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## **Satisfaction with Social Contacts and Daily Activities of Older Europeans**

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# Satisfaction with Social Contacts and Daily Activities of Older Europeans <sup>1</sup>

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## Abstract

This paper analyses the determinants of two important components of well-being among individuals aged 65 years or older in eleven European countries: satisfaction with daily activities and satisfaction with social contacts. For this purpose we use data from the Survey of Health, Ageing and Retirement in Europe and anchoring vignettes to correct for potential differences in responses scales across countries and socio-demographic groups. On average, older Europeans report being satisfied with their daily activities and with their social contacts, but there exist some differences across countries: respondents from Northern countries tend to be more satisfied than individuals from Central or Mediterranean countries. Our analysis shows that correcting for response scale differentials alters the country ranking for both domains of satisfaction while it has much less effect on the estimates of what drives within country differences between socio-demographic groups.

*Keywords: anchoring vignettes, response scale differences, ageing.*

*JEL codes: I30, J30.*

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## **1. Introduction**

Quality of life of the older part of the population has become a core topic in economics and social sciences (see, e.g., Motel-Klingebiel, Von Kondratowitz and Tesch-Römer, 2004). Quality of life can be seen as an aggregation of quality of several domains of life, such as economic welfare or financial situation, health, social contacts and family life, quality of work or other daily activities, etc. (see, e.g., Van Praag, Frijters and Ferrer-i-Carbonell, 2003).

The measurement of well-being and its domains and the ability to compare measurements across populations and socio-economic groups is important for designing economic and social policies in an efficient way. For a long time, researchers in the social sciences have extensively used self reported well-being to assess individual well-being. A large number of studies have shown that such measures are useful and contain relevant information to measure actual well-being (cf., e.g., Van Praag and Ferrer-i-Carbonell, 2008). However, even if we may argue that individuals having similar backgrounds, values, and judgments are likely to report subjective well-being in a comparable way, comparability requires much stronger assumptions once we attempt to compare well-being across different cultures and nations.

In this paper we analyze two domains of quality of life of older Europeans: social contacts and family life, and daily activities other than paid work. Both domains have been shown to be particularly relevant for older populations. We focus on international comparability and enhance comparability exploiting anchoring vignettes to correct for differences in response scales across countries and socio-economic groups, following the methodology introduced by King et al. (2004): respondents are not only asked to evaluate their own social contacts and daily activities, but also those of so-called anchoring vignettes - hypothetical individuals whose social contacts or daily activities are presented to the respondents in short descriptions. Systematic differences in the evaluations of the same hypothetical individuals by respondents in different cultures or socio-economic groups are used to identify systematic differences in response scales. While similar studies have been

performed for other important domains of quality of life,<sup>2</sup> the two domains we consider here have to our knowledge not yet been analyzed in this way.

Studies for general populations find that satisfaction with leisure activities is an important component of life satisfaction (Frijters, 2000). More specifically for the elderly, Chen (2001) finds that daily activities have an important effect on satisfaction with life after retirement and Nimrod (2007) emphasizes the importance of the specific nature of leisure activities for retirees' life satisfaction. Van Praag et al. (2003) find larger effects of satisfaction with leisure for non-workers than for workers in Germany. A similar result is found by Van Praag and Ferrer-i-Carbonell (2008) for the UK, where, moreover, satisfaction with leisure use appears to have a stronger effect on satisfaction with life than satisfaction with the amount of leisure (though both are significantly positive). Wang et al. (2002) demonstrate that mental, social as well as productive activities reduce the risk of future dementia.

Using panel data covering the complete adult population in the UK, Van Praag and Ferrer-i-Carbonell (2008) find that satisfaction with social life has a strong effect on satisfaction with life, particularly for non-workers. For the elderly, a meaningful social network for elderly protects against loneliness and social isolation (Holmén and Furukowa, 2002). Wang et al. (2002) demonstrate that a rich social network reduces the risk of future dementia and Rasulo, Christensen and Tomassini (2005) show that having close ties with friends has a positive effect on length of life. There is some evidence that satisfaction with social contacts or daily activities also affects behaviour. Frijters (2000) finds that Russians who are less satisfied with their marriage more often have intentions to change their family situation. He also finds that Germans who are dissatisfied with their leisure time more often separate or divorce. For working age adults in France, Melchior et al. (2003) find a substantial negative effect of satisfaction with social relations on days of sickness absence from work, while controlling for indexes of social networks and social support of work (which also have positive effects).

In this paper, we analyse satisfaction with daily activities and social contacts among 65+ individuals and compare them across eleven European countries. Section 2 provides a brief description of the empirical model developed by King et al. (2004)

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<sup>2</sup> See, e.g., Bago d'Uva et al. (2008) on health, King et al. (2004) on health and political efficacy, Kapteyn, Smith and van Soest (2007) on work disability, and Kristensen and Johansson (2008) on job satisfaction. In a companion paper, Bonsang and van Soest (2010) analyze job and income satisfaction using the same data source that we use here.

to correct for differential item functioning (DIF). Section 3 presents the data and the variables used in the model and Section 4 presents estimation results. In Section 5, we present counterfactuals describing the distribution of satisfaction with daily activities and social contacts if individuals from all countries were using the same response scale (i.e. the response scale of Germany). Finally, Section 6 concludes.

