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Disability and life satisfaction in Italy

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1. Introduction

In the last decades, researchers aimed at providing an alternative representation of individual utility, focused their interest on subjective well-being (SWB), happiness and life satisfaction (Stiglitz, Sen and Fitoussi, 2009). In this context, life satisfaction measures how people evaluate their life as a whole rather than their current feelings. It captures a reflective assessment of which life circumstances and conditions are important for subjective well-being (OECD, 2012).

According to Diener *et al.* (1999: 277), subjective well-being has to be considered, rather than a specific construct, as a 'general area of specific interest', a broad category of phenomena that includes people's emotional responses, domain satisfaction, and global judgments of life satisfaction'. Even if, according to the literature in psychology, life satisfaction and happiness diverge, economists have used them as synonymous.

One can distinguish between subjective well-being in terms of life satisfaction as a response to questions and affective experience. The latter can be reconstructed by using different methods. The experience sampling method, recording participants' current circumstances and feelings and the day reconstruction method, where the participants are invited to reflect upon the previous day experiences with regards to selected episodes (Kahneman *et al.*, 2004). Moreover, one can distinguish experience based definition of well-being between hedonic conception of well-being, according to which pleasure and happiness can be considered as well-being, and a eudemonic view of well-being conceptualizing it in terms of meanings in life, experiences that are deemed good for the person and contribute to human growth (McMahan and Estes, 2011). A study on subjective well-being in terms of life satisfaction and in terms of affective experience and their test re-test correlations is provided by Krueger and Schkade (2008).

Stiglitz, Sen and Fitoussi (2009) have underlined the need of taking into account subjective measures of well-being together with objective measures to evaluate the quality of life while advocating for a shift towards policies and economic systems more oriented on well-being. The increasing literature focusing, in turn, on SWB, life satisfaction and specific domains of satisfaction, has been sometimes intersected with specific sub-groups of analysis, including disability. In the last decades, disability has become a relevant target-group for governments and non-governmental organizations with the aim of devising policies trying to improve the inclusion of disabled people into society. The European Disability Strategy 2010-2020 adopted in 2010, has also stressed that disabled people have the right to participate fully and equally in society and economy. Furthermore, disability is a relevant phenomenon and, whatever its causes, diseases, accidents or worsening of medical conditions (for example because of ageing), it may affect many aspects of human's life and deserves specific

investigations. As the literature shows there is a substantial gap at the disadvantage of disabled in terms of achieved subjective well-being.

The prevalence of disability may vary considerably across countries, and this may be partly due to different definitions of disability. According to World Bank, a worldwide estimate of about a 10-12% rate of disability seems reasonable, while according to the 2009 EU-SILC data people reporting activity limitations in EU are about 25% (Grammenos, 2011). In Italy, according to the National Institute of Statistics (ISTAT) Multipurpose survey, two millions and 600 thousands are classified as disabled in 2004-2005 (ISTAT, 2010b). ISTAT defines as disabled those who have serious limitations in at least one of the following dimensions: mobility, daily life activities, communication (sight, speech, and hearing). The share of disabled people on the population aged 6 or over is 4.8%: 3.3% of men and 6.1% of women. According to ISTAT analysis, 80% of disabled people are aged over 65 and the share of disabled people sharply increases for the elderly group of the population: from 5.45% of people aged from 65 to 69 to 44.5% of those aged 80 or over. Women are over represented amongst disabled people in the different age group of the population. The above data refer to not institutionalized disabled people, to them one should add about 190 thousands of disabled living in institutions (i.e. 0.4% of the Italian population). They are mainly women (72%) and over 65. The literature on disability in Italy has mainly focused on its definition (ISTAT, 2010b), its operationalization following the capability approach (Biggeri and Bellanca, 2010), the impact of disability on access to work (Addabbo, Krishnakumar, Sarti, 2014) and the interaction between disability, poverty and low income persistence (Parodi and Sciulli, 2008, 2012).

While the research activities on medicine and psychology have devoted attention to the specific situation of disabled people, the socio-economic literature includes only few papers analyzing this specific sub-group. This paper brings new evidence about life satisfaction of disabled people in Italy, analyzing information on people with functional limitations and health problems who live in households, as provided by the 2011 Italian National Statistical Office (ISTAT) Survey. An advantage of using this dataset is that all the individuals involved in the survey have long-term limitations, making the sample of disabled people more homogeneous with regards to the occurrence of disability. This is potentially relevant in terms of adaptation issues related to disabled subjective well-being perception. Moreover, the case of Italy could be particularly interesting because of the increasing ageing of Italian population and of the increase of elderly people not in good health.

In addition, this paper aims at analyzing different aspects of life satisfaction given the gap between disabled and not disabled people for some key dimensions. This purpose is linked to the relevance of the funds to support

people with disabilities, as the one on their right to work[1]. In order to guarantee an effective implementation of the measures in favour of disabled people, a significant economic effort is required. Unfortunately, the crisis and economic difficulties occurred in recent years led to limited economic resources, which need to be allocated according to the relevance of these specific dimensions. Therefore, this study put in light which aspects should be taken into account when allocating these resources.

In a first step, our analysis focuses on the predictors of four specific domains of life satisfaction: satisfaction in relations with relatives, in relations with friends, in economic conditions and in leisure time. The aim is to uncover factors (including supports during daily activities) affecting life satisfaction of disabled people, in order to identify more disadvantaged profiles and, hence groups for targeted policies. In a second step, the presence of unobservable factors jointly affecting the four satisfaction domains is taken into account to test the stability of estimation results.

This paper is divided as follows. In section 2, we refer to the literature on life satisfaction and disability. In section 3, we introduce the data analyzed and we describe the characteristics of the population. In section 4, we present the methodologies and the empirical models employed, while in section 5 the main empirical findings of the paper are summarized and in section 6 policies suggestions based on the results of this study are provided. Finally, section 7 wraps up the analysis with some concluding remarks.

2. Disability and life satisfaction: literature review

The economic literature focusing on SWB, life satisfaction and happiness has increased strongly in the last decades. Recent studies have particularly exploited both large datasets to enrich the set of factors to control for variability in response variables and the panel structure of data to control for the role of time-invariant individual effects, including personality.

Evidence on SWB, life satisfaction and happiness has, in turn, and from different perspectives, highlighted the role of income, personal characteristics (e.g. age, gender, ethnicity, personality)[2], socially developed characteristics (e.g. education, health, work)[3], time allocation (e.g. hours worked, care activities, community involvement and volunteering, exercise, religious activities)[4], attitudes and beliefs, relationships (including marriage, having children, seeing family and friends) and economic, social and political environment[5]. Even

[1] For further information, see Ministero del Lavoro (2012).
[2] See for example Plagnol and Easterlin, 2008, Dolan et al., 2008.
[3] See for example Salinas-Jimenez, Artes and Salinas-Jimenez, 2013.
[4] See for example Le and Miller, 2013.
[5] See for example Kim and Kim, 2013.

though results cannot be considered as conclusive, milestones from these studies suggest to consider the impact of income, relative income, health, personal and community relationships, employment and marital status in the analysis. The negative effect of bad health on life satisfaction can be both direct, leading to a lower level of life satisfaction, or indirect, by making people more pessimistic when reporting judgment on their life. This can induce, as the literature (Angelini, Cavapozzi, Corazzini and Paccagnella, 2012) highlights, scale biases.

