship among particular sub-groups such as women and immigrants.

Summarising:

- H₁ – Social capital has a significant effect on entrepreneurial activity, distinguishable from other forms of capital (financial and human).
- H₂ – Social capital has a differentiated impact on entrepreneurship according to if its formal or informal aspects are considered.
- H₃ – The effect of formal and informal social capital on entrepreneurship is different for women and immigrants.

4. Data and methodology

4.1 Data and sample

We use data from the European and World Values Surveys Four-wave Integrated Data File. It contains data from 60 different countries for the 4 most recent waves (1981-1984, 1990-1993, 1995-1997, and 1999-2004). In addition to more traditional demographic information, such as age, sex, occupation, education, family income, size of the household, topics covered include personal opinion and behaviour with respect to a number of personal, family, ethical, political, social and religious issues. We focus our analysis on the 27 countries that currently belong to the European Union. For comparison purposes, we briefly discuss also evidence for the US and Japan, for which we report the most relevant descriptive statistics in the appendix. After selecting the sample of countries and variables and due to changes in the questionnaire across rounds, we estimate our model based on the most recent wave of the EVS and WVS (1999-2004) with a sample of 13,670 workers between 18 and 64 years old.

4.2 Variables

We use self-employment as a dependent variable and proxy for *entrepreneurship*.¹⁴ From the eight categories of the question on employment status we select the three referring to those active on the labour market and we transform this variable into a dummy taking the value 1 for the self-employed and 0 for employees (both full time and part time).

The central independent variables in our analysis are *formal social capital* and *informal social capital*. *Formal social capital* includes a set of questions on 'belonging' to one or more of fifteen different voluntary organizations, ranging from social services to professional organizations (see appendix, table A.1 for a detailed list of voluntary organizations).¹⁵ *Informal social capital* is constructed to two questions on the frequency of contacts with family and friends.¹⁶ Both questions have four possible answers that we transform into dummies,

¹⁴ Other frequently used proxies for entrepreneurship include business ownership, self-employment, the number of small and medium enterprises, unincorporated businesses, owners-managers, and so on. For a detailed discussion, see Verheul et al. (2002). From a theoretical point of view, entrepreneurship could be seen as an even broader concept; according to Casson (2003), given that the discretionality of decisions within firms is not an exclusive prerogative of owners/managers, many employees should be considered as entrepreneurs in their own right.

¹⁵ The questionnaire also includes a question on 'active / inactive membership'. However, this variable was not included in the wave EVS-WVS 1999-2004 and, therefore, was not incorporated in the analysis. The results are robust to alternative specifications of formal social capital, namely the inclusion of 'voluntary work' for the organisations mentioned in the construction of the variable.

¹⁶ Contrary to other surveys focusing on European countries, such as the Eurobarometer, the EVS includes questions on the frequency of contacts with family and friends. Contacts with colleagues from work have not been considered in the final presentation of the results, in order to avoid the risk of introducing a bias due to a

where 1 stands for frequent (weekly) meetings and 0 for infrequent contacts (once or twice a month, only a few times a year or no contact at all). If either dummy is equal to 1, we consider the individual as being endowed with informal social capital. We use this restrictive definition of informal social capital in order to enhance the reliability of our results. In other words, low frequency of contacts reduces the effect of informal social capital¹⁷

Other important independent variables are *human capital* and *financial capital*. *Human capital* recodes in a harmonised way the highest education level attained (lower, middle and upper). We have used other variables on education attainment, like a continuous variable that answers the question on the age of completion of full time education or the re-codification of the same variable into an ordinal one with 10 categories, ranging from 12 years to more than 21 years. The results are consistent across educational variables. Due to the slightly greater availability of observations and for expositive purposes (3 categories only), we present the analysis using the 3-categories variable. *Financial capital* is proxied by a scale of incomes. It is a categorical variable with three categories (low, medium and high). Other information on financial assets (e.g. own or parental wealth) is not available in the questionnaire.

We also include the following independent variables: *sex* (1 for females and 0 for males), *age*, *age squared*, *marriage* (1 for married and 0 for unmarried) and *children* (1 is with children and 0 without children). We have also checked the effect of other variables like *risk aversion*, *happiness*, *satisfaction*, *financial satisfaction*, *city size*. We present the results of descriptive statistics on these variables in next section.

