Voluntary work and domain satisfactions: evidence from Italy

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Abstract

The paper empirically investigates whether individuals who do volunteer work are more satisfied with three domain satisfactions: leisure satisfaction, friends' relationships satisfaction and economic situation satisfaction. Using Istat's (Italian Central Statistical Office) Multiscopo survey for the period 1993-2000, the paper shows that volunteering increases leisure, friends' relationship and economic situation satisfaction. The paper interprets these results as an indication that the benefits from volunteering are a combination of the following reasons: i) intrinsic motivation; ii) extrinsic motivation; iii) relational goods.

1. Introduction

In the last decade, economists have begun to consider measures of happiness as indicators of individual well-being and to study subjective well-being as serious subject. One aspect of this approach is the consideration of what people say rather than what people effectively choose or decide (Scoppa, Ponzo 2008). For recent reviews of this literature see Di Tella, MacCulloch (2006), Frey, Stutzer (2002a) and van Praag *et al.* (2003)[1].

This paper extends this line of research to analyze the relevance of unpaid labour for domain satisfactions using Italian data. In particular, the present paper empirically investigates whether individuals who do volunteer work are more satisfied with three domains satisfactions: "leisure satisfaction", "friends' relationships satisfaction" and "economic situation satisfaction", i.e. three of major constituents of general life satisfaction (van Praag, Ferrer-i-Carbonell 2008).

To the best of my knowledge, there are no studies in which voluntary work is a determinant of domain satisfactions with regards to Italy. The value added of the present paper is two-fold. First, it isolates empirically the reasons by which volunteering can effect individual well-being. Second, it validates the empirical results of previous studies on the determinants of domain satisfactions using longitudinal data.

The paper concentrates on volunteer work because this constitutes one of the most important pro-social activities. Indeed, a growing share of unpaid labour supply characterises advanced economies, especially in the sectors related to education, health and social services. In Italy, in the late nineties, the non profit sector was 3.1 percent of the whole economy, with 2.3 percent of total employment. Three million workers were employed in non profit activities at zero wages, about one third of them were in activities concerning education, health and social services (Beraldo, Turati 2007).

In literature, empirical analysis about the impact of volunteering on subjective well-being has been carried out by Becchetti *et al.* (2008), Bruni, Stanca (2008) and Meier, Stutzer (2008). These papers use data from World Value Survey (WVS) and German

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[1] Most studies in this literature ask individuals how satisfied they are with their life as a whole or with a specific domain of it. They are invited to cast their response in terms of a small number of verbal response categories, such as "dissatisfied" and "very satisfied". Alternatively, the categories are numbered from 0 or 1 to 5, 7 or 10, where "most dissatisfied" corresponds to level 0 or 1 and "most satisfied" with the highest level. When two individuals give the same answer, they are assumed to enjoy similar satisfaction levels, implying that ordinal comparability is permitted. Thus, ordinal interpersonal comparability is a basic assumption in these models (van Praag *et al.* 2003, 30):

Socioeconomic Panel (GSOEP) to show that voluntary work positively affects subjective life satisfaction as a whole.

While Becchetti et colleagues and Bruni and Stanca explain the positive correlation using the relational goods theory, according to which individuals who consume more relational goods are more satisfied with their life than those who have less human relationships, Meier and Stutzer emphasize two reasons by which volunteering can positively affect individuals well-being. First, people's well-being increases because they enjoy helping others *per se*; the reward is internally due to an intrinsic motivation to care for others' welfare. Second, people volunteer instrumentally in order to receive a by-product of volunteer work; it is not that they enjoy volunteer *per se*, but their utility increases because they receive an extrinsic reward from volunteering (Meier, Stutzer 2008, 41). However, for most people the benefits from volunteering are probably a combination of the aforementioned reasons: i) intrinsic motivation; ii) extrinsic motivation; iii) relational goods.

Recent economic research on happiness suggests that changes in the way that people feel could be captured by subjective responses on a variety of domain satisfactions (Demoussis, Giannakopoulos 2008). Domain satisfactions relate to individual satisfaction with different domains of life, such as financial, leisure, social-life and others. For example, one may be very happy with one's financial situation but very unhappy with the time available for leisure. Satisfaction with life as a whole can be seen as an aggregate concept, which can be unfolded into its domain components (Van Praag *et al.* 2003; van Praag, Ferrer-i-Carbonell 2008).

The main aim of the present paper is to isolate the aspects of volunteering that are rewarding by means of domain satisfactions. Put differently, if benefits from volunteering are probably a combination of the aforesaid reasons, I will aspect positive correlations between voluntary work and some domain satisfactions. The paper investigates empirically the significance of unpaid work on three domain satisfactions: "leisure", "friends' relationships" and "economic situation". These domains should be thought as a micro-econometric test of 1) intrinsic motivation: relevance of voluntary work on leisure satisfaction; 2) consumption of relational goods: impact of unpaid labour on friends' relationships satisfaction; 3) investment motivation: importance of volunteering on economic situation satisfaction.

The present study uses ISTAT's (Italian Central Statistical Office) Multiscopo survey for the period 1993-2000. This large dataset is one of the best available for studying domain satisfactions in cross-section framework. Individuals are surveyed each year concerning various aspects of their life. In addition to questions about their individual characteristics, they are asked about their satisfaction in different areas of life and the volunteer work they do. However, the main drawback of this survey is that it does not collect information on household income. In order to overcome this limit, I merge the ISTAT's Multiscopo survey with the Bank of Italy's Survey of Households Income and Wealth (SHIW) for the period 1993-2000. Empirical findings show that individuals who do volunteer work are more satisfied with their "leisure", "friends' relationships" and "economic situation". I interpret these results as an indication that the benefits from volunteering are a combination of the abovementioned reasons: i) intrinsic motivation; ii) extrinsic motivation; iii) relational goods.

The paper is structured as follows. Sections 2 and 3 present the theoretical consideration about why people do voluntary work and why volunteering might influence well-being, as well as the results of previous studies. Section 4 considers works on the link between happiness and domain satisfactions while Section 5 illustrates the hypothesis about the effect of voluntary work on domain satisfactions. Section 6 discusses the dataset and the methodology used for empirical analysis as well as presents descriptive statistics, while the results are showed in Section 7. Section 8 concludes.