## 2. The model

The anchoring vignette methodology was first introduced by King et al. (2004) to measure subjective ordinal responses taking into account differences in the reporting styles across individuals. The ordinal nature of self-reported satisfaction (with social contacts or daily activities, in our case)  $s_i$  is taken into account using an ordered response model: we define a latent satisfaction variable ( $s_i^*$ ) as:

$$s_i^* = X_i \beta + \varepsilon_i,$$

where  $X_i$  is a vector of explanatory variables including country dummies, gender, years of education, etc., and  $\beta$  is a vector of unknown parameters. The error term  $\varepsilon_i$  is assumed to follow a standard normal distribution, independent of  $X_i$ . Reported satisfaction ( $s_i$ ) is a categorical variable based upon the latent  $s_i^*$ :

$$s_i = j \quad \text{if} \quad \tau_i^{j-1} < s_i^* \leq \tau_i^j,$$

If the thresholds between categories are the same for all respondents ( $\tau_i^j = \tau^j$  for all  $i, j$ ) then this gives the standard ordered probit model for ordered categorical outcomes. The distinguishing feature of the current model is that the thresholds are allowed to vary with observed respondent characteristics in the following way:

$$\begin{aligned} \tau_i^1 &= X_i \gamma^1, \\ \tau_i^j &= \tau_i^{j-1} + \exp(X_i \gamma^j), \quad j = 2, 3, 4. \end{aligned}$$

Here the  $\gamma^j, j = 1, 2, 3, 4$ , are vectors of unknown parameters. To identify  $\beta, \gamma^1, \dots, \gamma^4$ , additional information is used in the form of vignette evaluations  $V_i^k (k=1, \dots, L)$ , where  $L$  is the number of different vignettes evaluated by the respondents. These are modelled as follows:

$$\begin{aligned} V_i^{*k} &= \theta^k + V_i^k, \\ V_i^k &= j \quad \text{if} \quad \tau_i^{j-1} < V_i^{*k} \leq \tau_i^j, \end{aligned}$$

where  $V_i^k$  is the evaluation of vignette  $k$  by respondent  $i$ , and the  $v_i^k$  are error terms, assumed to be normally distributed with mean 0 and variance  $\sigma_v^2$ , independent of each other, of  $\varepsilon_i$ , and of  $X_i$ .

There are two main identifying assumptions underlying this model. The first is “response consistency”: a given respondent uses the same scales  $\tau_i^j$  for self-reports and vignettes evaluations. King et al. (2004) and Van Soest et al. (2007) have provided evidences supporting this hypothesis for vignettes on vision and drinking behaviour, by comparing vignette corrected self-reports and objective measures. The second assumption is “vignette equivalence”: there should be no systematic differences in the interpretation of a given vignette between respondents with different characteristics  $X_i$  (so that  $V_i^{*k}$  does not vary with  $X_i$ ).

### **3. Data**

#### ***3.1. The sample***

The empirical analysis is based on data from the COMPARE sample which is part of the second wave (2006-2007) of the Survey of Health, Ageing and Retirement in Europe (SHARE). SHARE includes extensive survey information on health, employment, financial situation, family and activities of a representative sample of the 50+ populations in 15 European countries (Börsch-Supan et al, 2005, 2008). The COMPARE sample is a representative subsample of the SHARE samples in 11 countries where respondents were invited to answer a list of self-assessment evaluations of satisfaction with different domains of life and to evaluate the same domain satisfactions of hypothetical individuals described in short vignettes.

The total COMPARE sample includes about 7,000 individuals in Belgium, the Czech Republic, Denmark, France, Germany, Greece, Italy, the Netherlands, Poland, Spain, and Sweden. For the analysis, we restrict our sample to not working individuals of ages 65 and over.<sup>3</sup> After having discarded a few observations with missing or unreliable values for the variables used in the analysis, our final sample includes 2,761 individuals.

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<sup>3</sup> Working individuals of age 65 more represented only 1.5% of the original sample.

### **3.2. Satisfaction with daily activities**

The question about satisfaction with daily activities is asked as follows:

***Self-assessment:***

*How satisfied are you with your daily activities (for example, your job, if you work)?*

*Very dissatisfied/ Dissatisfied/ Neither satisfied, nor dissatisfied/ Satisfied/ Very satisfied*

The distribution of reported satisfaction with daily activities is reported in Table 1. The country-level distributions do not differ markedly from each other. Most older individuals report that they are satisfied with their daily activities. Denmark and Sweden have the largest share of older individuals reporting that they are very satisfied with their main activities. At the opposite end of the spectrum, 28% of older individuals in Poland report they are not or not at all satisfied with their daily activities.

Immediately after this question, respondents were asked to report the satisfaction of individuals defined in two different hypothetical situations. The vignettes for satisfaction with daily activities are formulated as follows:

***Vignette 1:***

*Mike has been retired for five years. He quit his job as soon as he could. He enjoys spending most of his time with friends and family and watches TV when he sometimes gets bored. How satisfied do you think Mike is with his daily activities?*

*Very dissatisfied/ Dissatisfied/ Neither satisfied, nor dissatisfied/ Satisfied/ Very satisfied*

***Vignette 2:***

*Sally has been retired for five years. Although she enjoys spending time with her children and grandchildren, she still misses the contacts with her colleagues and would have liked to keep working. How satisfied do you think Sally is with her daily activities?*

*Very dissatisfied/ Dissatisfied/ Neither satisfied, nor dissatisfied/ Satisfied/ Very satisfied*

Tables 2 and 3 present the distribution of vignettes 1 and 2 across European countries. The variation across countries is large. For example, Danish respondents often give quite positive ratings (“very satisfied” or “satisfied”) to the first vignette. This descriptive result suggests that the higher self-reported level of satisfaction observed in Denmark may partly be due to differences in response scales (DIF). Greek respondents are very positive about the second vignette. Italian respondents tend to give negative evaluations for both vignettes, suggesting that self-assessments underestimate the Italians’ actual satisfaction with daily activities compared to other countries.