4.3. The model

The dependent variable, being self-employed, is binary and can be formalized as follows:

$$E_i = \begin{cases} 1 & \text{if the individual is self - employed} \\ 0 & \text{otherwise} \end{cases} \quad (1)$$

To explain it, we use a logit model¹⁸:

$$p_i = \Pr[E_i = 1|X_i] = \frac{\exp(\beta_0 + \beta_1 X_i)}{1 + \exp(\beta_0 + \beta_1 X_i)} \quad (2)$$

where X_i is the set of explanatory variables. Self-employment among women and immigrants is further estimated both through separate equations (Eq. 3 and 4) and within a single equation (Eq. 5) with dummy variables. Estimating separate equations assumes that the relationship between entrepreneurship and the explanatory variables is different for men and women, immigrants and non-immigrants:

$$p_i = \Pr[E_i = 1|X_i] = \frac{\exp(\beta_0 + \beta_1 X_i)}{1 + \exp(\beta_0 + \beta_1 X_i)} \quad \text{if } k = 0 \quad (3)$$

$$p_i = \Pr[E_i = 1|X_i] = \frac{\exp(\gamma_0 + \gamma_1 X_i)}{1 + \exp(\gamma_0 + \gamma_1 X_i)} \quad \text{if } k = 1 \quad (4)$$

where $k =$ women, immigrant. The use of a single equation with dummy variables allows pinpointing the elements that differentiate female and immigrant entrepreneurship:

$$p_i = \Pr[E_i = 1|X_i] = \frac{\exp(\beta_0 + \beta_1 X_i + \alpha_0 D_{ki} + \alpha_1 X_i D_{ki})}{1 + \exp(\beta_0 + \beta_1 X_i + \alpha_0 D_{ki} + \alpha_1 X_i D_{ki})} \quad (5)$$

different distribution of these contacts among the self-employed and the employees. We have nevertheless checked that the results are robust to the inclusion of contacts with colleagues.

¹⁷ The inclusion of the frequencies 'once or twice a month' and 'few times a year' greatly increases the number of observations for informal social capital diluting the effect of 'frequent' contacts.

¹⁸ Having logit and probit models the same qualitative results, we use the logit model for the higher availability of post-estimations commands in Stata (Long and Freese, 2006).

In these equations, $\gamma_0 = \alpha_0 + \beta_0$ and $\gamma_1 = \alpha_1 + \beta_1$.

5. Results

The presentation of results includes descriptive statistics and analysis based on logit model specified in previous section. Descriptive statistics include characteristics of total sample, entrepreneurs and employees across explanatory and other variables that are usually discussed in the literature on entrepreneurship.

5.1 Descriptive statistics

Table 1 presents descriptive statistics for total sample, entrepreneurs and employees relative to a number of key dimensions, columns second, third and fourth respectively. Total sample has 13,670 observations, 1,154 of them are entrepreneurs and 12,516 are employees. Women represent a 45.8% of total sample in which the average respondent is 39.3 years old. A total of 64% of workers are married and 70.9% have children. Regarding human capital, 28% of the individuals included in the sample have a low level of education, 46.1% an intermediate level and 25.9% have achieved an upper level. The distribution of workers on the basis of their financial capital is as follows: 17.9% report low levels, 37.4% and 44.7% report middle and upper levels respectively. A total of 57.7% of workers belong to a voluntary organization and a 55.5% of the sample has frequent meetings with family and friends. Immigrants constitute around 3.7% of the sample.

If we compare the distribution of entrepreneurs and employees – third and fourth column- we can see that while women account for just about one third of entrepreneurs, they make up to nearly half the employees in our sample, 32.8% against 47%. The share of entrepreneurs that is married is higher than that of employees, 69.6% against 63.5%. Other demographic characteristics such as age and existence of an offspring do not vary much across the two categories, although entrepreneurs show higher figures than employees. Entrepreneurs are older and they have more children. The share of immigrants, though small in both cases, is less than half for the subsample of entrepreneurs than of employees, 1.8 against 3.9. When turning to differences in capital endowment (human, financial and social), entrepreneurs have a higher share of individuals with little human capital and a lower proportion medium and high level of education, 33.6 against 27.5 and 43.4 and 23 against 46.3 and 26.2 respectively. These results are in line with the findings of the literature on the negative correlation of education and entrepreneurship in Europe.¹⁹ As regards financial capital, entrepreneurs have a lower share of individuals with middle financial capital but a higher share for the other two categories, 33.5 against 37.7 and 20.5 and 46.1 against 17.7 and 44.6 respectively. As regards social capital, the share of individuals with formal social capital is lower for entrepreneurs than for employees, while the share of those possessing informal social capital is higher, 55.4% against 57.9 and 56.7% against 55.3% respectively. The average European entrepreneur is a male, middle aged, married with children and he is less educated, with either higher levels of low or upper financial capital and lower formal but higher informal social capital than the average employee.