2. Motivations in existing empirical studies on voluntary work

Volunteering is a complex phenomenon the explanation of which transcends the limits of one single approach as different disciplines such as anthropology, psychology, sociology and economics offer insights into the motives for volunteering. The motivational reasons to explain volunteering are classified in two groups. One group focuses on internal rewards due to intrinsic motivation originating from helping others *per se*. According to cognitive social psychology (Deci 1971, 105) "one is said to be intrinsically motivated to perform an activity when one receives no apparent reward except the activity itself". The other group of motives considers the increase in utility due to extrinsic rewards from volunteering: people volunteer instrumentally in order to receive a by-product of volunteer work (Hackl *et al.* 2007; Meier, Stutzer 2008).

Meier, Stutzer (2008) underline the following reasons for which voluntary work is intrinsically and extrinsically rewarding.

(1) *Volunteers enjoy their work per se and intrinsically benefit from the act of volunteering* (Deci 1975; Frey 1997; Andreoni 1990). People enjoy doing the required task by itself and they receive a "warm glow" from contributing time to the provision of a public good. The knowledge of contributing to a good cause is internally self-rewarding. Empirical evidence is found in Menchik, Weisbrod (1987), Vaillancourt (1994), Day, Devlin (1996). And recently, papers that support this thought are Carpenter, Myers (2007), Cappellari *et al.* (2007) and Bruno, Fiorillo (2009).

(2) *Volunteering can be undertaken as an investment in human capital*. Individuals engage in volunteer activities to raise future earnings on the labour market. Empirical findings holding up this reason are Menchik, Weisbrod (1987), Vaillancourt (1994), Day, Devlin (1996, 1998), Hackl *et al.*, (2007) and Fiorillo (2009).

(3) *People can volunteer in order to invest in social network*. Through engagement in unpaid work, social contacts evolve which can be valuable for getting employment. Employees, for example, may volunteer not only because they enjoy helping others, but also because they wish to signal their good traits and at the same time make valuable social contacts useful for their career.

However, volunteers may also enjoy social interactions without the expectations of an extrinsic reward in the future. Wilson, Musick (1998) implicitly suggest that interest in relationships, not only for extrinsic motivation but also for gratification *per se*, may be the motive for volunteer work. The relational content of interpersonal interactions has recently entered the theoretical debate on social interactions under the label *relational goods*. The economic analysis of relational goods was first proposed by Gui (1987) in studying the structures of a communitarian economy and by Ulhaner (1989) in explaining participation in political elections – an anomaly for rational choice models (Becchetti *et al.* 2008). Relational goods are intangible outputs of a communicative and affective nature, produced through interactions (Gui 2000, 153). They cannot be produced, consumed, or acquired by a single individual, because they depend on the interaction with others and are enjoyed only if shared with others[2]. Thus, a first key feature of relational goods is that identity matters (Bruni, Stanca 2008). A second essential feature of relational goods is that they acquire

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[2] Relational goods share some characteristics of local public goods, that is they are non-rivality and non-excludability. However, they are different from traditional public goods since production and consumption are simultaneous and joint (Sacco, Vanin 2000).

value through sincerity or genuineness – which is impossible to buy, so they can be generated as a product of some instrumental activity, but not making contracts for their supply (Becchetti *et al.* 2008). In the words of Nussbaum (2001), "it is the relationship itself that constitutes the good". Relational goods include companionship, emotional support, social approval, solidarity, a sense of belonging and of experiencing one's history, the desire to be loved or recognized by others etc. These goods are, on a smaller scale, produced by family relationships or friendships and, on a larger scale, in many kinds of social events (Becchetti *et al.* 2008). Associational participation and formal volunteering are expected to be particularly propitious to the production and consumption of relational goods. They encourage face to face encounters, facilitate meetings between people who share similar values and objectives and often have a relationship of mutual trust. Thus, associational participation and formal volunteering increase the stock of social relations, creating new opportunities for meetings between individuals already connected and opening new interpersonal links (Gui 2003). Prouteau, Wolff (2004, 2006, 2008) and Fiorillo (2009b) empirically show that a relational motive explain paertecipation and volunteering in associations.

3. Voluntary work and happiness in previous research

Volunteering can affect individual's wellbeing through the channels indicated in Section 2. (i) People's wellbeing increases because they enjoy helping others *per se*. (ii) People's wellbeing increases because they receive an *extrinsic reward* from volunteering. (iii) People's wellbeing increases because they produce and consume *relational goods* from volunteering.

According (i), Meier, Stutzer (2008, 41) observe that the task of volunteering may increase people's self-determination and feelings of competence because "… intrinsic motivation involves people freely engaging in activities that they find interesting, that provide novelty and optimal challenge (Deci, Ryan 2000, 235). In turn, self-determination and feelings of competence influence subjective wellbeing positively. Regard (ii), again Meier, Stutzer (2008, 42) underline that if volunteering is undertaken as a result of extrinsic motivations, the correlation between volunteering and wellbeing would be due to expectations of higher earnings in the future. In the empirical analysis the authors using data from the *German Socioeconomic Panel* (GSOEP) show that regular volunteering

increase people's utility and people who put more emphasis on extrinsic aims than on intrinsic aims are less satisfied with life. These results for Germany, according to authors, replicates the results in psychology that people who pursue extrinsic goals are less satisfied with their life than people focusing on intrinsic life goals. Such a "hedonistic paradox" occurs because people who are materialistically oriented do not help others and therefore do not benefit from the material rewards of pro-social behaviour (Phelps 2001). As a result, it is not people who pursue their own happiness who become happy, but people who care for others. However, Meier and Stutzer observe that the differences presented in terms of benefits from volunteering between extrinsically and intrinsically oriented individuals can be interpreted as an indication that the motivation behind volunteering matter and that more research is needed in order to better understand which volunteer tasks are most rewarding and how such differences can be explained.

According (iii), Bruni, Stanca (2008) put in their empirical findings on the consumption of relational goods in the debate on the income-happiness paradox[3]. Using data from the World Value Survey (WVS), Bruni and Stanca show that the active participation in activities of a voluntary organization is positively and significantly associated with higher life satisfaction. Furthermore, active involvement in unions, political parties and professional voluntary organizations are not significantly related to life satisfaction. Thus, it seems to suggest that it is the activities where intrinsic motivation plays prominent role that matter for life satisfaction, whereas the activities that imply an extrinsic motivation are less strongly related to subjective well-being. These results, for authors, can be considered as an indication that the relational component of relational goods is particularly relevant for individual happiness. The evidences suggest that the *relational treadmill* can provide an additional explanation to income-happiness paradox. As a society becomes more affluent the effect of higher income on individual happiness tends to be offset by lower consumption of relational goods.