### **3.3. Satisfaction with social contacts**

Satisfaction with social contacts is measured using the following question:

***Self-assessment:***

*How satisfied are you with your social contacts (with family, friends, etc.)?*

*Very dissatisfied/ Dissatisfied/ Neither satisfied, nor dissatisfied/ Satisfied/*

*Very satisfied*

After the self-evaluation on satisfaction with social contacts, the respondents were asked to report the satisfaction with social contacts of individuals facing a hypothetical situation. These vignettes are formulated as follows:

***Vignette 1:***

*John is single, but gets on well with his relatives and has a large circle of friends. They often go out together to attend sporting events or to have a meal.*

*How satisfied do you think John is with his social contacts (family, friends, etc.)?*

*Very dissatisfied/ Dissatisfied/ Neither satisfied, nor dissatisfied/ Satisfied/*

*Very satisfied*

***Vignette 2:***

*Mary has been married for many years. Lately she has spent little time with her husband and they have been quarrelling more. They seem to prefer spending time with others rather than with each other. Both of them have many friends.*



*How satisfied do you think Mary is with her social contacts (family, friends, etc.)?*

*Very dissatisfied/ Dissatisfied/ Neither satisfied, nor dissatisfied/ Satisfied/ Very satisfied*

Table 4 shows the distribution of the self-assessments by country, while Tables 5 and 6 present the vignette evaluations. Again, many substantial differences across countries become apparent, both for the self-assessments and the vignette evaluations. Swedish and Danish respondents give the highest self-assessments, while Greece is a clear outlier on the negative side. Dutch respondents very often assess themselves as “satisfied” but hesitate to use the extreme “very satisfied”. Surprisingly, this is not at all the case for the vignette evaluations, where the Dutch use “very satisfied” more often than anyone else. As a consequence, correcting for DIF will make the relative lack of “very satisfied” self-assessments in the Netherlands even larger.

### ***3.4. Explanatory variables***

In addition to country dummies, the econometric model includes socio-demographic characteristics such as gender, age, marital status and reported years of education. Two indicators of health are used in both models: the number of self-reported symptoms of the respondent and the number of chronic diseases.<sup>4</sup> Income is measured by the logarithm of reported monthly net household income last month, adjusted by PPP.<sup>5</sup> Moreover, we added several variables related to family ties: the number of children, a dummy for individuals having a co-residing child and the (log of) number of annual contacts with children.<sup>6</sup> To measure the involvement of the older individuals in non-professional activities, we added a set of dummies related to different types of activities: “Doing voluntary or charity work”, “caring for a sick or disabled adult”, “providing help to friends or neighbours”, “attending an educational or training course”, “going to a sport, social or other kind of club”, “taking part in activities of a

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<sup>4</sup> See Appendix for the definition of the measures of the number of self-reported symptoms and chronic diseases.

<sup>5</sup> See the appendix of Bonsang and van Soest 2010 for details on issues regarding household income measures.

<sup>6</sup> See Appendix for the definition of the measure of the number of contacts with children.

religious organization”, and “taking part in a political or community-related organization”.

## **4. Results**

### ***4.1. Satisfaction with daily activities***

Table 7 presents the parameters of the country dummies estimated using the simple ordered probit and the hopit model, and for different specifications. Columns (i) and (v) are the results of the ordered probit and hopit models including country dummies only. Column (i) shows that older individuals from Denmark, Sweden and the Netherlands report the highest satisfaction with their daily activities. On the opposite end, respondents from Poland, Greece, Italy, and the Czech Republic report being the least satisfied among the selected countries. Comparing with the results of the hopit model in column (v), however, shows that the ranking of the countries is strongly affected by differences in response style across countries. Denmark changes from first to fourth position, after Sweden (which has the highest score), the Netherlands, and France. At the lower end of the country ranking, the position of Greece and Poland compared to other countries including the benchmark (Germany) becomes even worse. This is also the case for Czech Republic and Spain. On the other hand, the difference between Italy and Germany largely vanishes. These shifts in the country ranking are in line with what we saw in the vignette evaluations (Tables 2 and 3). For example, Danish respondents tend to give positive ratings, and correcting for this worsens the position of Denmark. Italians, on the other hand, tend to give rather negative evaluations, and correcting for this improves the rank of Italy.

Columns (ii), (iii), (iv), and columns (vi), (vii) and (viii) present the results from the models including additional controls for the ordered probit and the hopit models, respectively. Models (ii) and (vi) include gender, age, years of education, (the log of) household size, (the log of) household income, the number of chronic diseases and the number of symptoms. In Models (iii) and (vii), we also include children-related variables: the number of children, a dummy indicating whether the individual co-resides with one of their children, and the (log of) number of annual contacts with all the children. Finally, Models (iv) and (viii) also include dummies indicating the involvement of the individual in non-professional activities.