Table 1 – Characteristics of total sample, entrepreneurs and employees (EU27) – Explanatory variables

<i>Variable</i>	<i>Total</i>	<i>Entrepreneurs</i>	<i>Employees</i>
Women (%)	45.8	32.8	47.0
Average age	39.3	41.5	39.1
Married (%)	64.0	69.6	63.5
With children (%)	70.9	72.9	70.7
Immigrant (%)	3.7	1.8	3.9
Distribution by level of human capital (%)			
Low	28.0	33.6	27.5
Middle	46.1	43.4	46.3
Upper	25.9	23.0	26.2

¹⁹ We have also calculated the same descriptive statistics for the US and Japan. We will not discuss all the differences in detail here. What is interesting to note is that, consistently with the literature, in the US higher levels of educational attainment are correlated with higher rates of entrepreneurship. Figures for Japan are instead more similar to the ones for the EU. (see Table A.2 in the Appendix)

Distribution by level of financial capital (%)			
Low	17.9	20.5	17.7
Middle	37.4	33.5	37.7
Upper	44.7	46.1	44.6
With formal social capital (%)	57.7	55.4	57.9
With informal social capital (%)	55.5	56.7	55.3
Number of observations	13,670	1,154	12,516

Table 2 displays further descriptive statistics for a number of variables that are sometimes considered in the literature on entrepreneurship as explanatory variables (see Verheul et al., 2002 for an overview). A first dimension is risk aversion: it is considered that if an individual is risk-averse, she could be less prone to becoming entrepreneur. Data seem to support this idea with 29.2% of entrepreneurs being risk averse against 31.5% of employees.²⁰ A second dimension is satisfaction with one's current condition. Despite working longer hours, the self-employed usually report higher levels of satisfaction with their working life (Blanchflower, 2004). This seems to be reflected only in part in the data, with only a slight margin of happy and satisfied (both with life and financial situation) individuals among entrepreneurs over employees; 85.8%, 7.2% and 6.8% against 85.5%, 7.1% and 6.4% respectively.²¹ A last dimension concerns the potential role of cities as creative hubs for entrepreneurs (Florida, 2002). The share of people living in small towns (up to 10,000 inhabitants) is higher among the entrepreneurs than among employees, probably due to the presence of many self-employed in the agricultural sector. For big towns and mid-sized cities the relation is reversed until the share of people living in big cities (500,000 inhabitants and more) is considered. Big cities' share of entrepreneurs is indeed greater than their share for employees, 16.5% against 15.1%. Entrepreneurs tend to be less risk averse, happier and more satisfied both with their lives and their financial situation than employees and they tend to live either in small or big cities.

Table 2 – Characteristics of entrepreneurs and employees (EU27) – Other variables

<i>Variable</i>	<i>Total</i>	<i>Entrepreneurs</i>	<i>Employees</i>
Risk averse (%)	31.2	29.2	31.5
Happy (%)	85.8	85.8	85.5
Average satisfaction (1 to 10 scale)	7.1	7.2	7.1
Average financial satisfaction (1 to 10 scale)	6.4	6.8	6.4
Distribution by city size			
2,000 and less	15.2	19.3	14.8
2,000-5,000	8.7	10.0	8.6
5,000-10,000	9.9	11.2	9.7
10,000-20,000	10.7	10.4	10.8
20,000-50,000	14.3	11.6	14.8
50,000-100,000	11.1	9.0	11.3
100,000-500,000	14.69	12.0	15.2
500,000 and more	15.2	16.5	15.1
Number of observations	13,670	1,154	12,516

²⁰ The number of observations for which we have information on risk aversion is very limited, though.

²¹ The number of observations for financial satisfaction is very limited.