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[3] Easterlin (1974) opened up this debate with an important empirical finding. In 30 surveys over 25 years, per capita real income rose by more than 60 percent, but the proportion of people who rated themselves as "very happy", "fairly happy" or "not too happy" remained almost unchanged. Among the many explanations offered for the income-happiness paradox, one of the most popular among economists is based on the relative consumption hypothesis. The basic idea is that people compare themselves to some reference group when making consumption decisions, so that individual utility depends not only on the absolute level but also on the relative level consumption (Frank 2005). A relational theory of happiness would explain the income-happiness paradox by arguing that higher income levels are associated with a tendency to over-consume material goods and under-consume relational goods, an important determinant of subjective happiness (Bruni, Stanca 2008, 526).

If less relationality leads to less happiness, the key question is why people consume lower and lower of relational goods. One possible explanation comes from a study of Frey, Stutzer (2005) in which they stress that when people make decisions, they overvalue characteristics relating to consumption satisfying extrinsic desires (income and status) and underestimate the utility relating to consumption satisfying intrinsic needs (time spent with family, friends and on hobbies). Of course, relational goods fall in the second category of consumption. Other studies such as Antoci *et al.* (2005) and Bartolini (2006) point out on the character of public goods of relational goods: the level of relationality can be low because of a coordination failure in contributing to the public good supply. Based on these theoretical analyses, that is the consumption of relational goods can be inefficiently low, Becchetti *et al.* (2008) test empirically the hypothesis that those individuals who consume more relational goods will be on average better off that those who have been less successful in solving the problems related to the production and consumption of relational goods[4]. Using data from GSOEP the authors find that voluntary work is positively related to higher level of self declared happiness.

4. Happiness and domain satisfactions

There is a general consensus on the existence of a relationship between a person's life satisfaction and his satisfaction in different areas of life, which are classified into a few main domain satisfactions. The literature on domains of life, outside of economics, states that life can be approached as a general construct of many specific domains and that the satisfaction can be understood as the result of satisfaction in the domains of life. Consequently, a relationship between life satisfaction and domain satisfactions is assumed. For recent reviews of this literature outside of economics see Rojas (2006). In economics, few studies explore the relation of global happiness in different domains. The works of van Praag *et al.* (2003) and van Praag, Ferrer-i-Carbonell (2008) examine the extent to which differences among individuals in overall satisfaction are related to satisfaction with six life domains (job, financial, house, health, leisure and environment). The results, based on data from British Household Panel Survey (BHPS) and GSOEP, suggest that general satisfaction may be seen as an aggregate of the six domain satisfactions. Each domain makes its

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[4] In this perspective the hypothesis tested by Becchetti and colleagues is close to the "fellow feelings" hypothesis of Adam Smith, rediscovered by Sudgen (2002), according to which individuals' mutual awareness of a common sentiment is in itself a source of pleasure for them (Becchetti *et al.* 2008, 348-349).

specific contribution to the aggregate. These findings, according to authors, can be explained by means of a two-layer model summarized as

Objective variables (gender, age, income etc.) $\rightarrow$ Domain satisfaction $\rightarrow$ General satisfaction
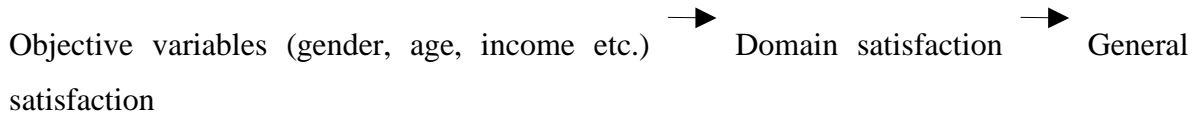
Rojas (2006) studies the nature of the relationship between life satisfaction and satisfaction in eight domains of life (health, economic, job, family, friendship, personal, community environment). He considers not only an additive specification between life satisfaction and domain satisfactions, as in Praag *et al.* (2003), but also alternative specifications such as a semi-logarithm specification, a logarithm-logarithm specification and a constant elasticity of substitution specification. Using data on Mexico, Rojas finds that all specifications show the importance and statistical significance of each domain satisfaction coefficient except friendship and community whose coefficients are non-statistically different than zero. Easterlin (2006) uses the domain approach to study happiness over the life-cycle. Using data from the United States General Social Survey (GSS), the author finds that happiness varies directly and significantly with each dimension of people's lives: one's financial situation, family life, health, and work. Thus, the greater is satisfaction with each of these life situations, the greater, on average, is overall happiness.

5. Voluntary work and domain satisfactions

In Section 3, I have discussed about the papers that find a positive correlation between voluntary work and general satisfaction. In Section 4, I have considered the works that show a positive relationship among domain satisfactions and general satisfaction. Thus, in this Section, I suppose a positive correlation among voluntary work and three domain satisfactions: "leisure", "friends' relationships" and "economic situation".

First, suppose that people use the time for leisure activities also for volunteering. Assume that volunteering is an intrinsically motivated activity, that is to be one for which the reward is in the activity itself. This means that people do naturally and spontaneously voluntary work because they feel free to follow they inner interests. If it is the case, I would expect that more voluntary labour is positively associated with leisure satisfaction.

Second, assume that people spend leisure time for voluntary work. Think that volunteering encourages face to face encounters, facilitates meetings among people who share similar values and objectives and opens new interpersonal links. Hence, volunteering

has the features of identity and genuineness. If it is the case, I would expect that more voluntary labour is positively associated with friends' relationships satisfaction.

Finally, suppose that people spend leisure time for voluntary work. Assume that individuals engage in volunteer activities for getting employment or as prerequisite for certain position in a private or a public firm or to raise future earnings on the labour market. In this case, I would expect that more voluntary labour is positively associated with economic situation satisfaction.

On the basis of previous supposition in the next Section I shall present the dataset for the empirical analysis.

6. The sample description and empirical strategy

The sample used in the present study is drawn from the *Indagine Multiscopo sulle Famiglie, Aspetti della Vita Quotidiana* (literally, a Multipurpose Households Survey on everyday life issues), a cross-sectional survey yearly administered by the Italian National Statistical Office (ISTAT). ISTAT initiated its new series of multipurpose household surveys in 1993. Every year a representative sample of some 20,000 Italian households (60,000 individuals) is surveyed on key aspects of daily life and behaviour. Though it is annual, it is not a panel data. Among the mass of information provided, there are data on unpaid activities, on a wide range of domain satisfactions as well as on individual characteristics. However, the main drawback of this survey is that it does not collect information on household income. The Bank of Italy's SHIW contains detailed information on the income and wealth of family members as well as socio-demographic characteristics of the household. Therefore, in order to overcome the lack of household income in Multiscopo survey, I merge the above datasets using the statistical matching method. Data fusion provides a means of combining information from different sources into a single dataset. The aim of statistical matching is to match an individual of Multiscopo with a similar individual of the SHIW according to some particular criteria, in order to collect relevant information from both surveys. Specifically, I impute household income of an individual from the SHIW to a similar individual from the Multiscopo[5].

