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To volunteer or not to volunteer?
A cross-country study of volunteering

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Abstract

This paper uses data from the 4th wave of the European Values Survey (EVS) to investigate the factors that influence the decision to participate in volunteering activities, considering both volunteering in general as well as volunteering in particular types of activities. Like previous studies we include several socioeconomic and demographic variables. However our study also includes attitudinal variables and country dummy variables that capture the impact of country specific factors. Our results show that there are significant differences across countries in the propensity for volunteering and that the determinants of volunteering are quite different for the various types of volunteering.

Keywords: Volunteer labor; European Values Survey; Nonprofit organizations;
JEL classification: D12; H41; L31

1 Introduction

At the first sight it may seem that working without being paid is not a rational behavior. However, this view does not take into account the fact that volunteering may provide other kinds of rewards. In Economics, the only rational explanation for doing a certain activity is that this activity brings more benefits than costs, opportunity cost included. As a consequence, if volunteering is a rational decision there must exist expected benefits from volunteering.

The benefits of volunteering may include: the personal satisfaction the individual gets from helping others; the feeling of being useful and needed; building network connections; increasing knowledge or skills which may be useful in the future; and the feeling of being important and publicly recognized. As long as the benefits from volunteering are above its costs, the individual utility increases if he/she volunteer, thus his/her optimal decision is to volunteer.

The aim of this article is to understand the factors that influence the decision to participate in volunteering activities. To achieve this objective we ran several logistic regressions where the explained variable is a dummy variable indicating whether the individual participated or not in volunteering activities. In a first regression we analyze the factors that influence volunteering in general. Latter on, we aggregate the volunteering activities in four major types of volunteering and ran separate regressions for each one of the volunteering types. Our empirical study uses data from the 4th wave of the European Values Survey covering 31 European countries.

Our literature survey led us to choose as potential determinants of volunteering three groups of variables: socioeconomic variables (income, education, employment status), demographic variables (age, square of age, gender, size of town, number of children in household, marital status) and attitudinal variables (level of satisfaction with life, level of choice and control, importance of religion). In addition, we introduce country dummy variables to control for the influence of country specific factors.

The major contributions of this article to the literature are the inclusion of attitudinal variables, the comparison among European countries and the study and comparison of the determinants for the various types of volunteering activities.

The article is organized as follows. In the next section we present our explanatory variables and their expected impact on volunteering. In section 3 we describe our data set. Section 4 presents the logistic regression for explaining the probability of participating in volunteering in general whereas section 5 presents the regressions for the various types of volunteering activities. The last section summarizes the main conclusions of the paper.

2 The determinants of volunteering – a literature review

Researchers from different fields of social sciences have studied the influence of individual demographic, socioeconomic and personality characteristics on volunteering (for an overview, see for

instance, Wilson, 2000). Wilson (2000) concludes that there is considerable evidence showing that age, gender, educational attainment, household income, and the breadth of an individual's social network are predictors of volunteering.

In the former studies, the level of education is the most consistent predictor of volunteering (McPherson and Rotolo, 1996; Sundeen and Raskoff, 1994). "Education boosts volunteering because it heightens awareness of problems, increases empathy, and builds self-confidence" (Brady *et al.,* 1995; Rosenthal *et al.,* 1998). Considering this issue Bandura (1997) developed a cognitive theory of personality that centers around the idea of self-efficacy. Self-efficacy is a belief that we are capable of executing and attaining certain goals, whether or not we have the skills to do so. People high in self-efficacy would believe that they are able to succeed in whatever they put their minds to. They are more willing to take on challenges that may provide them with an opportunity to develop new skills, and they spend a great deal of energy, time, and persistence in completing their goals. The type of education might be a determinant to increase this self-efficacy. Educated people have the opportunity to belong to more organizations where they develop more civic skills, for instance, how to run the meetings (Herzog and Morgan, 1993). In addition, they are also more likely to be asked to volunteer (Brady *et al.*, 1999).

Regarding the employment status one expects that the investment motive for volunteering to be relatively more important for students as they are in the process of "accumulation of labor market qualifications" (Ziemek, 2003). On the contrary, retired individuals ought to be less investment motive oriented but more altruistic and private consumption motivated. For instance, the German volunteer survey found that retired volunteers are predominately engaged in the volunteering activities related to recreation, church, leisure, culture and music.

Another important determinant of volunteering is the income level. Here one can identify many different findings which depend on whether one is analyzing the impact on the participation decision or the impact on the number of hours of voluntary work. Wolff *et al.* (1993) assume that, through the opportunity costs, volunteer hours are inversely related to wages. Menchik and Weisbrod (1987) indicate that volunteer work is positively related to income. Clary *et al.* (1996) argue that individuals with higher levels of income have different motivations to be volunteers and that they are not so driven by the investment motive. Prouteau and Wolff (2006) found that the volunteers have higher rather than smaller household income. Schady (2001) finds a positive correlation between income and volunteering. He defends that there is a connection

between income and the probability of being asked to do voluntary work. Schady (2001) showed that rich people are addressed to volunteer more frequently since they are expected to be more productive than people with lower income.

Considering the marital status, married people are more likely to volunteer than single people, although single people without children volunteer more hours (Sundeen, 1990; Freeman, 1997). In addition, Freeman (1997) showed that if one spouse volunteers, the chances are the other also does.