Table 3 shows the characteristics of the explanatory variables for women and immigrants and a comparison of these values with the ones for men and non-immigrant. Women and immigrant present lower levels of entrepreneurship compared to men and non-immigrants respectively, both groups show a very significant difference of about 4 perceptual points. The average percentage of self-employment is 8.4, but it decreases till 6.0% and 4.1% for women and immigrants respectively. The low levels of entrepreneurship among women and immigrants indicate that to explain entrepreneurship among these groups is a subject that deserves further attention.

Table 3 also indicates other important differences of women and immigrants. They are significantly younger than men and non-immigrants, with a difference of 0.6 and 1.2 percentage points respectively. The percentage of married women and immigrant is lower, with a difference of 5.1 and 3.1 percentage points respectively, being significant only the difference for women. A significantly higher percentage of women have children. Women and immigrant are less educated than men and non-immigrants, with very significant differences for lower and upper levels of education. The difference of education for women is more important for upper levels of education, where women present a difference of 5.4 percentage points less than men. The differences in education for immigrants are distributed across all levels of education. Immigrants show higher levels of low education but lower levels of upper levels of education, with 3.4 and 4.1 percentage points respectively. Women tend to show lower levels of financial capital than men. The differences in the distribution of financial capital for women are significant for low and average levels of financial capital, with -2.0 and 2.1 percentage points of difference respectively. Immigrants have also less financial capital than non-immigrants. However, the distribution of financial capital for immigrant is more uneven, showing significant higher percentages for low level and lower percentage for upper levels compared with the one of non-immigrants. Women and immigrants show lower levels of formal and informal social capital. Women present significant lower levels of both formal and informal social capital than men, with 3.1 and 4.1 percentage points respectively. Immigrants present lower levels for both capitals, being significant only the difference of formal social capital with 7.0 percentage points of difference with non-immigrants. Women and immigrant tend to be less entrepreneurial, younger and with lower levels of human, financial and social capital than men and non-immigrants respectively.

Descriptive statistics show that the average entrepreneur is a middle-aged male, with children and less educated, with less tendency to have middle levels of financial capital, lower formal but higher informal social capital than average employee. Entrepreneurs tend to be less risk averse, happier and more satisfied with both their lives and their financial situation than employees and they do not live in middle cities. Women and immigrant show lower levels of entrepreneurship, they are younger and with lower levels of human, financial and social capital than men and non-immigrants respectively.

Table 3 – Comparison of characteristic for women and immigrants (EU27)

<i>Variable</i>	<i>Total</i>	<i>Men</i>	<i>Women</i>	<i>Mean Comparison</i>	<i>Non-Immigrants</i>	<i>Immigrants</i>	<i>Mean Comparison</i>
Number of observation	13,670	7,409	6,261		12,754	491	
Number of entrepreneurs	1154	776	378		1,082	20	
Entrepreneurs (%)	8.4	10.5	6.0	4.5***	8.5	4.1	4.4***
Average age	39.3	39.6	39.0	0.6***	39.4	38.2	1.2**
Married (%)	64.0	66.4	61.3	5.1***	64.2	61.1	3.1
With children (%)	70.9	68.7	73.5	-4.8***	71.4	71.1	0.3
Human capital							
Low (%)	2.1	2.5	1.5	1.0***	1.7	5.1	-3.4***
Average (%)	11.8	12.1	11.6	0.5	11.2	13.4	-2.2
Upper (%)	14.1	16.6	11.2	5.4***	14.5	10.4	4.1**
Financial capital							
Low (%)	17.9	17.0	19.0	-2.0***	17.8	27.5	-9.7***
Average (%)	37.4	38.3	36.2	2.1**	37.0	36.5	0.5
Upper (%)	44.7	44.7	44.7	-0.0	45.3	36.1	9.2***
Social capital							
Formal (%)	57.7	59.1	56.0	3.1***	58.4	51.3	7.0***
Informal (%)	55.5	57.2	53.3	4.1***	54.6	54.4	0.2

*** p<0.01, ** p<0.05, * p<0.1

5.2 Analysis

Table 4 displays the results of the econometric analysis, showing marginal effects from the logit regression. We report three sets of results corresponding to the estimation strategy presented in section 4.3. Estimation (i) yields results for the total sample, while estimations (ii) and (iii) present results for women - and estimations (iv) and (v) present results for Immigrants. Regression (ii) thus shows results for men as a baseline on one side (the α coefficients) and the differential impact of exogenous characteristics for women (β) on the other. Regression (iv) does the same for immigrants. Coefficients in (iii) and (v) correspond to the regression output from estimating a separate equation for women and immigrants respectively.²²