For the hopit model, the introduction of the standard control variables affects the coefficients on the country dummies. The most noticeable changes are found in

the two Central European countries and in Spain. The coefficients for Spain and the Czech Republic are no longer significant at the 5% level, implying that, keeping the activity variables and other regressors constant, there are no significant differences in satisfaction between these countries and Germany. This suggests that the difference between Germany and Spain or the Czech Republic in the raw data can mainly be explained from differences in demographics and income. Satisfaction of a Polish respondent remains significantly worse than of a similar German respondent, but the difference is much smaller than according to the model with country dummies only in column (v). Greece remains the country with the worst satisfaction levels, and the difference with other countries has increased.

Results from column (vii) are very similar to those in column (vi), suggesting that the children-related variables do not affect the differences in satisfaction with daily activities across countries. Finally, the involvement in non-professional activities can explain part of the difference in satisfaction with daily activities between Germany and Northern countries (Sweden, Denmark and the Netherlands).

Table 8 presents in the parameter estimates for the ordered probit (first column) and the hopit model (second and further columns) including all the explanatory variables (the model for which the coefficients on the country dummies are in columns (iv) and (viii) of Table 7). For the hopit model, column 2 of Table 8 presents the estimates of  $\beta$  in the equation for genuine satisfaction, while the remaining columns show the threshold parameters  $\gamma^j$ ,  $j = 1, 2, 3, 4$ .

Most of the parameter estimates in the first and second column are similar and do not differ significantly. The corrections for DIF therefore mainly affect the coefficients on the country dummies, not those on individual and family characteristics or social activities. Satisfaction with daily activities is found to decrease with age (faster according to the hopit model than according to ordered probit) while there are no significant effects of gender, education, or income. Some of these results are different from those of Palomar Lever (2004) and Van Praag et al. (2003) for adults of all ages. Palomar Lever (2004) finds a positive effect of income on satisfaction with leisure activities for Mexican adults, while Van Praag et al. (2003) find no significant effect of income on satisfaction with leisure in Germany. On the other hand, Van Praag et al. (2003) find that males are significantly more satisfied with leisure than women, find a significantly negative effect of education,

and find a significant U-shaped age pattern which would imply an increasing age effect for the age range that we consider. This suggests that the determinants of satisfaction with daily activities for the 65+ can be quite different from the factors that drive satisfaction with leisure for a general adult population.

The number of reported symptoms has a strong negative and significant impact on satisfaction with daily activities. Family-related variables, on the other hand, only have small effects. Only the number of contacts with children is marginally significant. As expected, satisfaction with daily activities is positively related to participation in non-professional activities, especially helping friends or neighbours, attending training or educational courses, going to a sport or social club, and taking part in religious activities. Although not directly comparable, this is broadly in line with Chen (2001) who finds a strong positive and significant effect of leisure activities on satisfaction with life of the 60+ in Taiwan.

#### ***4.2. Satisfaction with social contacts***

Table 9 presents the parameters on the country dummies for the ordered probit and the hopit model explaining satisfaction with social contacts and family life, for the same four specifications already used in Table 7. The coefficients presented in column (i), where the model only includes country dummies as explanatory variables, highlights the large cross-country differences in reported satisfaction levels already apparent from Table 4. Denmark and Sweden report the highest satisfaction with social contacts while Greek respondents give the lowest ratings, followed at a respectable distance by France and Italy. Introducing the additional explanatory variables in the simple ordered probit model (columns (ii), (iii), and (iv)) mainly improves the position of the Czech Republic and Poland but has little impact on the ranking of the other countries. Greece remains a clear outlier.

The results of the hopit model presented in columns (v), (vi), (vii), and (viii) show that controlling for response style differences changes the cross-country comparison substantially. The country with the highest satisfaction with social contacts is now Sweden, while Denmark falls back to second place. One striking difference comes from the Netherlands which has now the lowest score after Greece, although it was in third position in the simple ordered probit model. Another striking result is Italy that is now ranked third while it has the lowest score after Greece in the ordered probit. Satisfaction with social contacts in Belgium is now significantly lower

than in Germany, while the difference between France and Germany is no longer significant. Greece remains the country with lowest satisfaction.

The inclusion of the additional control variables seems to explain part of the difference between Denmark and Germany suggesting that the difference in satisfaction with social contacts between these two countries is partly due to the higher involvement of older individuals in non-professional activities in Denmark. On the other hand, the difference between Germany and the Netherlands is even larger when we control for the additional control variables than if we do not, suggesting that non-professional activities in the Netherlands help somewhat to bring the average satisfaction level in the Netherlands closer to that in Germany.

Table 10 displays the complete sets of parameter estimates of the most extensive specifications of the ordered probit and hopit models of satisfaction with social contacts. Except for the country dummies, most of the results for the main equation remain qualitatively similar across both models. An exception is that the effect of age is positive but not significant at the 5% level in the ordered probit model while it is larger and significant in the hopit model.<sup>7</sup> The explanation for the difference is that thresholds vary with age, as shown by the significant age coefficients in  $\gamma^1$  and  $\gamma^2$ . Household income has a positive effect, in line with Palomar Lever (2004) who finds a positive relation between income and satisfaction with children, couple relationship, and the social network for adults of all ages in Mexico, but in neither of our models the effect is significant. Education and family size have no significant impact on satisfaction with social contacts.