Having children in the household is both a constraint and an opportunity when it comes to volunteering. On the one hand, taking care and educating children is a demanding and time consuming activity, thus leaving less time for other activities such as volunteering. On the other hand, children are likely to be involved in sports and youth activities that are frequently associated with nonprofit organizations, increasing the probability of parents getting involved in related volunteering activities. The existent empirical evidence suggest that the effect of having children on volunteering is generally positive but it depends on the children's ages. The results obtained by Wuthnow (1998) show that parents are more likely to volunteer if they have children at home, but parents with young children volunteer fewer hours than parents with older children (Damico *et al.,* 1998; Menchik and Weisbrod, 1987; Schlozman *et al.,* 1994). The distinction between school-aged children and younger children is very important for volunteering. School-aged children forge social links to schools, sports organizations, and other youth-oriented nonprofit organizations. It is also likely that when children enter school, parents have more free time (Gora and Nemerowicz, 1985). Some studies conclude that women with children below 6 years of age often have constrains to be volunteers. The German volunteer survey studied by Zierau (2000) (quoted by Ziemek 2003), concludes that women with children below 3 years of age show the lowest representation in volunteer engagement. Individuals with school aged children have higher probability of being engaged with school-related activities and community oriented groups (Smith, 1994; Janoski and Wilson, 1995; Woodard, 1991).

The age of the individual is also a very important variable in the volunteering decision. People of different ages and generations have different perspectives on life, which may change their attitude towards volunteering. Most studies show that there exists an invert U relationship between age and volunteering. Volunteering rises to its peak in middle age (Herzog *et al.,* 1989; Menchik and Weisbrod, 1987) as people move from young adulthood to middle age, they

move out of self- and career-oriented activism into more community-oriented work (Janoski and Wilson, 1995).

Gender also influences the volunteering decision as well as the type of volunteering activities chosen. In Europe, there is no overall gender differences in the participation level: females volunteer less than males in some countries and more than males in others (Gaskin and Smith 1997; Hodgkinson and Weitzman, 1996; Hall *et al.,* 1998). Male volunteers prefer the recreational, job-related and political engagement volunteering activities while female volunteers prefer social services (Badelt and Hollerweger, 2001). Male prefer to volunteer in leadership positions of high public spending while women volunteer in small informal organizations (Ziemek 2003; Gaskin and Smith, 1997).

With respect to the place of living, rural environments are usually characterized by lack of public services and higher indices of poverty. Thus it is quite likely that there is higher need for volunteering activities in small towns than in larger ones. Wuthnow (1998) found that volunteers living in small towns emphasize solidarity benefits and norms of reciprocity while the volunteers in suburban environments emphasize self development.

Our study includes all the variables previously mentioned. In addition we include three attitudinal variables: the importance that the individual gives to religion; the level of satisfaction with life; and the level of choice and control. The religious behaviour, in particular church attendance, has been shown to influence positively volunteering (Becker and Dhingra, 2001; Proteau and Wolff, 2004; Bekkers, 2006 and 2007). The second variable is introduced so as to test whether happier people are more likely to volunteer. Finally, the last question is a classical sociological question of locus of internal control. The Rotter (1942) approach proved that higher internal control means better mental health and higher level of felt happiness and again we wish to test if higher levels of choice and control influence positively the propensity for volunteering.

3 Data

Our empirical analysis is based on the integrated data of European Values Survey (EVS). We consider the 4th wave of this inquiry which was gathered by the European Systems Study Group (EVSSG).

In our analysis we start by analyzing the decision to participate in volunteering activities

without distinguishing among the various types of volunteering.[1] Thus we define the variable «participation in unpaid activities» as our dependent variable. This variable is a dummy variable which is equal to 1 if the respondent does some type of unpaid work (i.e., answered yes to at least one of the question regarding unpaid work) and is equal to 0 otherwise.

The explanatory variables are described in Table 1. These variables are divided into three groups: socioeconomic variables (income, education, employment status), demographic variables (age, square of age, gender, size of town, number of children in household, marital status) and attitudinal variables (level of satisfaction with life, level of choice and control, importance of religion). Many of the variables were originally categorical variables. In order to incorporate categorical variables in the regression, one needs to choose a reference category and define dummy variables for each one of the remaining categories.[2] In other words, if a categorical variable has k categories, one needs to define $k-1$ dummy variables. A dummy variable corresponding to a given category indicates whether the respondent belongs to that category or not. The exclusion of one of the categories is necessary to avoid problems of multicollinearity. Table 1 indicates the reference category as well as the name of the dummy variable associated with each category. It is worth mentioning that the interpretation of the coefficients associated with a dummy variable should always be done with respect to the excluded category.

It should be noted that we include as explanatory variables both the age and the square of age. This allows us to test a quadratic relationship between age and participation in volunteering activities, a relationship which has been suggested in previous studies. In addition, regarding the number of children in the household we have several variables which take into account the ages of the children.

Finally, since we have data for 31 countries and we believe that there may exist important country specific effects that influence the volunteering decision (such as culture, religion and availability of public services) we include 30 country dummy variables (not shown in Table 1). The excluded country is Austria, hence country dummy coefficients should be interpreted relatively to Austria.

[1] In Section 5, we distinguish four types of volunteering activities and define the corresponding dependent variables.

[2] This procedure is automatic in most statistical packages. For example, in SPSS, one just needs to indicate that the variable is categorical and automatically the program generates the dummy variables associated with each category except the reference one.

Table 1: Description of explanatory variables.