When focusing on disability, the literature is more recent and limited. A relevant finding connected to activity limitations and ageing (then strictly connected with limitations in daily activities) concerns its U-shaped effect, for which higher well-being is found for younger and older individuals (Easterlin, 2006; Blanchflower and Oswald, 2008). In this context, analyzing older married adults, Freedman et al. (2012) find that disability negatively affects subjective well-being, and that well-being variability, because of disability, is greater for somatic symptoms and for satisfaction with health or memory, while the support of participation is only limited. Though with some heterogeneity in the dimension of the observed gap (with a smaller gap in Finland, Denmark, Sweden, The Netherlands, United Kingdom and Ireland than in Russia, Ukraine, Slovakia and Poland), van Campen & van Santvoort (2013) research on the degree of subjective well-being across 21 European countries using the European Social Survey data shows that disabled people have a lower level of subjective well-being than non-disabled ones, with a relevant positive effect on the reduction of the gap of personal resources (especially vitality and social supportiveness) within countries. Nevertheless Riis et al. (2005) find only small differences in the reported life satisfaction or happiness between disabled and non-disabled people.

A stream of the literature in medicine and psychology has looked at the association between physical disability and life satisfaction. Menhert et al. (1990) find evidence of a negative relationship, even if the extent of disability seems to be irrelevant in determining the extent of life satisfaction (Nosek, Fuhrer and Potter, 1995). A study by Kinney and Coyle (1992) shows that the most significant predictor of life satisfaction of physically disabled people is the leisure satisfaction, and that a significant role is played by financial status, self-esteem, health satisfaction, religious activities and marital status. Lucas and Salvador-Carulla (2012) examine life satisfaction among people with intellectual disability. They find that those living in residential institutions are less satisfied when compared with persons living in communities or living at home, and that health, relationships, home environment and work are relevant in determining life satisfaction. In a previous study, Schwartz and Rabinovitz (2003) find that life satisfaction of people with intellectual disability living in community residences is positively correlated with that of the community's staff. Miller and Chan (2008) find that life satisfaction of people with intellectual disability is significantly associated, among others, with social support and interpersonal skills. Jang

et al. (2004), investigate the role of social engagement in life satisfaction. Their results show that individuals with both disease and disability have significantly lower levels of participation in social activities and life satisfaction, and that social engagement explains more of life satisfaction when compared with individuals with a disease but no disability. Focusing on elderly, Tomás, Gutiérrez and Galiana (2014), highlighted the relevance of social support on life satisfaction. Mailhan et al. (2005), studying life satisfaction after a severe traumatic brain injury, find that disabled patients are on average slightly dissatisfied with their cognitive functions, physical abilities and self-esteem. Mollaoğlu et al. (2010) focus on the life satisfaction of elderly people with mobility disability. Their results show that disability affects significantly life satisfaction, and that age, education and level of perceived health are key-variables in explaining life satisfaction. Finally, Osberg et al. (1987) find that life satisfaction of elderly disabled people is strictly connected to functional ability.

The socio-economic literature includes, amongst others, a study by Grant and Chappell (1983) that investigates elderly disabled people attending three days hospital in Canada. They find a significant role by perceived health, ethnicity and differential services. More recently, the effect of disability on life satisfaction has mainly exploited the longitudinal dimension to focus on the relationship between life satisfaction and the adaptation of disabled people to the disability shock. An initial negative effect of disability on life satisfaction that fades away over time is found, amongst others, by Pagán (2010) on German Socioeconomic Panel data; partial adaptation is found by Oswald & Powdthavee (2008), while no evidence of this adaptation effect is found by Lucas (2007), exploiting the German Socio-Economic Panel and the British Household Panel Study Data. The degree of adaptation in the satisfaction on different domains of life has been found to be related to the type of disability by Powdthavee (2009). Moreover, although individuals achieve complete adaptation to disability in terms of global life satisfaction (5 years after the onset), this adaptation is not full in all domains of satisfaction (Pagán, 2012). Meggiolaro and Ongaro (2014) show the existence of gender differences in life satisfaction among older disabled people. An important result has been found by Boyce and Wood (2011): they show that personality traits prior to the onset of illness or disability may influence how well an individual psychologically adjusts to illness or disability.

Other studies focus on specific dimensions of life satisfaction. In particular, the socio-economic literature mainly investigates the association between disability and job-satisfaction. Uppal (2005) emphasizes how, after controlling for specific workplace characteristics, individuals with a mobility disability are no longer likely to be less satisfied than individuals without disabilities. This result raises some questions about the role of assistive technology, adaptation and employer accommodations. Malo and Pagán (2009) show that disabled individuals

are more likely to be more satisfied with their jobs than non-disabled ones, but only after controlling for some specific variables, including job-related characteristics. This finding could be explained by the lower expectations of disadvantaged groups about jobs.

3. Data and descriptive statistics

In order to measure disabled people's well-being we use the 2011 ISTAT Survey on 'Not Self Sufficient Individuals' Social Inclusion'. The survey, which oversamples elderly individuals with limitations, is directed to people with functional limitations and health problems who live in households and aims to analyze their social inclusion in everyday life (e.g. at school, at work and during leisure activities) and to understand which factors limit their full participation in society (e.g. lack of access and limitation in mobility). The survey has been developed within a project on disability ("Sistema di Informazione Statistica sulla Disabilità") created by a convention between ISTAT and the Italian Ministry of Labour and Social Policy. The project aims at building a system of indicators[6] to study the phenomenon of disability in Italy. Therefore, the survey employed looks at many aspects of social inclusion and it is in line with the perspective and the view of the ICF (International Classification of Functioning, Disability and Health), by the World Health Organization in 2001. This classification "attempts to achieve a synthesis, in order to provide a coherent view of different perspectives of health from a biological, individual and social perspective" (WHO, 2001, p. 20) and its goal is to remove the negative connotations associated with disability by using more positive terms to describe its characteristics.

People involved in the survey (through the CATI method, *Computer Assisted Telephone Interview*) are those between 6 and 80 years old who stated some functional limitations in a previous survey taken in 2004-2005 ('Health Conditions and Use of Health Services Survey'). The 2011 survey was conducted on a sample of 9,000 individuals (2,744 seriously limited in daily activities and 6,293 not seriously limited). The CATI method was directed to the person with limitations if able to respond or aged at least 14 years old, but caused some technical problems which led to a high number of non-responses. The response rate was 41% for seriously limited people and 32% for not seriously limited ones as the majority of people were unreachable given the elapsed time between the two surveys (only 14.5% of people involved declared not to be available for the interview).

The sample is composed of 3,121 persons between 11 and 87 years old and it should be representative of the 3 million and 947 thousand people of the same age. However, given the particular sampling design, the questionnaire is not aimed at people with limitations arisen after the period 2004-2005. The advantage of using

[6] It is available at www.disabilitaincifre.it

this sample is that all the individuals involved in the survey are disabled at least since 2004-2005, so we can consider them as people with long-term limitations. The structure of the survey makes the sample of disabled people more homogeneous with regards to the occurrence of disability and this is relevant in terms of adaptation issues related to disabled subjective well-being perception.