In both models, the number of reported symptoms of health problems has a strong and significant negative effect on the outcome variable. Contacts with children have a strong and significant positive effect, but co-residing with children does not make a significant difference. Non-professional activities play an important role: participating in a sports or social club and taking part in political or community-related organizations has a significant positive effect on satisfaction with social contacts. So does helping friends or neighbours, and this effect comes out as much stronger and more significant in the hopit model than in ordered probit, because those helping friends and neighbours have higher thresholds. Doing charity or voluntary

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<sup>7</sup> Both results differ from those of Motel-Klingebiel et al. (2004) who find a negative association between age and satisfaction with social relationships for the general adult (25+) population in five countries.

work or attending training or educational course has no significant effect on satisfaction with social contacts; caring for a sick or disabled adult has a negative and highly significant effect according to both models.

## 5. Counterfactuals

In this Section, we simulate counterfactual distributions of satisfaction with daily activities and social contacts using the parameter estimates of the hopit model. First, we simulate satisfaction levels for all respondents using the thresholds as estimated for their country of residence. The resulting distributions, given in detail in Tables A2 (daily activities) and A4 (social contacts) in the appendix and illustrated in Figure 1 (daily activities) and Figure 3 (social contacts) are similar to the observed distributions in the data, indicating that the model is able to reproduce some basic features of the raw data.

To illustrate the consequences of cross-country differences in thresholds for the cross-country comparison of satisfaction distributions, the second simulation produces the hypothetical (“counterfactual”) distribution of satisfaction in each country using the thresholds that a similar respondent in the benchmark country (Germany)<sup>8</sup> would use instead of the actual thresholds used by the respondent. This simulation shows the differences across countries that remain when cross-cultural differences in evaluation norms (thresholds) are eliminated.

### *Satisfaction with daily activities*

The results are largely in line with the country dummies in Table 7, but not completely. The main difference is that the country dummies corresponding to the best performing model in columns (iv) and (viii) Table 7, should be interpreted as *ceteris paribus* differences with all explanatory variables kept constant, whereas in the simulations we use the actual values of the covariates for each respondent in each country. For example, going to sport or social club is more common in Denmark and Sweden than in any other country (Table A1) and has a significant positive effect on satisfaction with social activities (Table 8). This increases (genuine) average

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<sup>8</sup> For each respondent, we replace the thresholds by thresholds of a German respondent with the same individual characteristics. The alternative of always using the response scales of the average German respondent gives very similar results.

satisfaction with daily activities in Denmark and Sweden (irrespective of response scales).

Correcting for differences in response scales changes the cross-country ranking of the distributions. Denmark seems the most satisfied country in Figure 1, but is outperformed by both Sweden and the Netherlands in Figure 3. The reason is, as discussed before, the fact that Danish respondents tend to use very positive evaluations. Using their own thresholds, 83% of Danish respondents are satisfied or very satisfied, but using German thresholds, this would fall to 76%. France makes a move in the opposite direction: using their own (rather negative) evaluations, 66% of the French are satisfied or very satisfied (7<sup>th</sup> in the country ranking), but using German thresholds, this would increase to 73% (4<sup>th</sup> in the country ranking). Nothing changes for Poland and Greece: they remain the two countries with the lowest satisfaction with daily activities.

#### ***Satisfaction with social contacts and family life***

Figures 3 and 4 do the same as Figures 1 and 2, but now for satisfaction with social contacts (family, friends, etc.). Denmark and Sweden perform quite well, both before and after correcting for response scale differences. The position of the Netherlands deteriorates substantially when controlling for response scale differences, because of the positive evaluation norms used by Dutch respondents in this domain, as already seen in Tables 9 and 10. While 82% of the Dutch are satisfied or very satisfied with social contacts when using their own reporting thresholds (3<sup>rd</sup>/ 4<sup>th</sup> in the country ranking), this would fall to 69% when they would use the German benchmark thresholds (10<sup>th</sup> in the ranking). The positions of Italy and France improve when response scale differences are corrected for, though the change is not as dramatic as for the Netherlands. Denmark and Sweden remain the top two countries, although Denmark's advantage is reduced by correcting for the optimistic Danish scales. Greece seems hopelessly behind the rest of the countries, although correcting for their negative way of reporting helps. The percentage of satisfied or very satisfied Greek respondents rises from 53% with Greek scales to 63% with German scales, but this is still 9%-points behind the second last country.

Accounting for DIF reduces the cross-country association between satisfaction with daily activities and satisfaction with social contacts: the cross-country rank correlation between the country specific percentage of respondents aged 65 or older

who are satisfied or very satisfied with their daily activities and the percentage satisfied or very satisfied with social contacts falls from 0.84 for reported satisfaction to 0.55 for the counterfactual satisfaction rates using the German thresholds.<sup>9</sup> An interpretation is that response scales in different domains are positively correlated: respondents who tend to give negative evaluations in one domain will often do the same in the other domain. For example, French and Italian respondents assign low satisfaction to the vignettes for daily activities as well as the vignettes for social contacts compared to respondents in other countries while individuals from Denmark tend to assign a higher satisfaction label to vignettes in both domains. This illustrates that correcting for DIF may also be important to analyze the relation between satisfaction levels in various domains of life, particularly at the cross-country level.