Explanat. variable	Description
Income	Categorical variable. The reference category is "low income"
Inc_med	Dummy equal to 1 if individual has medium income level
Inc_high	Dummy equal to 1 if individual has high income level
Education	Categorical variable. The reference category is "low education"
Edu_med	Dummy equal to 1 if individual has medium education level
Edu_high	Dummy equal to 1 if individual has high education level
Employment	Categorical variable. The reference category is "full time employment"
Emp_ptime	Dummy equal to 1 if individual is part-time employed
Emp_slemp	Dummy equal to 1 if individual is self-employed
Emp_ret	Dummy equal to 1 if individual is retired
Emp_hwife	Dummy equal to 1 if individual is house wife
Emp_stud	Dummy equal to 1 if individual is a student
Emp_unem	Dummy equal to 1 if individual is unemployed
Emp_oth	Dummy equal to 1 if individual has other employement situation
Age	Age of the individual
Age2	Square of age
Female	Dummy equal to 1 if individual is a female, equal to 0 if a male
Town	Size of town. Reference category is "small town" (<2000 inhabitants)
Town_medsm	Dummy equal to 1 if individual lives in "medium-small town" (2000-20000)
Town_medlrg	Dummy equal to 1 if individual lives in "medium-large town" (20000-100000)
Town_lrg	Dummy equal to 1 if individual lives in "large"(>100000 inhabitants)
$Hous5^{-}$	Number of people in the household aged below 5
$Hous5^{-}12$	Number of people in the household aged 5-12
$Hous13^{-}17$	Number of people in the household aged 13-17
$Hous18^{+}$	Number of people in the household aged 18 or above
Marital Status	Categorical variable. Reference category is "married"
MS_livto	Dummy equal to 1 if individual is lives together as married
MS_dvr	Dummy equal to 1 if individual is divorced
MS_sep	Dummy equal to 1 if individual is separated
MS_wid	Dummy equal to 1 if individual is widowed
MS_sng	Dummy equal to 1 if individual is single
Life Satisfaction	Categorical variable. Reference category is "unsatisfied"
Sat_med	Dummy equal to 1 if individual has medium level of satisfaction
Sat_high	Dummy equal to 1 if individual has high level of satisfaction
Choice & control	Level choice & control, considering life decision & situation. Ref. "low choice & contro
Cont_med	Dummy equal to 1 if individual has medium level of choice and control
Cont_high	Dummy equal to 1 if individual has high level of choice and control
Religion import.	Categorical variable. Reference category is "very important"
Rlig_rather	Dummy equal to 1 if individual considers religion "not very important"
Rlig_notsoim	Dummy equal to 1 if individual considers religion "rather important"
Rlig_unimpor	Dummy equal to 1 if individual considers religion "not important"

4 Explaining the probability of volunteering

The logistic regression is a form of regression which is used when the dependent variable is a binary variable. In this case, our objective is to investigate the relationship between a set of explanatory variables and the occurrence of unpaid work. Let $\mathbf{X}$ be the set of explanatory variables and let Y be our dependent dummy variable which is equal to 1 if the respondent does unpaid activities. It is assumed that the probability of participating in volunteering activities depends on the set of explanatory variables as follows:

$$P(Y = 1|\mathbf{X}) = G(Z) = \frac{\exp(Z)}{1 + \exp(Z)}, \tag{1}$$

where Z is given by:

$$\begin{aligned} Z \;=\; & \beta_0 + \beta_1 Inc_med + \beta_2 Inc_high + \beta_3 Edu_med + \beta_4 Edu_high + \beta_5 Emp_ptime + \\ & \beta_6 Emp_semp + \beta_7 Emp_ret + \beta_8 Emp_hwife + \beta_9 Emp_stud + \beta_{10} Emp_unem + \\ & \beta_{11} Emp_oth + \beta_{12} Age + \beta_{13} Age2 + \beta_{14} Female + \beta_{15} Town_medsm + \beta_{16} Town_medlrg + \\ & \beta_{17} Town_lrg + \beta_{18} Hous5^{-} + \beta_{19} Hous5^{-}12 + \beta_{20} Hous13^{-}17 + \beta_{21} Hous18^{+} + \\ & \beta_{22} MS_livto + \beta_{23} MS_dvr + \beta_{24} MS_sep + \beta_{25} MS_wid + \beta_{26} MS_sng + \\ & \beta_{27} Sat_med + \beta_{28} Sat_high + \beta_{23} Cont_med + \beta_{24} Cont_high + \beta_{25} Rlig_rather + \\ & \beta_{26} Rlig_notsoim + \beta_{27} Rlig_unimpor + \delta_1 Country_1 + \cdots + \delta_{30} Country_{30} \end{aligned} \tag{2}$$

Since $G(Z)$ is a non-linear function, the impact of a change in the explanatory variable x_k in the probability of volunteering is not equal to β_k. Let $P(\mathbf{X}) = P(Y = 1|\mathbf{X}) = G(Z)$, then the impact on $P(\mathbf{X})$ of an infinitesimal increase in variable x_k is given by:

$$\frac{\partial P}{\partial x_k} = \frac{dG}{dZ}\frac{\partial Z}{dx_k} = \frac{\exp(Z)}{[1 + \exp(Z)]^2}\beta_k$$

For dummy variables the impact of changing x_k from 0 to 1 is given by the difference between G evaluated at $x_k = 1$ and G evaluated at $x_k = 0$, maintaining the values of the remaining variables. Notice that, in both cases, the sign of the impact is equal to the sign of the coefficient associated with the variable, β_k. However the magnitude of the impact depends on the value of Z, and thus depends on the value of all explanatory variables.

In terms of interpretation it is sometimes useful to look at the odds ratio or relative probability (the ratio of the probability of volunteering to the probability of not volunteering). From equation (1) it is easy to show that:

$$\frac{P}{1-P} = \exp(Z)$$

If we compare the odds ratio for two individuals, i and j, who are identical except in the k characteristic, then

$$\frac{P_i/(1-P_i)}{P_j/(1-P_j)} = \exp\left(\beta_k \left(x_{ik} - x_{jk}\right)\right).$$

Moreover, if $x_{ik} - x_{jk} = 1$, i.e. there is a unit change in x_k, then $\frac{P_i/(1-P_i)}{P_j/(1-P_j)} = \exp(\beta_k)$. The exponentiated coefficient $\exp(\beta_k)$ is called the *odds ratio*. Note that their interpretation is particularly useful for dummy variables. For a dummy variable, the odds ratio tells us that, controlling for the remaining explanatory variables, an individual having a given characteristic (dummy equal to 1) has a relative probability of engaging in volunteering activities which is $\exp(\beta_k)$ times the relative probability of volunteering for an individual not having that characteristic (dummy equal to 0).