Results of the first estimation (i) show that sex has a very significant and positive effect. This indicates that being a man increases the likelihood of being an entrepreneur. The effect of age on entrepreneurship follows an inverted U-shaped curve. This indicates that the probability of being an entrepreneur increases with age to a certain point in which starts to decrease. The effect of marriage is also positive and very significant, while the coefficient associated to the variable 'children' is negative and very significant. The effects of sex, age and marriage on entrepreneurship are in line with the literature.

Financial capital has a very significant effect and follows a U-shaped curve. This means that it is more probable to find entrepreneurs with low or high levels of financial capital, compared with middle level of financial capital. This could indicate that low levels of financial capital may work as an incentive to become an entrepreneur, in the same way as high levels of financial capital may help the development of an entrepreneurial activity. This could point to the existence of two different types of entrepreneurs, entrepreneurs out of necessity (those with low financial capital) and entrepreneurs out of opportunity (with high financial capital).

Human capital has a negative and significant effect. It is less likely to find entrepreneurs with middle or high level of education, compared to low level of education. Middle level of human capital and high level of human capital show negative and significant and very significant, respectively, levels compared to low levels of human capital. These results are consistent with the literature on the effect of education on entrepreneurship in Europe, which consistently finds an opposite sign with respect to that for the US.²³

²² Regressions (ii) and (iv) correspond to estimating the γ 's in equation (5) in Section 4.3. Coefficients in (iii) and (v) would correspond, in principle, to estimating equations (4) of Section 4.3 for women and immigrants, respectively. This would have reduced the number of observations considerably, especially in the case of immigrants. We used instead the regression output from (ii) and (iv) to estimate γ as a linear combination of the marginal effects associated to α and β , thus relying on the same number of observations as for regressions (ii) and (iv). Estimating γ using separate regressions yields qualitatively similar results.

²³ This result is robust with respect to the alternative definitions of human capital presented in Section 3.

Table 4 – Regression results for entrepreneurship (EU27): Logit model (Marginal Effects)

VARIABLES	Total					Women					Immigrants				
	(i)	(ii)	(iii)	(iv)	(v)	(i)	(ii)	(iii)	(iv)	(v)	(i)	(ii)	(iii)	(iv)	(v)
	Self-employment	Men (β)	Women Dummy (α)	Women ($\gamma = \alpha + \beta$)	Non – Immigrants (β)	Immigrants Dummy (α)	Immigrants ($\gamma = \alpha + \beta$)								
Sex	-0.0403*** (0.00470)	0.0439 (0.06429)			-0.0414*** (0.00471)						-0.0073 (0.03524)				
Age	0.0051*** (0.00162)	0.0062*** (0.00202)	-0.0032 (0.00341)	0.0030 (0.00275)	0.0046*** (0.00162)	-0.0023 (0.00281)									
Age squared	-0.0000** (0.00002)	-0.0001** (0.00002)	0.0000 (0.00004)	-0.0000 (0.00003)	-0.0000* (0.00002)	0.0000 (0.00004)									
Marriage	0.0180*** (0.00628)	0.0143* (0.00819)	0.0057 (0.01298)	0.0200** (0.01005)	0.0176*** (0.00633)	-0.0688* (0.03840)									
Children	-0.0213*** (0.00685)	-0.0218** (0.00867)	0.0040 (0.01440)	-0.0179 (0.01148)	-0.0184*** (0.00686)	0.0107 (0.05666)									
Human Capital (Middle)	-0.0121** (0.00528)	-0.0072 (0.00645)	-0.0146 (0.01122)	-0.0218** (0.00916)	-0.0125** (0.00529)	-0.0160 (0.04064)									
Human Capital (Upper)	-0.0202*** (0.00648)	-0.0149* (0.00795)	-0.0169 (0.01361)	-0.0318*** (0.01102)	-0.0190*** (0.00650)	0.0560 (0.04250)									
Financial Capital (Low)	0.0230*** (0.00648)	0.0306*** (0.00793)	-0.0225 (0.01388)	0.0081 (0.01136)	0.0258*** (0.00648)	-0.0594 (0.04530)									
Financial Capital (Upper)	0.0147*** (0.00533)	0.0164** (0.00651)	-0.0056 (0.01132)	0.0109 (0.00925)	0.0144*** (0.00538)	-0.0121 (0.03397)									
Formal Social Capital	-0.0098** (0.00460)	-0.0161*** (0.00563)	0.0195** (0.00974)	0.0034 (0.00795)	-0.0106** (0.00463)	0.0587* (0.03296)									
Informal Social Capital	0.0123*** (0.00475)	0.0150** (0.00594)	-0.0081 (0.00991)	0.0069 (0.00792)	0.0113** (0.00476)	0.0034 (0.03269)									
Constant	-0.2892*** (0.03103)	-0.3183*** (0.03954)			-0.2736*** (0.03109)										
Observations	13,670		13,670								13,245				