Individuals excluded from the analysis are those who have passed away in the meanwhile, have been institutionalized, have moved abroad or have declared very slight limitations in the preliminary interview in 2011. The sampling design is based on the assumption that the sample is representative of the whole Italian population. For assuming this, a weight is assigned to each interviewee and our estimations include this weight. This weight indicates how many units of the Italian population the single interviewee represents. In this case, the weight is built taken into account the fact that the sample is composed by those who stated limitations in a previous time of their life[7]. Because of the particularly high average age, the analysis of the potentially labour market active people is seriously limited in our sample.

Descriptive statistics[8] of the sample are presented in Table 1. Explanatory variables have been divided in four groups. With respect to idiosyncratic characteristics, about 80% of individuals analyzed are aged more than 65, while just 1.4% are younger than 36. 36.3% are men and 46% live in the South and Islands of Italy. Educational achievements are generally low: 85.5% of individuals have low (compulsory) education, while just 3.1% are highly educated. Looking at the covariates concerning the household structure and supports, we note that the average household size is 2.1. 35% of households are composed by only one member, while 42.4% of households consist in couples without children. Single-mothers represent 6.7% of the sample. With respect to supports (when needed), 44.3% of individuals may benefit from support by relatives (living outside the household) and 88% may benefit from support by others (namely friends, neighbors and others). The individuals' perception on the adequacy of their household economic resources during the last 12 months has been introduced as a proxy of household income. 52.1% of individuals declare that their household economic resources are adequate, while 41.5% declare they are scarce. Finally, we include in our analysis covariates on health and disability conditions of analyzed individuals. We include dummy variables measuring the level of health, dummy variables measuring the level of limitations in daily activities[9], and a discrete variable indicating the

[7] For more information on the sampling design, see ISTAT (2011) "Nota metodologica Indagine 'Inclusione sociale delle persone con limitazioni funzionali'", http://www.istat.it/it/archivio/77546.

[8] The software employed for the statistical analysis and the empirical models is Stata 13.

[9] Approximating the level of disability using information on limitations in daily activities is in the spirit of the social model of disability, for which disability is defined according to the interaction of the disabled individual with his/her impairments and/or health problems, and with the external environment (including technical and facility supports).

number of chronic diseases[10]. 9.9% state to be in good health, while 43.9% are in bad health; 17.3% do not experience limitations in daily activities, while 47.4% state serious limitations in daily activities.

[Table 1 here]

There is no a clear consensus on what life satisfaction is and represents and about its components. This concept can potentially involve many different dimensions of life. For practical purpose and given the information provided by our data, we define life satisfaction as the reported satisfaction in four specific domains: relations with relatives, relations with friends, economic conditions and leisure time.

Table 2 reports the degree of satisfaction in different areas of life satisfaction for individuals aged 25-87, including the four domains of life satisfaction analyzed in the first step of analysis. It clearly emerges that while sampled individuals are highly satisfied about the relatives relations domain, they are, on average, sufficiently satisfied about the friends relations domain, and just little/enough satisfied in terms of economic conditions and leisure time.

[Table 2 here]

When comparing the situation of disabled people with non-disabled people, we find that the former are less satisfied than the latter ones. Looking at the more comparable and recent data available (i.e. the 2012 ISTAT 'Aspects of Daily Life', 'Aspetti di vita quotidiana'[11]), it results that life satisfaction of individuals with limitations is lower from 12% to 26% (in relative terms) when compared to life satisfaction of individuals without limitations (Table A1).

4. Methodology

4.1 The determinants of life satisfaction: an ordered probit model approach

The analysis of the various dimensions of self-reported life satisfaction of disabled people is investigated applying a standard approach. Let be Y_k^* indicating a latent, unobserved variable corresponding to satisfaction, where k refers, respectively, to the dimensions: relatives relations (R), friends relations (F), economic situation (E) and leisure time (L). This indicator is assumed to depend linearly on a set of exogenous characteristics X_K, such as:

(1) $Y_k^* = f(X_k)$

[10] The degree of correlation among this set of control variables is rather limited and never exceeds 0.47.

[11] The 2012 ISTAT survey 'Aspects of Daily Life' is potentially useful to investigate life satisfaction of both disabled and non-disabled people (ISTAT, 2012). However, we rely on the 2011 ISTAT Survey on 'Not Self Sufficient Individuals' Social Inclusion', because of the availability of more specific variables concerning disability and supports to disabled people.

However, since the latent variable is unobservable, we rely on information from our survey that provides information on an ordered indicator, Y_k. More formally:

(2) $Y_{ik} = \beta_k' X_k + \varepsilon_{ik}$

where β is a vector of unknown parameters to be estimated, ε_k is the error term and, finally:

(3) $$Y_{ik} = \begin{cases} 1 \text{ if } Y_k^* \le \mu_{k1} \\ 2 \text{ if } \mu_{k1} < Y_k^* \le \mu_{k2} \\ 3 \text{ if } \mu_{k2} < Y_k^* \le \mu_{k3} \\ 4 \text{ if } Y_k^* > \mu_{k3} \end{cases}$$

and μ_{k1}, μ_{k2}, μ_{k3}, are a set of threshold parameters to estimate. Under the normality assumption of the residual ε_k, the corresponding model is a standard ordered probit specification.

The set of covariates X includes control variables commonly used in the analysis of individual satisfaction. Specifically, we consider four groups of variables. The first group concerns personal (or idiosyncratic) covariates: age, gender, area of residence and educational attainment. The second group includes covariates concerning household structure and support, (e.g. household size and household type) and variables controlling the effect of being supported by relatives and friends when necessary. A third group of covariates includes dummy variables controlling for the self-reported evaluation of the adequateness of economic resources and, finally, a fourth group consists of covariates concerning disability and health status (i.e. disability, measured in terms of limitations in daily activities, health status and number of chronic diseases).

The interpretation of the coefficients in the ordered probit model is more complicated than in ordinary regression settings. In order to attach meaning to our estimation results, we calculate the average partial effects (APE)[12]. They are computed by evaluating the partial effect of a specific covariate for each individual and averaging the computed effects.

It follows that APE for a specific control variable j and the specific satisfaction level (s) may be expressed as indicated below:

(4) $$APE_s(X_j) = \frac{1}{n}\sum_{i=1}^{n}\left[f(\mu_{s-1} - \beta' X_i) - f(\mu_s - \beta' X_i)\right]\beta_j$$

We also compute a set of predicted probabilities with regard to the probability of a sufficient degree of satisfaction on the different dimensions and with reference to a specific characteristic, holding all the other variables at their sample means. Because of the cross-sectional nature of our dataset a potentially relevant issue

[12] An advantage of using the APE is given by their better stability when compared with estimated parameters to the presence of uncontrolled unobservable factors.

remains unexplored, i.e. the existence of unobservable factors driving the satisfaction of disabled individuals. Even though we are unable to directly handle the unobservable heterogeneity issue, we can test if the k-dimensions of life satisfaction are affected by common unobservable factors.

4.2 The role of unobservable factors: a multivariate probit model approach

To test the presence of unobservable factors that simultaneously affect the various dimensions of life satisfaction, we adopt a multivariate (MV) probit model, for which *k* probit models are simultaneously estimated, as well as the correlation among their respective error terms. The magnitude and the significance of the correlation terms may reveal the presence of underlying unobservable variables driving the satisfaction outcomes.