Table 2 presents the results of the logist regression. Overall the results show that the model has explanatory power and that all categorical and scale variables are significant.

All *socioeconomic variables* are statistically significant at the 1% level, suggesting that they have a significant impact on the volunteering decision. Regarding income our results show that both medium-income and high-income individual have an higher probability of being involved in unpaid work than low-income individuals (the reference category). Moreover, since the coefficient associated with high-income is higher than the one associated with medium-income, our results suggest that the probability of participating in volunteering activities is increasing with income. This findings are consistent with the results obtained by Schady (2001) and Menchik and Weisbrod (1987).

The variable education also has a positive and statistically significant impact on the probability of participation in volunteering activities. Both medium and high education level individuals have higher probability of volunteering than low education individual and the value of the coefficient is larger for highly educated individuals. In fact, the relative probability of a high education

Table 2: Results of logistic regression explaining the probability of doing unpaid work.

Variable	Coefficient	Wald	Variable	Coefficient	Wald
Income		17.359***	Age	0.042***	24.017
Inc_med	0.190***	13.321	Age2	–0.0004***	18.084
Inc_high	0.224***	15.367	Female	-0.328***	65.182
Education		241.271***	Town		47.190***
Edu_med	0.390***	66.597	Town_medsm	0.015	0.061
Edu_high	0.856***	240.511	Town_medlrg	-0.234***	13.204
Employment		56.733***	Town_large	-0.288***	21.441
Emp_ptime	0.196***	7.143	Hous5^{-}	–0.114***	8.137
Emp_slemp	0.131	2.631	Hous5^{-}12	0.066**	4.959
Emp_ret	–0.060	0.630	Hous13^{-}17	0.106***	9.356
Emp_hwife	–0.012	0.020	Hous18^{+}	0.035*	2.765
Emp_stud	0.452***	23.575	Marital Status		12.685**
Emp_unem	–0.371***	15.758	MS_livto	–0.573***	8.120
Emp_oth	–0.152	1.078	MS_dvr	0.030	0.151
Life Satisfaction		49.198***	MS_sep	0.135	0.765
Sat_med	0.215***	6.631	MS_wid	–0.081	0.836
Sat_high	0.475***	29.867	MS_sng	0.072	1.387
Choice & control		13.315***	Country		540.733***
Cont_med	0.268***	10.015	Constant	–3.710***	196.947
Cont_high	0.319***	13.289			
Religion import.		150.363***			
Rlig_rather	-0.350***	37.422	Omnibus test (Chi-Sq)	1728.5	p-val 0.000
Rlig_ nosoim	-0.603***	102.146	Hosmer &Lemeshow (Chi-Sq)	6.167	p-val 0.629
Rlig_unimpor	-0.753***	132.362	Number of observations		18374

individual volunteering is 2.3 times ($e^{0.856}$) the relative probability of a low education individual volunteering whereas the corresponding figure for a medium education individual is 1.5. This suggests that the volunteering probability is increasing with the level of education. The fact that individual with more education volunteer more might be explained by the phenomenon called by Smith (1981) as "*general activity syndrome*" which means that "individual who engage in a form of socio-culturally valued behavior has tendency to engage in other types of socio-culturally valued behavior too. Education plays a central role to make individual incorporate the societal values and follow the societal norms in their behavior". Thus our results are consistent with previous findings in the literature (Freeman, 1997; McPherson and Roltolo, 1996; Herzog and Morgan, 1993; Brady *et al.*, 1999).

With respect to the *employment status* our results show that it is a significant variable but not all the categories show significant differences relatively to the full time employment category. Students have an higher probability of volunteering than full time employed. This fact may be related with time availability and the possibility to acquire skills and competencies which might be useful in the market place and it confirms Ziemek (2003). The availability of time may explain that the individuals employed in part time also have an higher probability of volunteering than full time employed. On the other hand, unemployed have a statistically significant lower probability of volunteering. In our opinion the self esteem problem which many times is verified among unemployed individuals may explain the lower probability of participating in voluntary activities by unemployed people. The remaining categories (self-employed, retired and housewives) do not show a statistically significant difference with respect to the full employed.

Let us now analyze the *demographic variables*. The variables age and age squared are both statistically significant. Since the coefficient associated with age squared is negative, the relationship between age and probability of participating in volunteering activities is a concave one. At first volunteering increases with age but, after a certain age, volunteering starts to decrease with age. In our case, controlling for the remaining variables, the probability of volunteering is maximal at 53 years of age. These results are very similar to the ones obtained by Herzog *et al.* (1993) and Menchik and Weisbrod (1987).

The impact of gender is statistically significant at the 1% level. Our regression shows that the relative probability of a female volunteering is 72% of the relative probability of a male volun-

teering. This result contradicts previous findings by Gaskin and Smith (1997) and Hodgkinson and Weitzman (1996).

The *size of the town* is a statistically significant variable at the 1% level. Our results show that if an individual lives in a large town (over 100.000 inhabitants) or in a medium-large town (between 20000 and 100.000 inhabitants) he/she has lower probability of being volunteer than individuals who live in small town (till 2.000 inhabitants). On the other hand, there does not exist a significant difference between living in a medium-small town and a small town. These results are consistent with Wuthnow (1989) findings on this issue. The size of town influences the availability of many social infrastructures and institution which provide some services like cultural or sports services. In smaller places is rather frequent that these kind of services are operated by associations functioning basically with volunteer work.

Considering *marital status* our results reveal that individuals who live together as married have lower probability of being volunteers than married individuals. On the other hand, there does not exist a statistically significant difference between divorced, separated, single, widowed people and married people in their propensity to volunteer. On this issue we do not confirm the Sundeen (1990) and Freeman (1997) result that single people are less likely to volunteer.