## **6. Conclusion**

This paper analyses two important aspects of well-being among older individuals in eleven European countries: satisfaction with daily activities and satisfaction with social contacts. On average older Europeans report that they are quite satisfied with their daily activities, but there exist some differences across European countries: respondents from Northern countries tend to report a high level of satisfaction while the lowest levels are found in Central and Southern European countries. Correcting for response style differences affects the country ranking of satisfaction with daily activities. For instance, Denmark drops from the first to the fourth place once we control for differential item functioning and the situation of Poland and Greece becomes even worse. The involvement in non-professional activities is found to be an important determinant of satisfaction with daily activities and explains part of the difference in satisfaction between Germany and the Scandinavian countries.

Older individuals in Europe are generally also satisfied with their social contacts. The cross-country differences tend to be lower than for satisfaction with daily activities. However, there are big differences across European countries: In Greece, individuals report the lowest satisfaction level, while Denmark and Sweden lie on the other end of the spectrum. Again, the empirical analysis shows that correcting for response styles affects the cross-country ranking of satisfaction with social contacts. Denmark changes from the first to the second place after Sweden but

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<sup>9</sup> The Pearson correlation coefficient falls from 0.83 to 0.60.



more strikingly, the Netherlands drops from the third to the last but one position. On the contrary, Italy climbs from the last but one position to the third one once differential item functioning is controlled for. Correcting for response scale differences has much less effect on the estimates of what drives within country differences in satisfaction with daily activities or social contacts between socio-demographic groups. It does not affect the conclusion that contacts with children and non-professional activities play an important role in satisfaction with social contacts.

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## Tables and Figures

**Table 1. Distribution of satisfaction with main activity among the 65+ in Europe (in percentage).**

	Very dissatisfied	Dissatisfied	Nor satisfied, neither dissatisfied	Satisfied	Very satisfied
Sweden	0	2	14	61	23
Denmark	0	5	10	54	31
Netherlands	1	3	15	65	17
Germany	2	8	15	65	11
Belgium	3	6	16	57	19
France	1	5	27	55	11
Poland	10	18	23	40	10
Czech Republic	2	9	26	55	8
Italy	2	12	25	54	7
Spain	2	12	17	56	12
Greece	0	13	46	33	8
Total	2	8	20	55	15

Note: COMPARE sample. All not working individuals being 65 year-old or over.

**Table 2. Distribution of satisfaction with main activity vignettes 1 among the 65+ individuals in Europe (in percentage).**

	Very dissatisfied	Dissatisfied	Nor satisfied, neither dissatisfied	Satisfied	Very satisfied
Sweden	0	3	31	59	7
Denmark	0	2	15	62	21
Netherlands	0	3	33	58	8
Germany	0	5	26	59	10
Belgium	0	6	27	52	14
France	1	9	28	55	7
Poland	1	7	23	63	7
Czech Republic	0	7	29	49	15
Italy	0	11	27	57	5
Spain	0	7	18	63	12
Greece	0	6	30	43	21
Total	0	6	26	56	12

Note: COMPARE sample. All not working individuals being 65 year-old or over.

**Table 3. Distribution of satisfaction with main activity vignettes 2 among the 65+ individuals in Europe (in percentage).**

	Very dissatisfied	Dissatisfied	Nor satisfied, neither dissatisfied	Satisfied	Very satisfied
Sweden	0	33	56	12	0
Denmark	0	26	53	19	1
Netherlands	0	29	53	18	1
Germany	1	35	49	14	1
Belgium	1	29	50	18	2
France	1	47	41	11	0
Poland	1	33	44	22	1
Czech Republic	1	29	46	24	1
Italy	1	53	35	10	1
Spain	1	30	34	31	3
Greece	0	24	44	30	2
Total	1	33	46	19	1

Note: COMPARE sample. All not working individuals being 65 year-old or over.

**Table 4. Distribution of satisfaction with social contacts among the 65+ in Europe (in percentage).**

	Very dissatisfied	Dissatisfied	Nor satisfied, neither dissatisfied	Satisfied	Very satisfied
Sweden	0	0	11	42	46
Denmark	0	2	6	42	50
Netherlands	1	3	8	71	18
Germany	0	2	14	58	26
Belgium	1	5	14	55	25
France	3	4	16	57	21
Poland	2	5	15	54	24
Czech Republic	2	3	17	56	22
Italy	1	8	15	59	17
Spain	1	6	15	56	22
Greece	0	8	42	38	12
Total	1	4	15	53	27

Note: COMPARE sample. All not working individuals being 65 year-old or over.

**Table 5. Distribution of satisfaction with social contacts vignettes 1 among the 65+ individuals in Europe (in percentage).**

	Very dissatisfied	Dissatisfied	Nor satisfied, neither dissatisfied	Satisfied	Very satisfied
Sweden	0	1	5	55	38
Denmark	0	0	4	58	37
Netherlands	0	1	7	49	43
Germany	0	1	8	57	34
Belgium	1	1	7	50	42
France	1	1	8	61	30
Poland	1	1	15	55	29
Czech Republic	0	2	7	55	36
Italy	2	2	15	67	14
Spain	0	2	6	59	34
Greece	0	6	26	42	26
Total	0	2	9	56	33

Note: COMPARE sample. All not working individuals being 65 year-old or over.