To adopt a MV probit model the ordinal responses used in the ordered probit models must be collapsed in binary variables. Specifically, ordinal responses corresponding to "very" and "sufficiently" satisfied are collapsed in "satisfied", while "little" and "not at all" satisfied are collapsed in "not satisfied". The resulting binary response variable (*Z*) takes value one if the latent variable *Z** is greater than zero. It follows that for each individual we estimate:

(5) $Z_{iR} = X_R'\gamma_R + \nu_{iR}$ where $Z_{iR} = \begin{cases} 1 \text{ if } Z^*_{iR} > 0 \\ 0 \text{ otherwise} \end{cases}$

(6) $Z_{iF} = X_F'\gamma_F + \nu_{iF}$ where $Z_{iF} = \begin{cases} 1 \text{ if } Z^*_{iF} > 0 \\ 0 \text{ otherwise} \end{cases}$

(7) $Z_{iE} = X_E'\gamma_E + \nu_{iE}$ where $Z_{iE} = \begin{cases} 1 \text{ if } Z^*_{iE} > 0 \\ 0 \text{ otherwise} \end{cases}$

(8) $Z_{iL} = X_L'\gamma_L + \nu_{iL}$ where $Z_{iL} = \begin{cases} 1 \text{ if } Z^*_{iL} > 0 \\ 0 \text{ otherwise} \end{cases}$

where X_k is the matrix of covariates identical among individuals, γ_k is a vector of unknown parameters to be estimated and ν_k is an error term. Besides:

(9) $E[\nu_{iR}] = E[\nu_{iF}] = E[\nu_{iE}] = E[\nu_{iL}] = 0$

(10) $Var[\nu_{iR}] = Var[\nu_{iF}] = Var[\nu_{iE}] = Var[\nu_{iL}] = 1$

$$Cov[\nu_{iR}, \nu_{iF}] = \rho_{RF;} Cov[\nu_{iR}, \nu_{iE}] = \rho_{RE;} Cov[\nu_{iR}, \nu_{iL}] = \rho_{RL}$$

(11)

$$Cov[\nu_{iF}, \nu_{iE}] = \rho_{FE;} Cov[\nu_{iF}, \nu_{iL}] = \rho_{FL;} Cov[\nu_{iE}, \nu_{iL}] = \rho_{EL}$$

Assuming normally distributed additive stochastic terms, each individual probability of being satisfied can be modeled as a probit equation in which the probability of being satisfied is explained by exogenous variables that affect individual satisfaction. The MV probit model is estimated using a simulated maximum likelihood (SML) estimator (i.e. the Geweke-Hajivassiliou-Keane (GHK) simulator). Under standard conditions, it is consistent as the number of observations and the number of draws tend to infinity. It is also asymptotically equivalent to the true maximum likelihood estimator as the ratio of the square root of the sample size to the number of draws tends to zero (Cappellari and Jenkins, 2003).

5. Results

The ordered probit model estimates allow us to analyze the effect of the different factors affecting the level of satisfaction with respect to the different dimensions of well-being observable in the survey. Our results refer to individuals aged 25-87. Table 3 reports the average partial effects calculated on the basis of the ordered probit model for the probability of being sufficiently satisfied about each of the four domains[13], whereas the results on the other levels of satisfaction are reported in the Appendix (Tables A.2, A.3 and A.4). In addition, Table 4 presents a selection of results on the predicted probabilities with regard to health status, household structure and other personal characteristics referred to the "sufficiently satisfied" level of satisfaction[14].

Giving a preliminary look at the determinants of the life satisfaction domains analyzed, it emerges that variables concerning household structure and disability status affect life satisfaction more significantly than personal and income variables. In addition, older disabled people (over 65) are, on average, more likely to be sufficiently satisfied than younger disabled people (consistently with some previous evidence, e.g. Easterlin, 2006). Disabled people living in the South/Islands experience a higher probability of being sufficiently satisfied with relatives relations; being medium-high educated increases the probability of being sufficiently satisfied in the economic

[13] We run auxiliary specifications including additional control variables referred to social participation and cultural aspects. These variables have usually resulted not significant, with some exceptions when focusing on satisfaction with leisure time. In any case main explanatory variables remained quite stable when controlling for those additional variables. Auxiliary estimation results are available upon request.

[14] We focus on the level "sufficiently satisfied" as it represents the modal value in the distribution of life satisfaction (with the exception of the economic dimension). The effect of covariates on life satisfaction is sometimes non-linear, and estimation results presented in the Appendix also deserve attention.

condition domain; the perceived adequacy of household's economic resources does not affect the satisfaction in the domains analyzed here; and, finally, being seriously limited in daily activities negatively affects life satisfaction in the dimension of relations with friends and leisure time.

A deeper look at the results provides further considerations. Being older positively affects all dimensions apart from family relations. The average partial effects show an increase of 10.2% of the probability of being sufficiently satisfied in the economic condition dimension, while the increase is equal to 0.4% for the satisfaction in the relations with friends and 3.5% for the satisfaction with leisure time. On the other hand, those who are older than 65 are 4.7% less likely to be sufficiently satisfied with their relatives. On the contrary, being aged less than 36 does not significantly affect the probability of being sufficiently satisfied in the dimensions analyzed.

The predicted probability of being sufficiently satisfied in the economic dimension increases with age, as Table 4 shows.

We do not find evidence of gender duality in the investigated domains of life satisfaction, with the exception of a positive effect of being male on the probability of being sufficiently satisfied in the leisure time dimension (Table 3). By analyzing the predicted probabilities of being sufficiently satisfied in the different dimensions by gender, a higher predicted probability for men can be detected with reference to satisfaction with leisure time (42.7% for male and 41% for female) and economic conditions (41.7% for male and 39.6% for female) (Table 4).

As anticipated, the territorial duality, quite surprisingly, is limited to the relations with relatives domain and, more specifically, living in the South/Islands increases the probability of being sufficiently satisfied by 2.2%. This finding is possibly related to social and cultural aspects differentiating the Italian regions in terms of personal relations. Accordingly, the predicted probability of being sufficiently satisfied in the relative relations is higher for those living in the South/Islands of Italy compared to those living elsewhere in Italy (45.3% against 42.4%), while the opposite is true for the economic conditions (Table 4).

Territorial variables may deserve further considerations. Italian regions differ in terms of both total social expenditure and social expenditure devoted to support disabled people (Agovino and Parodi 2014). The non-significance of regional variables with respect to the economic domain of life satisfaction is possibly suggesting that differences in social expenditure do not matter for economic satisfaction of disabled people.

Finally, for what concerns idiosyncratic characteristics, we find that a higher level of education is associated with higher levels of satisfaction in the economic condition domain. For example, being highly educated increases by 12.3% the probability of being sufficiently satisfied in that dimension with a predicted probability

of 52.5%. Being medium educated increases the probability of being sufficiently satisfied with the economic conditions by 8.3% and the corresponding predicted probability is 47.9%, while the predicted probability of being sufficiently satisfied in this dimension is 38.8% if one has a low level of education. This finding is possibly related to the standard positive association of higher educational attainments with higher income levels and would call for higher investment in education.

Focusing on the average partial effects related to the household structure variables, results show that household size increases the probability of being sufficiently satisfied in the economic conditions by 3.5% and decreases the probability of being satisfied with regards to relations with relatives by 2.4%. The predicted probability of being sufficiently satisfied with one's relatives relations ranges from 46.8% for singles to 21.7% for households with 9 components, whereas the predicted probability of being sufficiently satisfied with regards to one's economic situation increases with household's size (from 41.7% for single to 61.8% for households with 9 components). For what concerns the household type, being a couple without children decreases by 5% the probability of being sufficiently satisfied in the interaction with relatives, but does not significantly affect other dimensions. Being a couple with children does not affect the probability of being sufficiently satisfied in the different dimensions when compared to the situation of individuals living alone (our base-category).