Regarding the *number of children*, our results show that increasing the number of children below 5 has a negative impact on the probability of volunteering. On the contrary, increasing the number of children above 5 increases the propensity to volunteer. Thus the impact of the number of children in the household depends a lot on the age of the children. For younger children, the reduction in the time available leads to lower participation in volunteering whereas for school-aged children the increase in the social-network implies an higher propensity for volunteering. Our results are similar to previous ones (Damico *et al.,* 1998; Menchik and Weisbrod, 1987; Schlozman *et al.,* 1994).

The *attitudinal characteristics* have a significant influence on the probability of volunteering. An higher level of satisfaction with life is positively associated with participation in volunteering activities. Similarly, individual who feel that they have a high level of choice and control over their lives also have an higher propensity to volunteer. These findings are consistent with House (1988) and Fischer and Schaffer (1993) results. Finally, the effect of religion is positive. The higher the importance given to religion by the individual, the more likely he/she is to do volunteer work.

Our regression also included country dummy variables to control for country specific effects. The coefficients associated with the country dummies and the corresponding Wald statistics are presented in Table 3. Recall that the reference country is Austria, thus we are comparing the intercept term for each country with respect to Austria.

Table 3: Coefficients of country dummies in logistic regression of unpaid work.

Variable	Coefficient	Wald	Variable	Coefficient	Wald
Country		540.733***	Lithuania	–0.756***	28.594
Belgium	0.207**	3.965	Luxembourg	–0.002	0.000
Bulgaria	–0.392***	8.326	Malta	–0.407***	8.225
Belarus	–0.273**	4.428	Netherlands	0.873***	61.533
Croatia	–0.613***	24.320	Poland	–1.224***	23.606
Czech Rep.	0.330***	10.792	Portugal	–1.299***	12.567
Denmark	0.422***	14.384	Romania	–0.805***	10.586
Estonia	–0.384***	9.022	Russian Fed.	–1.753***	36.472
Finland	0.592***	26.438	Slovakia	1.117***	49.900
France	0.153	1.988	Slovenia	0.020	0.006
Germany	–0.280	2.379	Spain	–1.267***	15.593
Hungary	–0.541***	17.109	Sweden	1.441***	10.201
Iceland	–0.021	0.037	Ukraine	–1.523***	13.811
Irland	–0.090	0.572	Great Britan	not estim.	
Italy	–0.152	2.055	North Irland	–0.339	0.723
Latvia	–0.132	1.139			

An overall look to the country dummies significance shows that controlling for country specific effects is really relevant. As a whole the country variables have a Wald statistic equal to 540.7 and hence are strongly significant. Next we analyze the impact of each country dummy.

First, one can conclude that the individuals from former socialist countries (Bulgaria, Belarus, Croatia, Estonia, Hungary, Lithuania, Poland, Romania, Russian Federation and Ukraine) are less likely to do unpaid work than individuals from Austria (the coefficients are all negative and statistically significant). Latvia and Slovenia also have negative coefficients but they are not statistically significant suggesting that, for given levels of the remaining variables, these countries do not differ much from Austria in their volunteering propensity.

There are some reasons for the small participation rate in post-socialist countries: the lack

of tradition transmitted from generation to generation; the relative poverty, implying that more energy is spent in satisfying the basic needs; the low social sensitivity; and the perception about the capacity for social acting (Gocko, 2006).

In the *Latin countries*, France and Italy do not show statistically significant differences with respect to Austria. On the other hand, individuals from Portugal and Spain have lower propensity to be volunteers than the individuals from Austria. One reason for the low volunteering propensity in the Iberian countries is the relatively small associative activities due the 20th century dictatorships which limited all those activity except the ones which were controlled by the state.

The individuals from *Scandinavian countries* except Iceland (Denmark, Finland, and Sweden) have higher propensity to volunteer than Austrians. A similar result holds for individuals from Belgium, Netherlands and Slovakia. The strengthened European and Scandinavian model of social economy places expectations of voluntary social work in nonprofit organizations, church and church associations. According to the latest studies (Karjalainen and Saranpää, 2002), in Finland the large part of the work dealing with social problems of the citizens is covered with voluntary associations and activities.

To summarize, our results show significant differences across countries regarding the propensity to volunteer. These differences are linked with the socioeconomic, political and cultural environment in which the volunteering institutions function and which may influence the volunteering activities. For example, compulsory voting and service requirements can be argued to influence civic activity and yet also question the voluntary nature of volunteering (Tuan, 2005). Different welfare models are connected to the societal needs and requirements for individual participation and the role of the third sector in each society. In general, policies regarding civil society differ to a great extent in the countries covered, and the effect of this in the voluntary activity is central.

Comparing our findings about the volunteer activity across Europe with the Global Cultural Map arranged by World Values Surveys and based on some dimensions of cross-cultural variation((1) Traditional/Secular rational and (2) Survival/Self-expression values), we found a lot of consistency applied to the volunteering activity.

5 Volunteering decision for various types of volunteer activities

In this section we investigate whether the determinants of volunteering are the same for the various types of volunteering activities. To do so we start by reducing the number of volunteer activities to the most important types of volunteering activities. Using principal component analysis we identify four different types of volunteering types that explain most of the underlying variability. For each type of volunteering activity, we then define a dummy variable indicating whether the individual participated or not in that type of activity. Finally we run four separate logistic regressions, one for each type of volunteering activity.

5.1 Principal component analysis

The questionnaire considers 14 types of unpaid work and it would be difficult to compare all of them. Thus we wonder if it is possible to divide these different types of volunteering according to some common characteristics. To answer this question we use principal component analysis. Using the oblimin rotation method with Kaiser normalization and excluded cases listwise, we obtained 4 components (see Table 4).