Standard errors in parenthesis. *** p<0.01, ** p<0.05, * p<0.1

Social capital has a significant effect on entrepreneurship, even when conditioning on other types of capital - financial and human - and, consistently with our hypotheses, the effect of social capital is different between different types of social capital. Formal social capital has a negative and significant effect. As it is the case of education, formal bonds seem to inhibit entrepreneurship. Contrary to formal social capital, informal social capital has a positive and very significant effect on entrepreneurship. This could indicate that informal social capital is more important than the formal one in stimulating the development of an entrepreneurial activity. In addition, it could indicate that, in Europe, individuals with more education have also more formal networks that allow them to access other job alternatives to self-employment. Finally, it could also indicate that individuals with more informal social capital are more entrepreneurial than other people.

Regarding the situation of women and immigrants (estimations (ii) and (iii) and estimations (iv) and (v), respectively), social capital is the only variable that distinguishes the way entrepreneurship is characterised in these groups. Contrary to the general specification of the model, formal social capital has a positive and significant differential effect for both women and immigrants. This means that although formal social capital retains a negative effect on entrepreneurship for men and non-immigrants it plays a positive effect for the groups of women and immigrants. Contrary to the general situation and the one for women, marriage has a negative effect on entrepreneurship among immigrants. The coefficients in (iii) and (v), obtained as if they were estimated in separate equations for women and immigrants, yield significant results just for the human capital and marriage variable in the case of women. This means that education negatively affects entrepreneurship among women (and that this effect is stronger for women than for men), whereas marriage positively affects female entrepreneurship. In the case of immigrants, we can not find significant results. In both cases, results are the same when estimating separate regressions. Independently of the specification used, the lower numbers of female and immigrant entrepreneurs are likely to affect the results. This does not exclude the possibility that the variables affecting entrepreneurship among women and immigrants be of a different nature than those playing an important role for native males. In summary, what distinguishes women and immigrant entrepreneurs is the positive and differential effect of formal social capital.

This different effect of formal social capital for women and immigrants could indicate that in order to become entrepreneurs, women and immigrants would benefit from a greater integration within formal social networks and organizations. It could also reveal the prevalence of entrepreneurs out of need among women and immigrants, given that the same level of education does not provide them with access to other job alternatives other than self-employment.

Table 5 presents results of the prediction capacities of the specifications used. Out of a total of 1154 entrepreneurs 697 are correctly identified as entrepreneurs in specification (i), this represents the 60.4% of entrepreneurs. This rate tends to stay constant around 60% across specifications (i), (ii), (iv). In the case of women, specification (ii) allows classifying 51 out of 378 female entrepreneurs, representing a 13.5%. In the case of immigrants, specification (iv) shows that 2 out of 20 immigrant entrepreneurs are correctly classified, this represents 10% of the immigrant entrepreneurs. These results confirm the intuition emerging from the previous analysis of regression results, in particular specifications (iii) and (v). While doing a good job in explaining entrepreneurship for the overall sample, the exogenous variables considered perform poorly for special minorities within the active population.²⁴

Table 5- Prediction Capacities of the Models – EU27

	<i>Entrepreneurs</i>			
	Sample total	Identified	Non-identified	Potential*
Specification (i)	1154	697	457	5341
	100.0%	60.4%	39.6%	39.1%
Specification (ii)	1154	685	469	5039
	100.0%	59.4%	40.6%	36.9%
Women	378	51	327	473
	100.0%	13.5%	86.5%	7.6%
Specification (iv)	1154	714	440	5412
	100.0%	61.9%	38.1%	40.9%
Immigrants	20	2	18	44
	100.0%	10.0%	90.0%	9.0%

²⁴ Goodness of fit was also assessed by means of the usual Akaike and Bayesian Information Criteria, as well as log likelihood, with no major differences across the three specifications.