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[5] For detailed information about how the statistical matching was performed see Fiorillo (2008)

Table 1. Volunteering: *Multiscopo*, 1993-2000 (Percentage %)

	All	*Men*	*Women*	*Age ≤ 30*	*Age > 30*
Workers	9.51	9.77	9.06	8.68	9.75
Non-workers	7.08	7.45	6.87	9.61	6.07

The paper draws from the period 1993 to 2000. The final dataset is constituted by pooling together the waves conducted in 1993, 1995, 1998, and 2000 of *Multiscopo* survey. The unit of analysis is all the individuals older than 14 years. After deleting observations with missing data on any of the variable used in analysis, I analyse to different sub-samples: working and non-working. The working sample consists of 87803 respondents. The non-working-sample includes inactive individuals as well as unemployed. It comprises 115928 respondents.

The Multiscopo survey asks respondents whether they have performed unpaid activity during the past year in the following social organization: "volunteer service". On the basis of the answer, I create a dummy for unpaid activity, *Volunteering* (official volunteer service associations), which takes the value of 1 for a positive response, 0 otherwise. Table 1 displays the weighted frequency of volunteering. The distributions show that 9.51 percent of Italian workers offer volunteering in a social organization of volunteer service while only the 7.08 percent of Italian non-worker volunteer. In both sub-samples, women tend to spend less time in voluntary work than male. Moreover, in the non-working sample, the older cohort (aged over 30), does tends to spend less time in voluntary work than the younger cohort (30 and under). The opposite occurs in working-sample.

Multiscopo dataset includes a fairly large number of domain satisfactions measured with a question on a 4-points scale: "C*onsider the last twelve months. Are you satisfied with the following domains of your life?*". For the aim of this paper I consider the following areas of life: leisure", "friends' relationships" and "economic situation". The responses are: "Very happy", "Quite happy", "Not very happy", "Not at all happy". I recode the answer on a scale from 1 to 4, with 1 being "Not at all happy" and 4 being "Very happy". In both sample, both leisure satisfaction and economic situation satisfaction have median equal to 3, while the 25- and 75- percentile are, 2 and 3, respectively. The median of friends' relationships satisfaction is 3 and the 25- and 75- percentile are 3 and 4[6].

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[6] I investigate whether the three satisfaction measures are based on the same underlying construct by calculating the Cronbach's alpha value. The across domains calculated Cronbach's alpha value is 0.48 for the

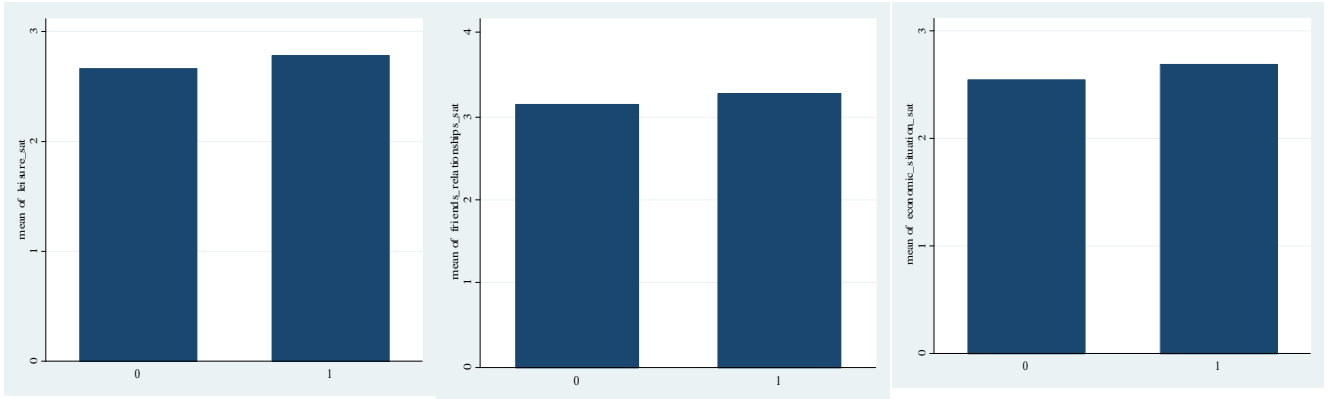Figure 1. Volunteering and domain satisfactions: working sample

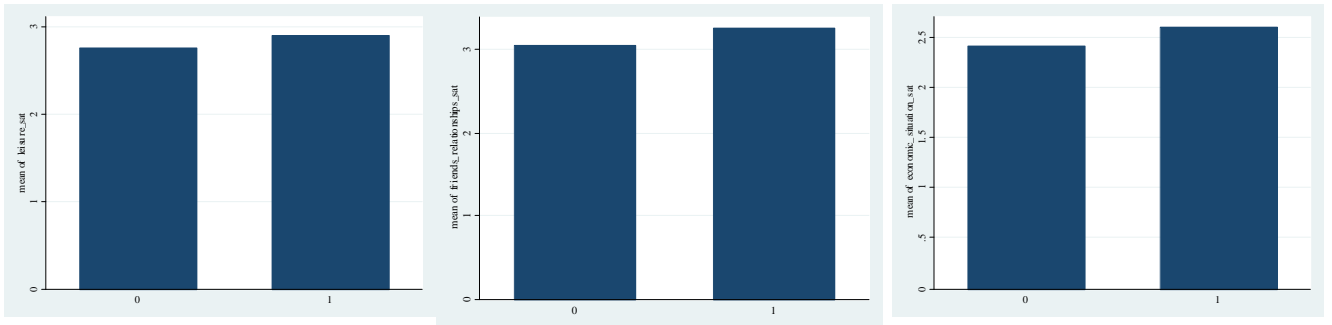Figure 2. Volunteering and domain satisfactions: non-working sample

Figure 1 and Figure 2 displays the relationship between voluntary work and domain satisfactions for the pooled dataset. The descriptive statistics show that, on average, people who volunteer report the highest score of domains satisfactions. For each domain of life, the difference is sizeable and statistically highly significant[7].