Bartlett's test of sphericity indicates whether the correlation matrix is an identity matrix, which would indicate that variables are unrelated. We clearly reject the null hypothesis that the correlation matrix is an identity matrix ($p-value < 0.001$). The Kaiser-Meyer-Olkin measure is a statistic that indicates the proportion of variance in the variables that might be explained by underlying factors. The value of 0.815 indicates a good adequacy. Table 4 shows the correlations between the variables and the factors, with values less than 0.3 deleted.

The first component aggregates the following variables:

- "Unpaid work local political action groups"
- "Unpaid work human rights"
- "Unpaid work peace movement"
- "Unpaid work environment, conservation, animal rights",

Table 4: Results of principal component analysis for types of unpaid work.

	Component			
Type of unpaid work	1	2	3	4
Peace movement	0.681			
Human rights	0.660			
Environment, conservation and animal rights	0.639			
Local politic action groups	0.485			
Labour unions		0.769		
Political parties or groups		0.667		
Professional associations		0.481		
Sports or recreation			0.706	
Youth work			0.647	
Education, arts, musics or cultural activities			0.507	
Religious or church organizations				0.737
Social welfare service for elderly, handic. or depriv. people				0.603
Woman's group				0.457
Organization concerned with health				0.316
Principal component analysis, oblimin with Kaiser norm.				
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.815			
Bartlett's Test of Sphericity (Chi-square)	20537.7	p-value	0.000	

This component captures unpaid activities related to "social awareness volunteering". We created a binary variable with the same name, which takes the value 1 if the individual does at least one type of unpaid work in this group, and takes the value 0 otherwise. People who participate in this type of activities are not likely to receive direct benefits but they are concerned with general and comprehensive social issues. That is why we have chosen the name "social awareness".

The second component aggregates the following variables:

- Unpaid work labour unions
- Unpaid work political parties or groups
- Unpaid work professional associations

This component captures activities that might be more related with personal interests and

that may provide direct benefits to the people who engage in these activities. We called this component "professional and political volunteering" and defined a binary variable with the same name. This variable is equal to 1 if the individual did at least one type of unpaid work in this group and is equal to 0 otherwise.

The third component aggregates the following variables:

- Unpaid work education, arts, music or cultural activities
- Unpaid work youth work
- Unpaid work sports or recreation

This component also captures activities that may benefit directly the volunteer, but more related with cultural and recreational activities. We called it "education and leisure volunteering" and created another binary variable with the same name. The value "1" represents situations where the individuals does at least one type of unpaid work in this group and takes the value "0" otherwise.

The fourth component aggregates the following variables:

- "Unpaid work social welfare service for elderly, handicapped or deprived people"
- "Unpaid work religious or church organization"
- "Unpaid work women's group"
- "Unpaid work organization concerned with health"

Like the first component, this kind of unpaid work is not likely to generate direct benefits for the volunteer. Since this work is related with concerns about the underprivileged/disadvantaged people we decided to call this component "social justice volunteering". We created a binary variable with the same name. This variable takes the value 1 when the individual participated in at least one type of volunteer work in this group and it is equal to 0 otherwise.

5.2 Logistic model for various types of volunteering work

In this subsection we use logistic regression for each one of the four types of volunteering work identified in the previous subsection. The explanatory variables are the same than the ones

used for unpaid work in general (see Table 1). We are interested in identifying the major determinants for each type of volunteering work and the main differences between the various types of volunteer work. The results of the four logistic regressions are presented in Table 5.

An overall look to the results in Table 5 allows us draw some general conclusions. First, all estimated models present a strong overall significance as indicated by the Omnibus Tests. In fact, the null hypothesis that all coefficients are equal to zero is clearly rejected (the p-value of 0.000 is a sign that the model is statistically significant for any significance level). To test goodness of fit we also used the Hosmer and Lemeshow test. At each step, this is a goodness-of-fit test of the null hypothesis that the model adequately fits the data. As the significance of the test is big (i.e., greater than 0.05) then the model is adequate to fit the data. Second, the set of variables which are statistically significant varies across the four regressions, indicating that the set of determinants of volunteering depends on the type of volunteering activity. There are only two variables that are statistically significant for all the four types of volunteering activity: education and country. This supports the view that education is the most consistent predictor of volunteering and shows that country differences are prevalent for all types of volunteering.

Let us now analyze in greater detail the determinants of each type of volunteering activity. The statistically significant variables for "social awareness volunteering" are: education, age, age squared, size of town, marital status, level of choice and control, religion and country. On the contrary, it is quite interesting to note that level of income, gender, number of children in the household and level of satisfaction with life do not have a significant impact on the propensity for "social awareness volunteering".

The impact of education, age, level of choice and control and religion is similar, in qualitative terms, to the one for volunteering in general. In fact, the probability of doing social awareness volunteer activities increases with the level of education; the influence of age follows an inverted U pattern with the maximum occurring at 37.5 years of age; and the propensity for social awareness volunteering increases with the level of control and choice and the importance of religion for the individual.

On the contrary, the impact of marital status and the size of the town show some interesting differences. For example, single and separated individuals have higher propensity for social awareness volunteering than married people. It is also interesting to note that while volunteering in general is decreasing with the size of the town where the individual lives, for social awareness

Table 5: Results of logistic regressions for the various types of volunteer work.