* The percentages indicated in this column refer to the total of the corresponding population (total number of individuals, of women and of immigrants).

The last column in Table 5, potential entrepreneurs, reports the number of individuals in the sample that would be predicted as being entrepreneurs by the model, but are not so. If we were to look at the sample of active individuals and pick those with characteristics similar to those that allow us to correctly pinpoint about 60% of all entrepreneurs, we would end up selecting up to two fifths of all the individuals. All the reservations on the predictive power of the model considered notwithstanding, this still suggests the existence of an ample basin of active individuals with characteristics usually associated to entrepreneurs. The low percentages for women and immigrants do not have to be interpreted as a lack of potential entrepreneurs in these categories, given the limited explanatory power of the model considered. This only reinforces the need for designing models aimed at capturing the specific characteristics of female and immigrant entrepreneurs.

Our analysis highlighted several important features. The effect of sex, age and marriage are in line with the literature, finding that entrepreneurs tend to be a married male. The effects of age and financial capital follow a U-shaped curve. We also confirm that education negatively affects entrepreneurship in Europe. Regarding social capital we ratify our hypothesis of a distinctive effect of social capital, compared to other types of capital, and with a different effect across forms of social capital. This significant effect of social capital is also ratified when analysing female and immigrant entrepreneurship, finding that social capital is the only variable that distinguishes the way entrepreneurship is characterised in these group. Contrary to the general specification of the model, formal social capital has a positive and significant differential effect for both female and immigrant entrepreneurs.

6. Conclusion

Our investigation of the rich information contained in the European Value Survey allowed us to replicate a number of stylised facts known from previous studies on entrepreneurship: men tend to be more prone to entrepreneurship than women; age facilitates entrepreneurship at early stages of working life but its decreases its positive effect at later stages; marriage has a positive effect on self-employment and children negatively affect entrepreneurship.

We find significant effects of human and financial capital. The negative effect of human capital on entrepreneurship confirms previous studies on the different effect of education in the US and Europe and highlights the need of studying more carefully the relation between human capital and entrepreneurship in Europe. Financial capital has a positive effect either at low or at high levels indicating that financial capital could foster entrepreneurship by incentivising and facilitating it, respectively. This could point to the existence of two types of entrepreneurs: out of necessity and out of opportunity.

Our analysis went further than existing studies, in order to pin down the contribution of social capital to entrepreneurship as distinctive from other forms of capital (financial and human). This effect is different depending on which aspect of social capital is considered: formal or informal. Formal social capital has a negative effect on entrepreneurship. In this sense, it acts similarly as in the case of education. On the contrary, informal social capital has a positive effect on entrepreneurship. This proves the importance of distinguishing the formal and informal components of social capital.

Further analysis shows that the effect of social capital is the only factor that distinguishes entrepreneurship among women and immigrants. Formal social capital has a positive and significant differential effect for women and immigrants. We also find a negative effect of marriage for immigrant entrepreneurs. This could indicate that women and immigrant would benefit from a greater integration within formal social networks in order to become entrepreneurs. More research will be needed to identify additional variables that explain female and immigrant entrepreneurship and to fully explore the mechanisms by which formal and informal relationships and networks influence entrepreneurship.

The negative effect of education on entrepreneurship in Europe, compared to the US, requires more policy attention. Provided that our analysis does not allow us to establish an optimal level of entrepreneurship for skilled individuals, policies aimed at encouraging entrepreneurship should be aware of the relatively low level of entrepreneurs with an upper level of educational attainment. This could be achieved, for instance, through targeted interventions on European educational systems aimed at increasing the sensitivity with respect to an entrepreneurial career. The low levels of entrepreneurship among women and immigrants also deserve policy attention. The positive role of formal social capital in explaining entrepreneurship among women and

immigrants, as opposed to its negative effect for the rest of the working population, points to the possible existence of entry barriers. The higher endowment of formal social capital associated to female and immigrant entrepreneurs would thus be an indicator that women and immigrants cannot start an entrepreneurial activity unless they accumulate enough formal social relations. In order to identify barriers to entrepreneurship for women and immigrants, it will also be necessary to include into the analysis the role played by different regulatory regimes (e.g. the type of requirements necessary to start a business , the importance of part-time employment, benefits and child care policies).