**Table 6. Distribution of satisfaction with social contacts vignettes 2 among the 65+ individuals in Europe (in percentage).**

	Very dissatisfied	Dissatisfied	Nor satisfied, neither dissatisfied	Satisfied	Very satisfied
Sweden	8	54	31	6	1
Denmark	2	27	37	31	3
Netherlands	2	28	38	24	9
Germany	3	43	38	14	2
Belgium	3	43	34	17	3
France	6	47	39	7	1
Poland	5	41	32	21	2
Czech Republic	8	40	40	11	1
Italy	9	43	31	16	2
Spain	11	36	24	28	2
Greece	14	20	39	24	3
Total	6	39	35	18	2

Note: COMPARE sample. All not working individuals being 65 year-old or over.

**Table 7. Satisfaction with daily activities among the 65+.**

	Baseline				Hopit model			
	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)
Denmark	0.548*** (0.082)	0.584*** (0.085)	0.575*** (0.086)	0.514*** (0.087)	0.198** (0.096)	0.197* (0.103)	0.190* (0.103)	0.084 (0.106)
Sweden	0.413*** (0.097)	0.473*** (0.099)	0.461*** (0.099)	0.324*** (0.102)	0.536*** (0.119)	0.635*** (0.126)	0.625*** (0.126)	0.415*** (0.131)
Netherlands	0.268** (0.104)	0.133 (0.107)	0.120 (0.107)	0.071 (0.108)	0.308** (0.127)	0.201 (0.134)	0.189 (0.134)	0.094 (0.137)
Germany	-	-	-	-	-	-	-	-
Belgium	0.128 (0.082)	0.237*** (0.083)	0.241*** (0.084)	0.201** (0.084)	-0.061 (0.095)	0.041 (0.100)	0.044 (0.100)	-0.021 (0.102)
France	-0.067 (0.108)	0.016 (0.110)	0.033 (0.110)	-0.018 (0.110)	0.108 (0.128)	0.207 (0.133)	0.227* (0.134)	0.134 (0.136)
Poland	-0.573*** (0.099)	-0.198 (0.120)	-0.198 (0.121)	-0.178 (0.121)	-0.686*** (0.115)	-0.300** (0.144)	-0.309** (0.144)	-0.296** (0.146)
Czech R.	-0.213*** (0.081)	0.004 (0.092)	0.009 (0.092)	0.026 (0.093)	-0.361*** (0.094)	-0.174 (0.110)	-0.173 (0.110)	-0.162 (0.112)
Italy	-0.262*** (0.085)	-0.202** (0.092)	-0.202** (0.094)	-0.187** (0.094)	-0.085 (0.100)	0.030 (0.112)	0.026 (0.113)	0.031 (0.114)
Spain	-0.119 (0.102)	0.003 (0.114)	0.004 (0.115)	0.023 (0.116)	-0.395*** (0.119)	-0.225* (0.136)	-0.232* (0.137)	-0.235* (0.139)
Greece	-0.472*** (0.098)	-0.410*** (0.105)	-0.411*** (0.106)	-0.453*** (0.109)	-0.759*** (0.114)	-0.675*** (0.125)	-0.677*** (0.126)	-0.735*** (0.130)
Log-likelihood	-9,476.9	-9,272.1	-9,269.1	-9,234.1	-9,323.8	-9,082.0	-9,076.6	-9,012.2

Note: COMPARE sample. All not working individuals being 65 year-old or over. Standard errors are in parentheses. Number of observations: 2,761. (\*), (\*\*), (\*\*\*) means that the coefficient estimate is significantly different from zero at the 10%, 5%, 1 %-level respectively.