Explanat. variable	Social awareness	Social justice	Prof. & Political	Educ. & Leisure
Inc_med	-0.025	0.092	0.252**	0.268***
Inc_high	0.040	0.043	0.384***	0.331***
Edu_med	0.408***	0.358***	0.303***	0.443***
Edu_high	0.833***	0.646***	0.931***	0.912***
Emp_ptime	0.195	0.214**	-0.352**	0.437***
Emp_slemp	0.249*	0.160	0.208*	0.204***
Emp_ret	-0.051	0.168	-0.622***	0.104
Emp_hwife	0.085	0.184	-1.418***	-0.071
Emp_stud	0.417**	0.341	-0.147	0.557***
Emp_unem	-0.101	-0.217	-0.686***	-0.230*
Emp_oth	0.157	0.164	-0.363	-0.548**
Age	0.03**	0.078***	0.078***	0.009
Age2	-0.0004***	-0.0007***	-0.0007***	0.0002
Female	-0.118	0.239***	-0.540***	-0.576***
Town_medsm	-0.002	-0.042	0.142	0.035
Town_medlrg	-0.399***	-0.272***	0.002	-0.210**
Town_large	-0.259**	-0.223**	-0.006	-0.357***
Hous5^{-}	-0.047	-0.003	-0.084	-0.164***
Hous5^{-}12	0.054	0.021	-0.041	0.139***
Hous13^{-}17	0.027	0.143***	0.140**	0.169***
Hous18^{+}	0.050	0.030	-0.018	0.055**
MS_livto	0.444	0.302	-0.723	-0.423*
MS_dvr	0.269	0.109	-0.017	0.059
MS_sep	0.575**	0.219	-0.260	1.151
MS_wid	-0.238	0.117	-0.152	-0.317**
MS_sng	0.298**	0.090	-0.116	0.104
Sat_med	0.190	0.082	0.226	0.299**
Sat_high	0.333*	0.309**	0.369**	0.611***
Cont_med	0.411**	0.203*	0.270	0.331***
Cont_high	0.434**	0.266**	0.225	0.440***
Rlig_rather	-0.337***	-0.845***	0.025	0.055
Rlig_nosoimp	-0.466***	-1.535***	-0.034	-0.086
Rlig_noimpor	-0.586***	-1.899***	-0.179	0.246***
Constant	-5,108***	-4.192***	-5.229***	-2.971***
Omnibus Test (Chi-sq)	422.96; pv:0.000	1333.13; pv:0.000	751.62; pv:0.000	103-22.51; pv:0.000
Hosme&Lameshow	7.835 pv:0.450	9.143pv:0.330	8.247 pv:0.410	20.508 p-val:0.075
Number of observat.	15553	15553	15553	15 553

volunteering the relationship seems to follow a U shape.

Regarding "social justice volunteering" the main determinants are: education, employment status, age, age squared, gender, size of town, number of children between 13 and 17, level of choice and control, religion and country. On the contrary, income, number of children below 5, number of children between 5 and 12, number of children above 18, marital status and level of satisfaction with life do not have a significant impact on this type volunteering.

The impact of gender on social justice volunteering is precisely the opposite of volunteering in general. The relative probability of a female doing social justice volunteering is about 27% higher than the male relative probability ($e^{0.239} = 1.27$). On the other hand, the impact of the remaining significant variables is precisely the same in qualitative terms than for volunteering in general. However it is worth mentioning that the propensity for social justice volunteering seems to be much more sensitive to the individual attitude towards religion. Controlling for the remaining variables, the odds ratio for an individual who considers religion very important is 6.7 times ($e^{1.899}$) the odds ratio of an individual who considers that religion is not important at all (for volunteering in general the corresponding figure is only 2.1). The age for which the propensity for social justice volunteering reaches a maximum is 55.7.

Concerning "professional and political volunteering" the statistically significant variables are: income, education, employment status, age and age squared, gender, number of children between 13-17, and country. Income and education have a positive impact on the propensity for professional and political volunteering. It worth mentioning that this type of volunteering is particularly sensitive to changes in these two variables. The impact of age follows a quadratic relationship similar to the one for volunteering in general. Gender also has a strong effect on the probability of professional and political volunteering. In this type of volunteering, the relative probability of a female volunteering is only 58% of the relative probability of a male volunteering. The other very important variable is employment status. Part-time employed, retired people, housewives and unemployed all have significantly lower probability of being involved in professional and political volunteering than full-time employed. This result is quite natural since people more involved in professional activities are also more likely to be engaged in the volunteering activities related with labour and professional issues.

It is interesting to note that professional and political volunteering is not affected by attitudinal characteristics, such as satisfaction with life, the level of control and choice or the

importance of religion. In addition the size of the town, the number of children (except between 13-17) and the marital status are also not relevant to explain the propensity for professional and political volunteering.

The analysis of the education and leisure volunteering regression reveals that this type of volunteering is influenced in a significant manner by all our explanatory variables, expect age. For most variables, the impact is similar, in qualitative terms to the one described for volunteering in general (income, education, gender, size of town, number of children, satisfaction with life, choice and control, importance of religion). However, it should be noted that this type of volunteering is more sensitive than volunteering in general to education, gender, life satisfaction and choice and control.

The impact of the employment status on education and leisure volunteering shows some interesting differences with respect to the case of volunteering in general. Self employed, part-time employed and students individuals all have a significantly higher probability of engaging in education and leisure volunteering than full employed individuals, a pattern which is not observed for others types of volunteering. Similarly, the impact of the marital status also has some interesting features. Widowed and living together as married individuals have a much lower propensity for education and leisure volunteering than married people.

The impact of the country dummy variables on each type of volunteering is presented in Table 6. The countries are divided into four groups depending on whether they have a positive and statistically significant impact; a positive but not significant impact; a negative but not statistically significant impact; and a negative and statistically significant impact. As in the case of general volunteering one can conclude that it is very important to take into account country differences in the probability of volunteering for each of the four types of volunteering.

There are only two countries that show higher propensity for volunteering than Austria for all types of volunteering: Slovakia and Great Britan. Similarly, only Lithuania has a negative and statistically significant difference with respect to Austria for all types of volunteering. For the remaining countries, their position with respect to Austria depends on the type of volunteering activities. In spite of this, one can identify countries which, in general, have higher (or lower) propensity for volunteering. For example, Netherlands has an higher propensity for volunteering than Austria, except for professional and political volunteering, while Latvia has a lower propensity for volunteering than Austria, except for education and leisure volunteering.