Multiscopo dataset provides detailed information on the demographic and social characteristics of all the individuals in a household. These features have been founded to be associated with life satisfaction as a whole as well as satisfaction in different areas of life[8]. These variables are used as control variables in the empirical investigation. The description is presented in Appendix A. Because the economic literature shows a link between interpersonal relationships with friends and well-being (Bruni, Stanca 2008; Demoussis,

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working sample and 0.49 for the non-working sample, indicating that satisfaction responses are not based on the same latent background. These statistics indicate that the three domains need to be examined separately, i.e. independently from each other.

[7] The differences in mean are analysed using t-tests.

[8] For a recent review of the economic literature on the factors associated with subjective well-being see Dolan *et al.* (2008).

Table 2. Descriptive statistics

Variable	Working		Non-working	
	Mean	S.D.	Mean	S.D.
Domain satisfactions				
Leisure	2.67	0.78	2.78	0.79
Friends' relationships	3.17	0.66	3.07	0.74
Economic situation	2.57	0.69	2.41	0.73
Volunteering	0.09	0.29	0.07	0.25
Female	0.36	0.48	0.63	0.48
Single, with partner	0.01	0.09	0.00	0.06
Married	0.65	0.48	0.53	0.50
Divorced	0.05	0.21	0.02	0.14
Widowed	0.02	0.12	0.14	0.35
Age31-40	0.30	0.46	0.08	0.27
Age41-50	0.27	0.44	0.08	0.27
Age51-65	0.17	0.37	0.24	0.42
Age>65	0.01	0.09	0.31	0.46
Family size	3.35	1.20	3.10	1.37
Children0_5	0.21	0.48	0.08	0.31
Children6_12	0.26	0.54	0.13	0.40
Children13_17	0.22	0.49	0.23	0.51
Education	10.65	4.03	7.42	4.28
Working hours	40.30	12.61		
Household income (ln)	10.77	0.43	10.55	0.46
Health	4.28	0.91	3.87	1.14
Church attendance	0.21	0.41	0.31	0.46
Newspapers	0.33	0.47	0.19	0.39
Homeowner	0.71	0.45	0.72	0.45
Meet friends	4.26	1.30	4.27	1.61
Self-employed	0.26	0.44		
Unemployed			0.10	0.31
Student			0.17	0.37
Military service			0.00	0.07
Retired			0.37	0.48
Observations	87803		115422	

Giannakopoulos 2008; Powdthavee 2008; Becchetti *et al.* 2009), I also consider as key control variables frequency of social interaction with friends. Summery weighted statistics for all the variables used in the analysis are reported in Table 2.

As empirical strategy, I follow Blanchflower, Oswald (2004) and assume that there exists a reported well-being function associated with a single area of life:

$$r = h(u(v, y, z, t) + e \qquad\qquad (1)$$

where *r* denotes some self-reported number or level collected in the survey. The $u(\dots)$ function is the respondent's true well-being associated with a single area of life and it is observable only to the individual asked; $h(\dots)$ is a non-differentiable function relating actual to reported well-being; *v* represents voluntary work status; *y* denote income; *z* is a set of socio-demographic and personal characteristics and *e* is an error that subsumes the inability of human beings to communicate accurately their well-being levels associated with a single area of life.

The empirical counterpart of Eq. (1) is

$$DS_{it}^* = \alpha + \beta V_{it} + \lambda Y_{it} + Z_{it}^{'}\delta + \varepsilon_{it} \qquad\qquad (2)$$

where domain satisfactions (DS) are the reported well-being associated with a single area of life for individual *i* at time *t*; *V* is a dummy variable for volunteering; *Y* is the annual household income; the *Z* vector consists of the other variables that are known to influence well-being, including dummies for gender, marital status, age, family size, number of children, education, health, home ownership, reading newspapers, employment status, social relationship with friends as well as region and year; and ε is a random-error term.

I do no observe DS^* in the data. Rather, I observe *DS* as an ordinal variable, measured on a scale from 1 to 4. Thus, the structure of Eq. (2) makes it suitable for estimation as an ordered probit model:

$$P(DS_{it} = J - 1) = \Phi(\mu_j - \alpha - \beta V_{it} - \lambda Y_{it} - Z_{it}^{'}\delta) - \Phi(\mu_{j-1} - \alpha - \beta V_{it} - \lambda Y_{it} - Z_{it}^{'}\delta) \qquad (3)$$

where J takes a values from 1 to 4, μ_j is defined such as *DS=J-1* when $\mu_{j-1} < DS^* \leq \mu_j$ and $\Phi(.)$ is the cumulative normal distribution[9].

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[9] Following the existing literature, I interpret the reported level of satisfaction with single area of life as an ordinal measure, that is, higher levels reflect higher utility, but I do not assume that, for example, level 4 represents twice the utility of level 2.

7. Estimation Results

Now, I shall consider the estimates resulting from the domain satisfactions equation (3).

7.1 Leisure satisfaction

Table 3 presents the ordered probit estimation of Eq. (3) using leisure satisfaction as the dependent variable. Prior to discussing the result associated with the measure of volunteering, I first discuss the findings regarding socio-economic characteristics as control variables in order to provide a preliminary assessment of the empirical specification.

It results that females enjoy their leisure less than males, in the working sample, and that family status does not appear to be an important determinant of leisure satisfaction: being single with partner, married and divorced are not statistically significant while widowed present a negative and significant effect at 5 percent level only in non-working sample[10]. The relationship between leisure satisfaction and age dummies is increasing (significant at 1 percent level in every dummy except for *Age31-40* variable).

Having teenagers exercise positive influences on leisure satisfaction, while living in extended families affect positively leisure satisfaction for workers whereas negatively for non workers. The presence of children aged 0 to 12 years has a negative effect on leisure satisfaction.

Educational variable is positive and highly significant[11]. The positive effect emerges when controlling for household income, implying that the effect of education on leisure satisfaction is not simply determined by education being a proxy for earnings. The number of working hours has a strong negative effect on leisure satisfaction while the impact of household income is negative and highly significant[12]. In non-working sample, household income does not seem a strong factor for leisure satisfaction, but the sign is positive[13].

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[10]I break my samples down estimating separately for women and men (not reported). Significant differences do not emerge.

[11] I also use dummies for educational qualification rather than for years of education. The results are similar (not reported).