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Appendix

Table A.1. Components of formal social capital.

	<i>FORMAL SOCIAL CAPITAL (BELONGING)</i>
	BELONGING Please look carefully at the following list of voluntary organisations and activities and say...which, if any, do you belong to?
a064	Social welfare services for elderly, handicapped or deprived people
a065	Religious or church organisations
a066	Education, arts, music or cultural activities
a067	Labour unions
a068	Political parties or groups
a069	Local community action on issues like poverty, employment, housing, racial equality
a070	Third world development or human rights
a071	Conservation, environment, animal rights groups
a072	Professional associations
a073	Youth work (e.g. scouts, guides, youth clubs etc.)
a074	Sports or recreation
a075	Women's groups
a076	Peace movement
a077	Voluntary organisations concerned with health
a079	Other groups

Table A.2.– Share of entrepreneurs – Core explanatory variables

<i>Variable</i>	<i>Entrepreneurs (%)</i>		
	EU 27	US	Japan
<i>Gender</i>			
Males	10.5	6.8	16.2
Females	6.0	6.8	17.9
<i>Age Class</i>			
18-24	4.0	3.0	3.8
25-34	7.8	5.9	7.3
35-44	8.9	7.8	20.1
45-54	8.5	7.3	15.5
55-64	12.9	11.8	35.4
<i>Civil status</i>			
Married	7.1	7.0	9.3
Not married	9.2	6.6	19.7
<i>Children</i>			
No	7.9	6.0	8.4
Yes	8.7	7.2	20.2
<i>Nationality</i>			
Citizen of country	8.5	n.a.	n.a.
Foreigner	4.1	n.a.	n.a.
<i>Education</i>			
Lower	10.1	4.7	29.8
Middle	8.0	4.9	19.6
Upper	7.5	8.5	10.6
<i>Financial capital</i>			
Low	9.6	5.8	21.8
Medium	7.6	5.5	16.1
High	8.7	9.4	13.9
<i>Formal social capital</i>			
Yes	8.1	2.8	14.4
No	8.9	7.2	20.2
<i>Informal social capital</i>			
Yes	8.6	5.2	17.4
No	8.2	7.0	16.7
<i>TOTAL</i>	8.4	6.8	17.0

A.3. Notes on variables presented in Table 2 and description thereof

For non-significant variables (i.e. those excluded from the final regression presented in the text) the number of observation is slightly lower (around 13,000). For "attitude towards risk" and "financial satisfaction" variables the sample size becomes very narrow (a few hundreds) and thus results have to be interpreted with caution. Below we provide a definition these variables.

Risk aversion

Question c009 - First choice, if looking for a job:

Now I would like to ask you something about the things which would seem to you, personally, most important if you were looking for a job. Here are some of the things many people take into account in relation to their work. Regardless of whether you're actually looking for a job, which one would you, personally, place first if you were looking for a job?

Possible answers:²⁵ "A good income", "A safe job with no risk", "Working with people you like", "Doing an important job", "Do something for community". People answering "A safe job with no risk" are considered as being risk averse.

Happiness

Question a008 - Feeling of happiness

Taking all things together, would you say you are: [READ OUT]

Possible answers: "Very happy", "Quite happy", "Not very happy", "Not at all happy". People answering "Very happy" or "Quite happy" are considered as being happy.

Satisfaction

Question a170 - Satisfaction with your life

All things considered, how satisfied are you with your life as a whole these days? Please use this card to help with your answer.

Possible answers: 1 to 10 scale, with 1 being "Dissatisfied" and 10 "Satisfied".

Financial satisfaction

Question c006 - Satisfaction with financial situation of household

How satisfied are you with the financial situation of your household? If '1' means you are completely dissatisfied on this scale, and '10' means you are completely satisfied, where would you put your satisfaction with your household's financial situation?

Possible answers: 1 to 10 scale, with 1 being "Dissatisfied" and 10 "Satisfied".

²⁵ For the sake of brevity, in this section the list of possible answers does not include options such as "do not know" or "no answer". For the complete list of questions, see European Values Study Group and World Values Survey Association (2006b).