Single-mothers are 4.9% and 6.4% less likely to be sufficiently satisfied in the economic dimension and in their relations with relatives respectively[15]. Conversely, being single-father increases the probability of being sufficiently satisfied with the economic dimension by 9.9%.

The predicted probability for single-mothers of being sufficiently satisfied with the economic condition, keeping all the other variables at their mean, is 36.3%, against 52.3% for single-fathers, and 37.2% for couples with children and 40.7% for couples without children (Table 4). This indicates a gender duality issue in the satisfaction with economic conditions domain for single-parents.

Variables measuring the effect of being supported in case of necessity positively affect life satisfaction of people in terms of economic conditions and leisure time. If, in case of need, individuals can rely on the support by friends, neighbors or others, but not from relatives not living with them, the probability of being sufficiently satisfied in the economic conditions increases by 7.7% and by 6.4% if instead supported by relatives. Being supported by people other than relatives increases the probability of being sufficiently satisfied in leisure time by 2.7% and by 3.7% if supported by relatives. Being supported by people other than relatives however reduces the

[15] Meggiolaro and Ongaro (2014), analyzing a whole sample of Italian elderly people, do not find evidence that single-mothers are less satisfied with their life when compared to other family types, except when compared with couples living alone. In addition, data from the 2012 ISTAT 'Aspects of Daily Life' show that, on average, non-disabled single-mothers are more satisfied than disabled single-mothers.

probability of being sufficiently satisfied in the interactions with relatives. In addition, being supported by relatives decreases the probability of being sufficiently satisfied in the relations with friends. From a policy perspective, this finding potentially suggests that providing non-monetary support (including social services easing the mobility of disabled people) would be effective in increasing life satisfaction, especially in those domains requiring freedom of movement. This would be particularly relevant for disable people living alone or those for which relatives and/or friends cannot provide support.

Looking at the dummy variables approximating the income situation, our findings show their irrelevance in affecting a sufficient level of satisfaction with respect to relations with relatives and friends (Table 3). Also, predicted probabilities do not change significantly with regard to people's perception of their own resources (whether scarce or adequate). People with adequate economic resources have a predicted probability of being sufficiently satisfied with their leisure time of 43.6%, against 38.8% of those who state to have scarce and 40.1% of those with insufficient economic resources.

Finally, the impact of being in bad health on life satisfaction, controlling for dummy variables approximating the health status, is negative in all dimensions, except for the relations with relatives. People in bad health are less likely to be sufficiently satisfied with their economic conditions (11.1%), with their leisure time (5%), and with their relations with friends (1.7%), while their probability of being sufficiently satisfied with their relatives increases by 5.1%. Also being in a fair health condition (with respect to being in good health) decreases the probability of being sufficiently satisfied with the economic conditions, even if the negative effect is lower, as expected, for those with a worse health status. This negative impact of bad health on these three dimensions of well-being are also reflected in the lower predicted probabilities of being sufficiently satisfied for those who are in bad health, especially with regard to the economic dimension (36.1%) and with regard to leisure time (38.2%).

Being seriously limited in daily activities negatively affects the sufficient degree of satisfaction with leisure time and friends relations, while it does not affect other dimensions. This effect is more relevant on the probability of being sufficiently satisfied in leisure time that decreases by 11.7% than on the probability of being sufficiently satisfied with friends (1.1%). This result is reflected in the predicted probabilities: people with serious limitations have a predicted probability of being sufficiently satisfied with their leisure time of 37.4%, against 42.8% for those who state to have some but not serious limitations, and 47.9% for those who state to have no limitations.

Finally, as expected the probability of being satisfied in all dimensions analyzed decreases with the number of chronic diseases.

[Table 3 & 4 here]

Table 5 reports the correlation among the error terms of the analyzed satisfaction dimensions. On one side we find that whatever pair of dimensions (and model specification) is chosen, the correlation exists and it is significant at 1% level. On the other side, the magnitude of the correlations diverges across pairs of dimensions, and tends to be weak or moderate. It is moderate for the dimensions strictly related with social interactions like relations with relatives and friends (0.379), while it is weak for other pairs (from 0.287 for the E-L combination to 0.113 for the R-L combination). This suggests that unobservable factors commonly affect the satisfaction levels of the various dimensions analyzed, even though this effect is relatively small in magnitude. Among unobserved common factors, we could include personality traits, as well as other specific cognitive and non-cognitive skills that usually drive individuals' life outcomes. This could explain, for example, the smaller correlation between relations with relatives and economic situation, and relations with relatives and leisure time, possibly because personality traits involved in those dimensions are less connected than those involved in the former case. Moreover, the joint LR-test of zero correlation among different dimensions is strongly rejected (Table 6).

[Table 5 & 6 here]

6. Policies implications

By comparing the level of satisfaction with regards to different dimensions of individual well-being, this study shows a relevant gap at the disadvantage of people with limitations and performs a deeper analysis on the individual, family and environmental factors that can be related to their lower level of satisfaction.

The positive effect of higher educational attainment on satisfaction would call for a higher investment in education to positively affect life satisfaction. Higher investment in education should be aware of the lower access to education for people with disabilities and, within the disabled population, of the higher risk to have a lower level of education for specific types of disabilities (like intellectual and developmental disabilities)[16]. A higher level of education can also have a positive effect on individual earnings leading to a higher satisfaction with regards to this dimension of life. Turning to the economic dimension attention should be devoted both to active labour market policies that could enhance disabled access to employment (given disabled lower access to employment) and to elderly disabled pensions (more likely to be lower than the average given the higher likelihood that disabled face interrupted work profiles over their life cycle and their lower access to paid

[16] Jones (2010), Thoma *et al.* (2011).

employment)[17]. Labour market policies should also be aware of the higher risk of being excluded from paid labour faced by disabled and, within the disabled population, by particular groups.[18]

Health status is confirmed to be a relevant predictor of life satisfaction especially as far as the satisfaction with economic conditions and leisure time are concerned. The positive effect of health on the satisfaction on different dimensions of life would therefore suggest specific actions devoted to improve the health conditions of the population with special regards to disabled people.

Descriptive statistics show a higher gap in the satisfaction from leisure and social interaction for people with limitations. This relevant gap can be addressed on one hand by extending social policies devoted to provide access to leisure activities and opportunities of social interaction for people with limitations, taking into account the specific limits related to each type of disability. For instance, to this aim, policies removing environmental barriers can be particular effective in improving the outdoor activities of disabled people with specific difficulties in mobility and mental health disabled's social interaction could benefit from the supply of high quality community centres or organized social activities.

The multivariate analyses carried out in this study highlight the relevance of mutual support in enhancing disabled people's satisfaction with regards to economic, leisure and interaction dimensions of life. To improve their satisfaction with these dimensions of life by allowing people to take into account the needs of not self sufficient friends and relatives, policies ensuring a better balance between private and working life should be promoted. This can be achieved for instance by improving the availability and take up of parental leaves and by introducing working time flexibility. In a gender perspective, this is particularly relevant in a country like Italy where the larger care load for not self sufficient individuals is provided by women and a recent pension reform has increased women's retirement age leading to a reduction of time to be devoted to elderly relatives more likely to be not self sufficient and needing care.