[12] I also experiment (not reported) a different functional forms introducing household income and household income per capita, but results show that family income decreases individual leisure satisfaction. Moreover, I use dummies for the quintiles of household income within which individuals lie (not reported). The reference category is composed of individuals who are in the third quintile of household income. Being below (above) the third quintile generates a positive (negative) and significant effect on leisure satisfaction. Thus, these results reflect lower leisure satisfaction associated with higher levels of family income.

[13] However, when I try (not reported) with household income per capita and household income per capita in logarithmic form, in both cases I find that family income increases leisure satisfaction: coefficients are positive and statistically significant.

Health status is strongly significant as well as church attendance, reading newspapers and owning their home outright. However, last variable in not significant in non working sample. As expected, variable for frequency of social interaction with friends is strongly positively correlated with leisure satisfaction. This last result is in line with the finding of Powdthavee (2008) using longitudinal data for United Kingdom.

The self-employed have much less leisure satisfaction than employed workers. The dummies *Student* and *Military service* have a negative and highly significant effect on the dependent variable while being retired increase leisure satisfaction. Finally, results in Table 3 (not reported) show that Italy is characterized by considerable geographical differences: the North-West regions present positive and highly significant correlation with leisure satisfaction, whereas life satisfaction dramatically decreases in Southern regions.

It is worthwhile to stress that the estimated effects should be considered with care since they describe a correlation rather than cause-and-effect. With data at hand I cannot exclude the influence of omitted factors or that causality run in to opposite direction. However, the consistency of these results with other findings in the international literature (Demoussis, Giannakopoulos 2008; van Praag *et al.* 2003), obtained using panel data, is quite reassuring, except for household income. The evidence on family income might indicate that omitted variables and / or estimation problems in the imputation of household income through the statistical matching should guide the result. However, an economic explanation suggests that individuals with more family income are less satisfied with their leisure satisfaction because they do not like leisure satisfaction.

Moving on the relation between unpaid work and leisure satisfaction, controlling for the previous socio-economic variables, volunteering in the activities of an official volunteer service association is positively and significantly associated with higher leisure satisfaction. This result is consistent with the hypothesis that volunteering increases leisure satisfaction and in line with the hypothesis that volunteers are intrinsically motivated.

7.2 Friends' relationships satisfaction

The findings for friends' relationships satisfaction equations are shown in Table 4. It results that females are more satisfied whit their friends' relationships than males and that family status does appear to be an important determinant of friends' relationships satisfaction: married, divorced and widowed dummies present a positive and significant effect (at 5 percent level

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Table 3. Leisure satisfaction equations. Ordered probit estimation

	Workers		Non-workers	
	Coefficient	S. E.	Coefficient	S.E.
Volunteering	0.075***	0.126	0.051***	0.011
Female	-0.028***	0.010	0.008	0.008
Single, with partner	-0.055	0.053	0.046	0.038
Married	-0.001	0.013	-0.003	0.014
Divorced	-0.018	0.014	-0.030	0.021
Widowed	0.024	0.029	-0.037**	0.017
Age31-40	0.021*	0.013	0.020	0.023
Age41-50	0.089***	0.018	0.095***	0.017
Age51-65	0.106***	0.020	0.188***	0.020
Age>65	0.242***	0.057	0.269***	0.030
Family size	0.036***	0.005	-0.059***	0.008
Children0_5	-0.212***	0.008	-0.170***	0.015
Children6_12	-0.115***	0.009	-0.079***	0.013
Children13_17	0.022***	0.008	0.048***	0.010
Education	0.015***	0.002	0.005***	0.001
Working hours	-0.005***	0.001		
Household income (ln)	-0.193***	0.017	0.018	0.020
Health	0.153***	0.006	0.140***	0.005
Church attendance	0.045***	0.012	0.035***	0.009
Newspapers	0.093***	0.007	0.097***	0.012
Homeowner	0.086***	0.011	0.004	0.014
Meet friends	0.101***	0.003	0.103***	0.003
Self-employed	-0.100***	0.012		
Unemployed			0.006	0.014
Student			-0.057***	0.016
Military service			-0.135***	0.034
Retired			0.056***	0.011
Regional dummies	Yes		Yes	
Year dummies	Yes		Yes	
No. of observations	87803		115928	
Pseudo R-squared	0.034		0.034	
Log-likelihood	-99130.69		-129130.06	

Notes: The dependent variable *Leisure satisfaction* takes discrete values and is based on a recoded self-declared leisure satisfaction (4 if very happy, 2 quite happy, 3 not very happy, 4 not at all happy). The model is estimated with an ordered probit. Regressors legend: see appendix. Regional and years dummies are omitted from the table for reasons of space. The standard errors are corrected for heteroskedasticity and clustering of errors at the regional level. The symbols ***, **, * denote that the coefficient is statistically different from zero at the 1, 5 and 10 percent.

or more). Friends' relationships satisfaction falls with age dummies (working sample) while increases with education[14]. The significance of education when controlling for household income suggests that the benefit of education is not just in the contribution of human capital accumulation to income (returns to schooling).

Individuals with children aged 0 to 12 years are significantly less satisfied whit their friends' relationships while the presence of children aged 13 to 17 years have a positive effect. Living in extended families affects negatively friends' relationships satisfaction for workers. The number of hours spent at work has a positive effect while household income has a negative result, both statistically significant. The former suggests that workplace has a relational component, represented by the social relation with colleagues and other workers; the latter implies that individuals with more household income do not like to consume friends' relationship[15]. In non-working sample, household income is not statistically significant, but the sign is positive

Health status is highly significant as well as church attendance, reading newspapers and owning their home outright. As expected, the dummy for frequency of social interaction with friends is strongly positively correlated with friends' relationships satisfaction. This result seems to support the "fellow feeling" hypothesis of Smith, tested by Becchetti *et al.* (2008) for life satisfaction, according to which the intensity of the relational ties, or of the experience lived with friends, enhances the value of relational goods.

Being retired increase friends' relationships satisfaction while results in Table 5 (not reported) show that the North-West regions present positive and significant correlation with friends' relationships satisfaction, whereas friends' relationships considerably decreases in Southern regions[16].

Focusing on volunteering, active participation in the activities of an official volunteer service association is positively and significantly associated with higher friends' relationships satisfaction. This result is consistent with the hypothesis that volunteering increases friends' relationships satisfaction and in line with the indication that the identity

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[14] I also use dummies for educational qualification rather than for years of education. The results are similar (not reported).

[15] Using (not reported) as different functional forms household income and household income per capita and. dummies for the quintiles of household income within which individuals lie (not reported), the negative association between friends' relationships satisfaction and higher levels of family income is borne out.