6 Conclusion

In this article we investigated the factors that influence the decision of volunteering. We started by identifying the set of explanatory variables which have been considered in previous studies analyzing the decision to participate in volunteering activities. In our study we decided to include a set of socioeconomic variables, a set of demographic variables and a set of attitudinal variables. In addition, we included country dummy variables to control for the influence of country-specific effects. Then we estimated logistic regressions to analyze which of the explanatory variables have a significant impact on the probability of engaging in volunteering activities. The regression analysis was divided into two parts. In the first part we analyzed the determinants of volunteering in general. In the second part we identified four major types of volunteering and ran separate logistic regressions so as to understand the determinants of each type of volunteering.

The results of the logistic regression explaining the probability of volunteering in general confirm most results in previous studies. For example, education and income have a positive effect on the propensity for volunteering. The influence of age on the probability of volunteering has an inverted U shape, with the maximum propensity for volunteering occurring around fifty three years of age. As the number of children increases, the propensity for volunteering also increases, except for the case of very young children (below 5) where the opposite is true. Employment status as well as marital status also influence the probability of volunteering.

For volunteering in general the most novel contributions of our study are the inclusion of attitudinal characteristic as determinants of volunteering and the study of country effects. Our results show that the level of choice and control, the level of satisfaction with life and the importance given to religion are all important factors in explaining the probability of volunteering. In addition, our results suggest that there are large country differences regarding the propensity for volunteering. Thus, in studies dealing with data from several countries, one needs to control for country specific effects.

The second part of this article also provides a very interesting contribution. Previous studies have analyzed the determinants of volunteering in general, as we did in the first part of this article. However, different types of volunteering are likely to have a different set of determinants. Identifying the set of determinants for each major type of volunteering activity was precisely our objective in the second part of this article. Our results clearly indicate that the set of determi-

nants of the propensity for volunteering is not the same for all types of volunteering. Moreover the sign and magnitude of the impacts of each explanatory variables varies according to the type of volunteering activity. For instance, males have higher propensity than females to engage in professional and political volunteering as well as in educational and leisure volunteering but the opposite holds for social justice volunteering. Giving more importance to religion generally affects positively the propensity for volunteering, but in the case of professional and political volunteering the attitude towards religion seems to be irrelevant. Another interesting example of differences between types of volunteering is the case of income. Income influences positively professional and political volunteering as well as education and leisure volunteering but has no effect on social awareness and social justice volunteering. Overall, these results suggest that it is important to study separately each type of volunteering as there are significant differences across the various types of volunteering.

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Table 6: Country effects for the various types of volunteer work.

Variable impact	Social awareness	Social justice	Profess. & Political	Education & leisure
Positive and significative effect	Belgium 0.63*** Finland 0.39* Luxemburg 0.91*** Netherlands 0.66** Slovakia 0.87*** Gr. Britain 2.156***	Netherlands 0.74*** Slovakia 0.71*** Sweden 2.13*** Gr. Britain 2.57*** N Ireland 0.70*	Slovakia 0.74*** Gr. Britain 2.14***	Czech R 0.37*** Denmark 0.37*** Finland 0.41* Netherlands 0.93** Slovakia 0.63*** Sweden 1.19** Gr. Britain 1.49***
Positive but not significative effect	Czech R 0.27 Denmark 0.30 Italy 0.10 Malta 0.02 Slovenia 0.30 Sweden 1.04	Belgium 0.11 Finland 0.49 Iceland 0.13 Luxemburg 0.24	Bulgaria 0.16 Belarus 0.02 Denmark 0.11 Finland 0.18 Italy 0.002 Malta 0.06 Romania 0.35 Slovenia 0.25 Sweden 0.55	Belgium 0.08 France 0.18 Ireland 0.06 Luxemburg 0.15
Negative but not significative effect	Bulgaria -0.40 Belarus -0.05 Estonia -0.29 France -0.24 Hungary -0.16 Ireland -0.0003 Poland -0.75 Portugal -1.63 Romania - 0.94 Russian F -18.06 Spain -18.04 Ukraine -1.42 N. Ireland -18.34	Czech Rep.-0.2 Denmark - 0.17 France -0.11 Germany -0.004 Hungary -0.10 Ireland -0.23 Italy -0.13 Spain -0.50	Belgium -0.26 Croatia -0.10 Czech Rep. -0.04 Iceland -0.08 Ireland -0.19 Luxembourg -0.19 Netherlands -0.16 Portugal -18.48 Ukraine -0.41 N Ireland -0.2	Estonia -0.24 Germany -0.07 Iceland -0.04 Italy -0.20 Latvia -0.17 Slovenia -0.08 Ukraine -19.33
Negative and significative effect	Croatia -0.516** Germany -0.76* Iceland -0.54** Latvia -0.50* Lithuania -1.05***	Bulgaria -1.01*** Belarus -0.31* Croatia-0.60*** Estonia -0.34* Latvia -0.62*** Lituania-1.04*** Malta -0.41** Poland -1.50*** Portugal -1.11** Romania -1.78*** Russian F.-2.72*** Slovenia -0.76*** Ukraine - 2.68***	Estonia-0.89*** France -0.82*** Germany -2.11*** Hungary -0.97*** Latvia -0.67*** Lithuania -0.69*** Poland -0.76* Russian F.-1.49*** Spain -1.03*	Bulgaria -0.88*** Belarus -1.07*** Croatia -0.73*** Hungary -0.77*** Lithuania -1.04*** Malta -0.61*** Poland -2.21*** Portugal -0.97** Romania -1.61*** Russian F.-1.91*** Spain -0.85*** N. Ireland -2.16**