7. Conclusions

This paper analyzes life satisfaction of disabled people in Italy who appear to be characterized (according to the available data that allow a comparison) by a lower level of satisfaction in different dimensions of life than not disabled ones. In order to further investigate the variables affecting this lower level of satisfaction we focus on people with functional limitations and health problems and use a set of microdata from the ISTAT Survey on

[17] On the disability wealth penalty and on pensions gap by disability status see McKnight (2014).

[18] There is a wide literature suggesting a higher risk to be excluded from paid work for disabled people. Within the disabled population, individuals with mental health problems show a significant lower access to the labour market (Jones et al. 2006a, 2006b; Addabbo, Krishnakumar and Sarti, 2014).

‘Not Self Sufficient Individuals' Social Inclusion’ directed to people with functional limitations and health problems that aims to analyze their social inclusion in everyday life (e.g. at school, at work and during leisure activities) and to understand which factors limit their full participation in society (e.g. lack of access and limitation in mobility).

Multivariate analyses allow us to detect factors that expose more to the risk of not being sufficiently satisfied in four relevant dimensions of life satisfaction, with regards to relative relations, friends relations, economic conditions and leisure time, to allow a better targeting of public policies aimed at increasing the level of satisfaction of disabled people in their life conditions. The average partial effects and the predicted probabilities based on the estimation of ordered probit models confirm a higher level of life satisfaction for older disabled people, in particular with their economic conditions. Similarly, the level of satisfaction with economic conditions increases with the level of education attained.

Though gender in itself does not appear to affect the level of satisfaction in the different domains, it seems to be relevant in its interaction with the household type: lone mothers show in fact a lower probability of being sufficiently satisfied with their economic conditions.

Health status is confirmed to be a relevant predictor of life satisfaction especially as far as the satisfaction with economic conditions and leisure time are concerned. More specifically, being severely limited in daily activities negatively affects the satisfaction with leisure time and with interaction with friends.

Our findings are in line with the literature, showing lower economic resources on average for lone mothers and a negative effect of bad health on the level of satisfaction in the economic conditions. Mutual support (that the microdata used allow to observe) is also found to have a positive effect on life satisfaction. Based on the results of our study a range of public policies can be suggested, from improving the balance between working and private life to policies enhancing the level of education and health.

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Appendix

[Table A1, A2, A3 & A4 here]

table
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Table 1 - Descriptive statistics

		Mean	Std Dev.	Min.	Max.
Idiosyncratic	Aged less than 36	0.014	0.119	0.0	1.0
	Aged 36-50	0.049	0.216	0.0	1.0
	Aged 51-65	0.141	0.348	0.0	1.0
	Aged more than 65	0.796	0.403	0.0	1.0
	Male	0.363	0.481	0.0	1.0
	North-West	0.173	0.378	0.0	1.0
	North-East	0.171	0.377	0.0	1.0
	Centre	0.196	0.397	0.0	1.0
	South-Islands	0.460	0.498	0.0	1.0
	Low educated	0.855	0.352	0.0	1.0
	Medium educated	0.113	0.317	0.0	1.0
	Highly educated	0.031	0.174	0.0	1.0
Household structure and supports	Household size	2.091	1.018	1.0	9.0
	Single	0.350	0.477	0.0	1.0
	Couple with children	0.148	0.355	0.0	1.0
	Couple without children	0.424	0.494	0.0	1.0
	Single-father	0.011	0.104	0.0	1.0
	Single-mother	0.067	0.251	0.0	1.0
	Supported by relatives	0.443	0.497	0.0	1.0
	Supported by friends	0.880	0.325	0.0	1.0
Economic resources	Very good economic resources	0.014	0.119	0.0	1.0
	Adequate economic resources	0.521	0.500	0.0	1.0
	Scarce economic resources	0.415	0.493	0.0	1.0
	Insufficient economic resources	0.049	0.217	0.0	1.0
Health and Disability	Good health	0.099	0.299	0.0	1.0
	Fair health	0.462	0.499	0.0	1.0
	Bad health	0.439	0.496	0.0	1.0
	No limited in daily activities	0.173	0.379	0.0	1.0
	Limited in daily activities	0.353	0.478	0.0	1.0
	Seriously limited in daily activities	0.474	0.499	0.0	1.0
	Number of chronic diseases	3.791	2.208	0.0	13.0

Source: our elaboration based on 2011 ISTAT survey data

Table 2. Satisfaction levels in four domains of life satisfaction - Individuals aged 25-87

	Relatives Relations		Friends Relations		Economic Conditions		Leisure Time	
Level	Obs.	%	Obs.	%	Obs.	%	Obs.	%
Not at all (= 0)	83	2.83	232	7.94	244	8.35	379	12.98
Little (= 1)	237	8.09	593	20.29	1,426	48.80	1,057	36.20
Sufficiently (= 2)	1,235	42.14	1,297	44.39	1,176	40.25	1,155	39.55
Very (= 3)	1,376	46.95	800	27.38	76	2.60	329	11.27
	Mean	Std Dev.	Mean	Std Dev.	Mean	Std Dev.	Mean	Std Dev.
Satisfaction	2.332	0.744	1.912	0.887	1.371	0.673	1.491	0.857

Source: our elaboration based on 2011 ISTAT survey data

Table 3 Average partial effects based on ordered probit model estimates: SUFFICIENTLY SATISFIED

		Relatives Relations			Friends Relations			Economic Conditions			Leisure Time		
		Coef.	Std. Err.	Sign.	Coef.	Std. Err.	Sign.	Coef.	Std. Err.	Sign.	Coef.	Std. Err.	Sign.
Personal	Aged less than 36	-0.034	0.046		0.000	0.004		-0.100	0.068		0.037	0.024	
	Aged 36-50							base-category					
	Aged 51-65	-0.018	0.023		-0.001	0.003		0.033	0.036		0.040	0.016	**
	Aged more than 65	-0.047	0.022	**	0.004	0.001	***	0.102	0.034	***	0.035	0.019	*
	Male	-0.002	0.009		0.000	0.001		0.019	0.015		0.014	0.008	*
	North-West	-0.012	0.015		0.000	0.000		0.032	0.021		-0.008	0.013	
	North-East	-0.001	0.015		0.000	0.001		0.019	0.022		0.018	0.012	
	Centre							base-category					
	South-Islands	0.022	0.011	**	0.000	0.001		-0.014	0.018		-0.001	0.010	
	Low educated							base-category					
	Medium educated	0.000	0.014		0.000	0.001		0.083	0.020	***	0.009	0.012	
	Highly educated	0.014	0.022		-0.001	0.003		0.123	0.035	***	0.020	0.021	
Household structure	Household size	-0.024	0.005	***	0.000	0.000		0.035	0.008	***	0.006	0.005	
	Single							base-category					
	Couple with children	-0.028	0.020		-0.002	0.003		-0.041	0.028		-0.014	0.018	
	Couple without children	-0.050	0.012	***	0.001	0.002		-0.009	0.016		0.005	0.009	
	Single-father	-0.082	0.057		-0.029	0.028		0.099	0.060	*	-0.007	0.036	
	Single-mother	-0.064	0.025	***	0.000	0.000		-0.049	0.030	*	-0.001	0.016	
	Being supported by relatives	-0.014	0.009		-0.072	0.007	***	0.064	0.013	***	0.037	0.006	***
	Being supported by others	-0.139	0.017	***	-0.004	0.003		0.077	0.020	***	0.027	0.010	***
Income	Very good economic resources							base-category					
	Adequate economic resources	0.001	0.036		-0.008	0.013					-0.023	0.041	
	Scarce economic resources	0.015	0.034		-0.009	0.014					-0.069	0.045	
	Insufficient economic resources	0.004	0.041		-0.008	0.014					-0.057	0.049	
Health and Disability	Good health							base-category					
	Fair health	0.029	0.012	**	-0.004	0.004		-0.052	0.024	**	0.002	0.014	
	Bad health	0.051	0.009	***	-0.017	0.009	*	-0.111	0.026	***	-0.050	0.019	***
	No limited in daily activities							base-category					
	Limited in daily activities	-0.003	0.013		-0.001	0.002		0.024	0.019		-0.063	0.014	***
	Seriously limited in daily activities	-0.010	0.015		-0.011	0.006	*	0.020	0.021		-0.117	0.016	***
	Number of chronic diseases	0.007	0.002	***	0.000	0.000		-0.022	0.004	***	-0.009	0.002	***