[16] I break my samples down estimating separately for women and men (not reported). Some significant differences emerge. Family status is positive and significant for women, but not significant for men (except married) in working sample. An increase in working hours affects men positively, but not women. Being unemployment is negative and significant for men, while being retired is positive and significant for women.

Table 4. Friends' relationships satisfaction equations. Ordered probit estimation

	Workers		Non-workers	
	Coefficient	S. E.	Coefficient	S.E.
Volunteering	0.095***	0.015	0.087***	0.015
Female	0.068***	0.009	0.090***	0.009
Single, with partner	0.031	0.056	0.143*	0.085
Married	0.190***	0.017	0.219***	0.023
Divorced	0.052***	0.019	0.055**	0.027
Widowed	0.112***	0.030	0.160***	0.024
Age31-40	-0.040***	0.014	-0.011	0.022
Age41-50	-0.021	0.013	0.028	0.022
Age51-65	-0.020	0.016	0.027	0.024
Age>65	-0.101*	0.053	-0.017	0.040
Family size	-0.011*	0.006	0.005	0.006
Children0_5	-0.067***	0.012	-0.040**	0.019
Children6_12	-0.040***	0.012	-0.036***	0.012
Children13_17	0.099***	0.009	0.077***	0.010
Education	0.006***	0.002	0.006***	0.001
Working hours	0.001***	0.000		
Household income (ln)	-0.081***	0.025	0.024	0.022
Health	0.189***	0.005	0.189***	0.006
Church attendance	0.074***	0.010	0.059***	0.007
Newspapers	0.099***	0.010	0.128***	0.010
Homeowner	0.070***	0.014	0.057***	0.014
Meet friends	0.168***	0.005	0.221***	0.008
Self-employed	0.002	0.012		
Unemployed			-0.031	0.025
Student			-0.019	0.023
Military service			0.060	0.046
Retired			0.050***	0.019
Regional dummies	Yes		Yes	
Year dummies	Yes		Yes	
No. of observations	87803		115422	
Pseudo R-squared	0.041		0.079	
Log-likelihood	-81567.92		-112342.69	

Notes: The dependent variable *Friends' relationship satisfaction* takes discrete values and is based on a recoded self-declared leisure satisfaction (4 if very happy, 2 quite happy, 3 not very happy, 4 not at all happy). The model is estimated with an ordered probit. Regressors legend: see appendix. Regional and years dummies are omitted from the table for reasons of space. The standard errors are corrected for heteroskedasticity and clustering of errors at the regional level. The symbols ***, **, * denote that the coefficient is statistically different from zero at the 1, 5 and 10 percent.

and the genuineness components of volunteering as relational good are particularly relevant for friends' relationships satisfaction.

7.3 Economic situation satisfaction

The results for the economic situation satisfaction equations are shown in Table 6. Female respondents are less satisfied with economic situation than male respondents, in non-working sample. Evidence on marital status show a positive impact of marriage or single with partner and a negative impact of divorce. The age effect is decreasing for workers and U-shaped for non workers. Education has a positive impact on economic situation satisfaction but it is only significant at 10 percent for non workers. Family size has a significantly negative effect while the presence of children has a positive one. Working hours and household income increase economic situation satisfaction[17]. Moreover, the presence of a second earner in the household has a significantly positive effect, too.

Health status is highly significant as well as church attendance, reading newspapers and owning their home outright. As expected too, the dummy for frequency of social interaction with friends is strongly positively correlated with economic situation satisfaction.

The dummy for being *self-employed* reveals that that self-employed have much more economic situation satisfaction than employed workers. The dummy for *unemployment* has a negative and highly significant effect. This result seems in line with the evidence reported by many authors who point to unemployment as one of the main factors for unhappiness. Furthermore, being retired increase economic situation satisfaction

Results in Table 6 (not reported) show that the North-East regions present positive and significant correlation with economic situation satisfaction, whereas satisfaction with economic situation greatly decreases in Southern regions.

It is meaningful to stress that the estimated effects should be considered with care since they describe a correlation rather than cause-and-effect. However, the consistency of these

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[17] I also experiment (not reported) a different functional forms introducing household income and household income per capita, results show that family income increases individual economic situation satisfaction. Moreover, I use dummies for the quintiles of household income within which individuals lie (not reported). The reference category is composed of individuals who are in the third quintile of household income. Being below (above) the third quintile generates a negative (positive) and significant effect on leisure satisfaction. Thus, these results reflect higher economic situation satisfaction associated with higher levels of family income.

Table 6. Economic situation satisfaction equations. Ordered probit estimation

	Workers		Non-workers	
	Coefficient	S. E.	Coefficient	S.E.
Volunteering	0.065***	0.013	0.104***	0.022
Female	-0.009	0.008	0.053***	0.010
Single, with partner	0.040	0.059	0.134**	0.060
Married	0.209***	0.018	0.153***	0.028
Divorced	-0.109***	0.020	-0.122***	0.039
Widowed	0.053	0.035	0.079***	0.028
Age31-40	-0.039***	0.010	-0.138***	0.020
Age41-50	-0.083***	0.015	-0.175***	0.020
Age51-65	-0.134***	0.016	-0.170***	0.020
Age>65	-0.038	0.048	-0.128***	0.020
Family size	-0.106***	0.013	-0.131***	0.013
Children0_5	0.022*	0.012	0.018	0.011
Children6_12	-0.005	0.012	0.007	0.013
Children13_17	0.045***	0.012	0.038***	0.013
Education	0.024***	0.002	0.003*	0.001
Working hours	0.002***	0.000		
Household income (ln)	0.281***	0.037	0.538***	0.032
Second earner in house	0.084***	0.015		
Health	0.119***	0.006	0.105***	0.010
Church attendance	0.122***	0.013	0.065***	0.008
Newspapers	0.132***	0.012	0.112***	0.009
Homeowner	0.123***	0.021	0.116***	0.014
Meet friends	0.041***	0.005	0.046***	0.004
Self-employed	0.032***	0.009		
Unemployed			-0.468***	0.032
Student			-0.033	0.025
Military service			-0.082	0.057
Retired			0.085***	0.016
Regional dummies	Yes		Yes	
Year dummies	Yes		Yes	
No. of observations	87297		115422	
Pseudo R-squared	0.049		0.069	
Log-likelihood	-83761.01		-115124.98	

Notes: The dependent variable *Economic situation satisfaction* takes discrete values and is based on a recoded self-declared leisure satisfaction (4 if very happy, 2 quite happy, 3 not very happy, 4 not at all happy). The model is estimated with an ordered probit. Regressors legend: see appendix. Regional and years dummies are omitted from the table for reasons of space. The standard errors are corrected for heteroskedasticity and clustering of errors at the regional level. The symbols ***, **, * denote that the coefficient is statistically different from zero at the 1, 5 and 10 percent.

results with other findings in the international literature (Demoussis, Giannakopoulos 2008; van Praag *et al.* 2003), obtained using panel data, is quite reassuring[18].