Table 4 - Predicted probabilities of being sufficiently satisfied with regards to individual and household characteristics

Characteristics		Relatives Relations	Friends Relations	Economic Conditions	Leisure Time
Personal	Aged less than 36	0,453	0,496	0,211	0,426
	Aged 36-50	0,481	0,49	0,311	0,372
	Aged 51-65	0,466	0,497	0,346	0,428
	Aged more than 65	0,429	0,497	0,423	0,416
	Male	0,437	0,497	0,417	0,427
	Female	0,439	0,497	0,396	0,41
	North-West	0,415	0,496	0,435	0,405
	North-East	0,428	0,496	0,422	0,435
	Centre	0,429	0,497	0,401	0,414
	South-Islands	0,453	0,497	0,386	0,413
	Low Educated	0,437	0,497	0,388	0,414
	Medium Educated	0,438	0,497	0,479	0,425
	High education	0,453	0,495	0,525	0,438
Household Structure	Household size: single	0,468	0,492	0,417	0,416
	Household size: 2 components	0,440	0,497	0,400	0,415
	Household size: 3 components	0,413	0,497	0,438	0,422
	Household size: 4 components	0,382	0,496	0,475	0,429
	Household size: 5 components	0,349	0,494	0,510	0,436
	Household size: 6 components	0,316	0,491	0,543	0,442
	Household size: 7 components	0,282	0,487	0,572	0,448
	Household size: 8 components	0,249	0,483	0,597	0,454
	Household size: 9 components	0,217	0,478	0,618	0,459
	Couple with children	0,441	0,497	0,372	0,399
	Couple without children	0,415	0,495	0,407	0,422
	Single-father	0,387	0,473	0,523	0,408
	Single-mother	0,404	0,493	0,363	0,415
	Being supported by relatives	0,508	0,485	0,366	0,413
	Being supported by others	0,429	0,474	0,382	0,397
Income	Very good economic resources	0,429	0,489		0,458
	Adequate economic resources	0,431	0,497		0,436
	Scarce economic resources	0,447	0,497		0,388
	Insufficient economic resources	0,435	0,497		0,401
Health & Disability	Good health	0,384	0,49	0,482	0,438
	Fair health	0,425	0,496	0,426	0,44
	Bad health	0,461	0,493	0,361	0,382
	No limits in daily activities	0,444	0,494	0,384	0,479
	Limited in daily activities	0,441	0,496	0,41	0,428
	Seriously limited in daily activities	0,433	0,493	0,406	0,374

Source: our elaboration based on 2011 ISTAT survey data

Table 5 Correlation among error terms

Dimension	Relatives relations	Friends relations	Economic Conditions
Friends relations	0.379		
	0.037		
Economic Conditions	0.120	0.162	
	0.037	*0.032*	
Leisure time	0.113	0.286	0.287
	0.036	*0.030*	*0.029*

Source: our elaboration based on 2011 ISTAT survey data. Note: standard errors in cursive.

Table 6 LR-tests for joint correlation among error-terms

ρRF = ρRE = ρRL = ρFE = ρFL = ρEL = 0	chi2(6)	
	298.97	***

Source: our elaboration based on 2011 ISTAT survey data

Table A1. Average satisfaction in four domains: Comparative Analysis

	No limitations		With Limitations		
Satisfaction with	Mean	S.D.	Mean	S.D.	Gap*
Relative Relations	2,31	0,62	2,19	0,71	0,12
Friends Relations	2,13	0,65	1,86	0,81	0,26
Economic Conditions	1,32	0,76	1,15	0,76	0,17
Leisure Time	1,76	0,76	1,60	0,86	0,16
N.Obs.	23480		8251		

Source: Our elaborations on Istat - Aspects of Daily Life. Year 2012
*statistically different means by group according to t-test

Table A2 Average partial effects based on ordered probit model estimates: NOT AT ALL SATISFIED

		Relatives Relations			Friends Relations			Economic Conditions			Leisure Time		
		Coef.	Std. Err.	Sign.	Coef.	Std. Err.	Sign.	Coef.	Std. Err.	Sign.	Coef.	Std. Err.	Sign.
Personal	Aged less than 36	-0.008	0.009		-0.012	0.021		0.057	0.047		-0.038	0.026	
	Aged 36-50	base-category											
	Aged 51-65	-0.005	0.006		-0.019	0.012	*	-0.015	0.015		-0.041	0.017	**
	Aged more than 65	-0.018	0.006	***	-0.024	0.013	*	-0.055	0.015	***	-0.036	0.020	*
	Male	-0.001	0.003		0.002	0.006		-0.009	0.006		-0.015	0.008	*
	North-West	-0.003	0.004		-0.006	0.009		-0.014	0.009		0.008	0.014	
	North-East	0.000	0.004		0.004	0.009		-0.009	0.009		-0.018	0.012	
	Centre	base-category											
	South-Islands	0.006	0.004	*	0.003	0.007		0.006	0.009		0.001	0.010	
	Low educated	base-category											
	Medium educated	0.000	0.004		0.000	0.009		-0.034	0.007	***	-0.009	0.013	
	Highly educated	0.004	0.008		0.009	0.017		-0.046	0.011	***	-0.021	0.022	
Household structure	Household size	-0.007	0.002	***	-0.006	0.003	*	-0.016	0.004	***	-0.006	0.005	
	Single	base-category											
	Couple with children	-0.007	0.004	*	-0.022	0.009	**	0.020	0.015		0.014	0.018	
	Couple without children	-0.014	0.003	***	-0.031	0.006	***	0.004	0.008		-0.005	0.010	
	Single-father	-0.015	0.007	**	-0.047	0.014	***	-0.039	0.020	*	0.007	0.037	
	Single-mother	-0.013	0.004	***	-0.004	0.012		0.025	0.016		0.001	0.017	
	Being supported by relatives	-0.004	0.002	*	-0.060	0.004	***	-0.027	0.005	***	-0.039	0.007	***
	Being supported by others	-0.020	0.002	***	-0.022	0.007	***	-0.031	0.007	***	-0.028	0.011	***
Income	Very good economic resources	base-category											
	Adequate economic resources	0.000	0.011		0.031	0.031					0.023	0.042	
	Scarce economic resources	0.005	0.013		0.032	0.032					0.072	0.050	
	Insufficient economic resources	0.001	0.013		0.029	0.035					0.060	0.053	
Health and Disability	Good health	base-category											
	Fair health	0.011	0.006	*	0.020	0.012	*	0.027	0.014	**	-0.002	0.014	
	Bad health	0.026	0.009	***	0.049	0.016	***	0.065	0.019	***	0.052	0.020	***
	No limited in daily activities	base-category											
	Limited in daily activities	-0.001	0.004		0.008	0.009		-0.010	0.008		0.067	0.016	***
	Seriously limited in daily activities	-0.003	0.004		0.037	0.012	***	-0.009	0.009		0.129	0.021	***
	Number of chronic diseases	0.002	0.001	***	0.006	0.001	***	0.010	0.002	***	0.009	0.002	***

Table A3 Average partial effects based on ordered probit model estimates: LITTLE SATISFIED

		Relatives Relations			Friends Relations			Economic Conditions			Leisure Time		
		Coef.	Std. Err.	Sign.	Coef.	Std. Err.	Sign.	Coef.	Std. Err.	Sign.	Coef.	Std. Err.	Sign.
Personal	Aged less than 36	-0.017	0.020		-0.017	0.030		0.057	0.028	**	-0.041	0.035	
	Aged 36-50	base-category											
	Aged 51-65	-0.010	0.012		-0.027	0.018		-0.025	0.029		-0.042	0.022	*
	Aged more than 65	-0.033	0.012	***	-0.028	0.017	*	-0.064	0.027	**	-0.027	0.018	
	Male	-0.001	0.005		0.003	0.008		-0.014	0.011		-0.013	0.008	
	North-West	-0.007	0.008		-0.008	0.012		-0.024	0.017		0.006	0.011	
	North-East	-0.001	0.009		0.005	0.012		-0.014	0.017		-0.017	0.012	
	Centre	base-category											
	South-Islands	0.013	0.007	*	0.004	0.009		0.010	0.013		0.001	0.009	
	Low educated	base-category											
	Medium educated	0.000	0.008		0.000	0.011		-0.068	0.019	***	-0.009	0.012	
	Highly educated	0.009	0.015		0.011	0.019		-0.110	0.039	***	-0.020	0.024	
Household structure	Household size	-0.014	0.003	***	-0.008	0.004	*	-0.025	0.006	***	-0.005	0.004	
	Single	base-category											
	Couple with children	-0.015	0.009		-0.031	0.015	**	0.028	0.017		0.012	0.014	
	Couple without children	-0.028	0.006	***	-0.040	0.009	***	0.007	0.012		-0.004	0.009	
	Single-father	-0.035	0.018	*	-0.081	0.034	**	-0.085	0.062		0.006	0.030	
	Single-mother	-0.030	0.009	***	-0.005	0.015		0.032	0.017	*	0.001	0.014	
	Being supported by relatives	-0.008	0.005	*	-0.117	0.006	***	-0.052	0.012	***	-0.042	0.009	***
	Being supported by others	-0.051	0.005	***	-0.032	0.011	***	-0.065	0.019	***	-0.028	0.013	**
Income	Very good economic resources	base-category											
	Adequate economic resources	0.001	0.022		0.034	0.030					0.018	0.028	
	Scarce economic resources	0.009	0.023		0.035	0.030					0.042	0.018	**
	Insufficient economic resources	0.003	0.025		0.032	0.034					0.037	0.023	*
Health and Disability	Good health	base-category											
	Fair health	0.020	0.010	**	0.023	0.013	*	0.034	0.014	**	-0.001	0.012	
	Bad health	0.043	0.013	***	0.050	0.013	***	0.061	0.010	***	0.034	0.009	***
	No limited in daily activities	base-category											
	Limited in daily activities	-0.002	0.008		0.010	0.011		-0.018	0.015		0.040	0.006	***
	Seriously limited in daily activities	-0.006	0.008		0.040	0.011	***	-0.015	0.017		0.054	0.004	***
	Number of chronic diseases	0.004	0.001	***	0.007	0.002	***	0.016	0.003	***	0.008	0.002	***

Table A4 Average partial effects based on ordered probit model estimates: VERY SATISFIED

		Relatives Relations			Friends Relations			Economic Conditions			Leisure Time		
		Coef.	Std. Err.	Sign.	Coef.	Std. Err.	Sign.	Coef.	Std. Err.	Sign.	Coef.	Std. Err.	Sign.
Personal	Aged less than 36	0.059	0.076		0.030	0.054		-0.014	0.007	**	0.042	0.037	
	Aged 36-50	base-category											
	Aged 51-65	0.033	0.040		0.047	0.033		0.007	0.008		0.044	0.023	*
	Aged more than 65	0.097	0.039	**	0.048	0.030		0.016	0.007	**	0.029	0.019	
	Male	0.004	0.018		-0.005	0.013		0.003	0.003		0.013	0.008	
	North-West	0.023	0.027		0.014	0.020		0.006	0.005		-0.007	0.011	
	North-East	0.002	0.028		-0.008	0.020		0.004	0.004		0.017	0.013	
	Centre	base-category											
	South-Islands	-0.041	0.022	*	-0.007	0.016		-0.002	0.003		-0.001	0.009	
	Low educated	base-category											
	Medium educated	0.000	0.026		0.001	0.019		0.019	0.006	***	0.009	0.012	
	Highly educated	-0.026	0.045		-0.019	0.033		0.034	0.015	**	0.020	0.025	
Household structure	Household size	0.044	0.010	***	0.013	0.007	*	0.006	0.002	***	0.005	0.005	
	Single	base-category											
	Couple with children	0.050	0.033		0.054	0.027	**	-0.007	0.004	*	-0.012	0.014	
	Couple without children	0.092	0.020	***	0.070	0.016	***	-0.002	0.003		0.004	0.009	
	Single-father	0.132	0.082		0.157	0.076	**	0.025	0.022		-0.006	0.030	
	Single-mother	0.107	0.037	***	0.008	0.027		-0.008	0.004	*	-0.001	0.015	
	Being supported by relatives	0.026	0.017		0.250	0.013	***	0.015	0.004	***	0.044	0.009	***
	Being supported by others	0.210	0.023	***	0.058	0.021	***	0.019	0.006	***	0.029	0.013	**
Income	Very good economic resources	base-category											
	Adequate economic resources	-0.003	0.069		-0.057	0.048					-0.018	0.029	
	Scarce economic resources	-0.029	0.069		-0.059	0.048					-0.046	0.023	**
	Insufficient economic resources	-0.009	0.079		-0.053	0.055					-0.040	0.027	
Health and Disability	Good health	base-category											
	Fair health	-0.061	0.028	**	-0.039	0.020	*	-0.008	0.003	**	0.001	0.013	
	Bad health	-0.120	0.031	***	-0.082	0.020	***	-0.015	0.003	***	-0.036	0.011	***
	No limited in daily activities	base-category											
	Limited in daily activities	0.006	0.025		-0.016	0.018		0.005	0.004		-0.043	0.008	***
	Seriously limited in daily activities	0.019	0.028		-0.065	0.018	***	0.004	0.005		-0.066	0.007	***
	Number of chronic diseases	-0.013	0.004	***	-0.012	0.003	***	-0.004	0.001	***	-0.008	0.002	***