Focusing on the relation between volunteering and economic situation satisfaction, controlling for the previous socio-economic variables, unpaid work in the activities of an official volunteer service association is positively and significantly associated with higher economic situation satisfaction. This result is consistent with the hypothesis that volunteering increases economic situation satisfaction and in line with the hypothesis that volunteers are extrinsically motivated.

7.4 Summery of effect directions

In this paragraph I summarize the effects of the explanatory variables on the examined domain satisfactions. The hypothesis that volunteering leads to more leisure, friends' relationships and economic situation satisfaction seems to be heavily supported by the data.

In working sample, empirical regularities in the determinants of domain satisfactions are: education, the presence of children aged 13 to 17 years, health status as well as church attendance, reading newspapers, owning their home outright and frequency of social interaction with friends. They have positive influences across domain satisfactions.

Regard the other independent variables, female exert a positive effect on friends' relationships satisfaction and negative impact on leisure satisfaction. Marriage is important for friends' relationships and economic situation satisfaction. A positive impact on friends' relationships satisfaction is identified for divorced and widowed. Moreover, economic situation satisfaction is affected negatively by divorced. Age is found to exert a positive effect on leisure satisfaction and a negative effect eon economic situation satisfaction

The presence of children aged 0 to 12 has a negative effect on leisure and friends' relationship satisfaction. Household size exerts a positive impact on leisure satisfaction and negative effect on friends' relationships and economic situation satisfaction. Working hours affect negatively leisure satisfaction and positively friends' relationships and economic situation satisfaction while household income has a negative effect on leisure and friends' relationships satisfaction and a positive effect on economic situation satisfaction. Finally,

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[18] I break my samples down estimating separately for women and men (not reported). Some significant differences emerge in working sample. Children dummies are positive and significant for men, but not significant for women. Being self-employed is positive and significant for men, but not for women.

self-employed has a detrimental effect on leisure satisfaction and a positive effect on economic situation satisfaction.

Regard the non-working sample, education, the presence of children aged 13 to 17 years, health status as well as church attendance, reading newspapers, owning their home outright, frequency of social interaction with friends and retired exert positive influences across domain satisfactions.

Female have a positive effect on friends' relationships satisfaction and on economic situation satisfaction. Marriage is important for friends' relationships and economic situation satisfaction. A positive impact on friends' relationships satisfaction is identified for divorced and widowed. Moreover, economic situation satisfaction is affected negatively by divorced and positively by widowed. Moreover, widowed has a negative impact on seizure domain. Age is found to exert a positive effect on leisure satisfaction while a U-shaped profile is identified on economic situation satisfaction.

Household size has a negative impact on leisure and economic situation satisfaction while household income exerts a positive effect on economic situation satisfaction. Finally, unemployment has a detrimental effect on economic situation satisfaction while being student and military is negative for leisure satisfaction.

8. Conclusion

The objective of this paper was to investigate the correlation between volunteering and subjective satisfaction responses of Italian people on three domain satistactions: leisure, friends' relationships and economic situation. The data employed was drawn from Istat's Multiscopo survey for the period 1993-2000. A order probit model was used as econometric strategy. The study showed that individuals who do volunteer work are more satisfied with their leisure, friends' relationships and economic situation. The paper interprets these results as an indication that the benefits from volunteering are a combination of the following reasons: i) intrinsic motivation; ii) extrinsic motivation; iii) relational goods. The other obtained results are in agreement with those reported in studies on domain satisfaction, except for household income that has a negative effect on leisure and friends' relationships satisfaction.

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Appendix A. Variables description

Variable	Description
Female	Dummy, 1 if female; 0 otherwise. **Reference group Male**
Single, with partner	Dummy, 1 if single with partner; 0 otherwise. **Reference group Single, no partner**
Married	Dummy, 1 if married ; 0 otherwise
Divorced	Dummy, 1 if divorced ; 0 otherwise
Widowed	Dummy, 1 if widowed ; 0 otherwise
Age31-40	Dummy, 1 if age is between 31 and 40; 0 otherwise. **Reference group Age14-30**
Age41-50	Dummy, 1 if age is between 41 and 50; 0 otherwise.
Age51-65	Dummy, 1 if age is between 51 and 65; 0 otherwise
Age>65	Dummy, 1 if age is above 65; 0 otherwise
Family size	Number of people who live in family
Children0_5	Dummy, 1 if the number of children is aged between 0 and 5 years; 0 otherwise. **Reference group No children**
Children6_12	Dummy, 1 if the number of children is aged between 6 and 12 years; 0 otherwise
Children13_17	Dummy, 1 if the number of children is aged between 13 and 17 years; 0 otherwise
Education	The variable is coded as: no education (0); completed elementary school (5); completed junior high school (8); completed high school (13); completed college (18)
Volunteering	Dummy 1, if unpaid activity for a social organization of volunteer service; 0 otherwise
Working hours	Weekly hours of paid work
Household income (ln)	Natural logarithm of imputed household income (sum of labour income, capital income and pensions)
Second earner in house	Dummy, 1 if there is more than one earner in the household; 0 otherwise
Health	Self-assessed state of health measured on a 1-5 scale (very poor=1, very good==5)
Church attendance	Dummy, 1 if the respondent goes to church at least once a week; 0 otherwise
Newspapers	Dummy, 1 if the respondent reads newspapers every day of the week; 0 otherwise
Homeowner	Dummy, 1 if the respondent owns the house where he lives; 0 otherwise
Unemployed	Dummy, 1 if the respondent is unemployed; 0 otherwise
Student	Dummy, 1 if the respondent is student; 0 otherwise
Retired	Dummy, 1 if the respondent is retired; 0 otherwise
Military service	Dummy, 1 if the respondent is due for call-up; 0 otherwise
Self-employed	Dummy, 1 if the respondent is employed as a self-employed, 0 otherwise
Meet friends	Frequency of meeting with friends measured on 1-6 scale (never=1, every day=6)