**Table 8. Determinants of satisfaction with daily activities among the 65+.**

	Baseline	Self-assessment	Thres. 1	Thres. 2	Thres. 3	Thres. 4
Constant	-	-	-3.377** (1.355)	0.445 (0.822)	-0.221 (0.460)	1.450*** (0.389)
<u>Country:</u>						
Denmark	0.514*** (0.087)	0.084 (0.106)	-0.675*** (0.224)	0.273** (0.130)	-0.016 (0.070)	-0.195*** (0.054)
Sweden	0.324*** (0.102)	0.415*** (0.131)	-0.555** (0.243)	0.279* (0.148)	0.219*** (0.077)	-0.041 (0.065)
Netherlands	0.071 (0.108)	0.094 (0.137)	-0.550** (0.264)	0.235 (0.164)	0.224*** (0.082)	-0.035 (0.069)
Germany	-	-	-	-	-	-
Belgium	0.201** (0.084)	-0.021 (0.102)	-0.196 (0.149)	0.086 (0.103)	0.020 (0.066)	-0.229*** (0.055)
France	-0.018 (0.110)	0.134 (0.136)	0.024 (0.178)	0.118 (0.121)	0.007 (0.087)	-0.067 (0.076)
Poland	-0.178 (0.121)	-0.296** (0.146)	0.071 (0.186)	-0.078 (0.135)	-0.075 (0.096)	-0.186** (0.081)
Czech Republic	0.026 (0.093)	-0.162 (0.112)	-0.296 (0.194)	0.134 (0.132)	0.041 (0.073)	-0.203*** (0.062)
Italy	-0.187** (0.094)	0.031 (0.114)	-0.229 (0.161)	0.352*** (0.105)	-0.048 (0.076)	-0.077 (0.064)
Spain	0.023 (0.116)	-0.235* (0.139)	-0.319 (0.199)	0.191 (0.137)	-0.251** (0.102)	-0.138* (0.073)
Greece	-0.453*** (0.109)	-0.735*** (0.130)	-1.226*** (0.453)	0.582*** (0.218)	0.190** (0.081)	-0.445*** (0.078)
Woman	-0.008 (0.046)	0.000 (0.056)	-0.114 (0.087)	0.061 (0.055)	0.044 (0.037)	-0.021 (0.031)
Age	-0.005 (0.004)	-0.012*** (0.004)	-0.003 (0.006)	-0.002 (0.004)	0.002 (0.003)	-0.004* (0.002)
Years of education	-0.002 (0.007)	0.005 (0.008)	-0.043*** (0.014)	0.030*** (0.008)	0.003 (0.005)	-0.002 (0.005)
Ln(household size)	-0.050 (0.115)	0.047 (0.136)	0.187 (0.178)	-0.055 (0.122)	-0.084 (0.095)	0.065 (0.082)
Ln(household income)	0.079 (0.069)	0.081 (0.084)	0.117 (0.163)	-0.054 (0.107)	0.008 (0.056)	-0.080* (0.046)
Number of symptoms	-0.173*** (0.013)	-0.162*** (0.015)	0.048** (0.021)	-0.024* (0.014)	0.008 (0.010)	-0.010 (0.009)
Number of chronic diseases	-0.044*** (0.016)	-0.025 (0.019)	0.008 (0.027)	0.006 (0.017)	-0.010 (0.012)	0.012 (0.011)
Living with a partner	0.079 (0.086)	-0.067 (0.103)	-0.085 (0.129)	-0.033 (0.087)	0.017 (0.071)	-0.001 (0.062)
Number of children	0.017 (0.095)	-0.003 (0.022)	0.002 (0.030)	-0.005 (0.020)	0.006 (0.014)	-0.008 (0.012)
Co-residing with child	0.000 (0.018)	-0.026 (0.113)	-0.191 (0.164)	0.107 (0.106)	-0.036 (0.078)	0.018 (0.065)
Ln(contacts with children)	0.023* (0.013)	0.026* (0.015)	-0.009 (0.021)	0.008 (0.013)	-0.008 (0.010)	0.015* (0.008)

**Table 8 (continued). Determinants of satisfaction with daily activities among the 65+.**

	Baseline	Self-assessment	Thres. 1	Thres. 2	Thres. 3	Thres. 4
<u>Non-professional activities:</u>						
Voluntary/Charity	0.121 (0.075)	0.213** (0.096)	-0.051 (0.186)	0.084 (0.103)	-0.039 (0.060)	0.033 (0.047)
Caring for sick/disabled	-0.093 (0.101)	-0.033 (0.126)	0.213 (0.190)	-0.033 (0.120)	-0.184** (0.087)	0.058 (0.066)
Helping friends/neighbours	0.196*** (0.068)	0.410*** (0.087)	-0.004 (0.138)	0.024 (0.080)	0.065 (0.052)	0.115*** (0.043)
Education/Training	0.198* (0.118)	0.398** (0.159)	0.339 (0.217)	-0.179 (0.133)	0.032 (0.090)	0.124 (0.077)
Going to sport/social club	0.279*** (0.060)	0.315*** (0.075)	-0.338** (0.154)	0.178** (0.083)	0.127*** (0.046)	-0.067* (0.038)
Attending religious activities	0.208*** (0.071)	0.217** (0.087)	-0.016 (0.145)	0.012 (0.084)	0.018 (0.054)	-0.002 (0.047)
Taking part to organizations	0.300*** (0.112)	0.239* (0.143)	-0.453 (0.317)	0.220 (0.150)	0.016 (0.088)	-0.042 (0.071)
Log-likelihood	-9,234.1	-9,012.2				

Note: COMPARE sample. All not working individuals being 65 year-old or over. Number of observations: 2,761. Standard errors are in parentheses. (\*), (\*\*), (\*\*\*) means that the coefficient estimate is significantly different from zero at the 10%, 5%, 1 %-level respectively.

**Table 9. Determinants of satisfaction with social contacts among the 65+.**

	Baseline				Hopit model			
	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)
Denmark	0.558*** (0.084)	0.559*** (0.086)	0.540*** (0.087)	0.506*** (0.088)	0.283*** (0.102)	0.272** (0.106)	0.250** (0.107)	0.198* (0.109)
Sweden	0.438*** (0.099)	0.457*** (0.100)	0.423*** (0.100)	0.345*** (0.103)	0.451*** (0.120)	0.462*** (0.123)	0.423*** (0.124)	0.311** (0.128)
Netherlands	-0.066 (0.105)	-0.129 (0.106)	-0.170 (0.107)	-0.189* (0.108)	-0.413*** (0.127)	-0.466*** (0.130)	-0.519*** (0.131)	-0.554*** (0.133)
Germany	-	-	-	-	-	-	-	-
Belgium	-0.133 (0.082)	-0.076 (0.083)	-0.065 (0.083)	-0.093 (0.084)	-0.276*** (0.099)	-0.217** (0.101)	-0.208** (0.102)	-0.245** (0.103)
France	-0.246** (0.109)	-0.212* (0.109)	-0.175 (0.110)	-0.202* (0.110)	-0.134 (0.131)	-0.090 (0.134)	-0.056 (0.135)	-0.095 (0.136)
Poland	-0.162 (0.101)	0.105 (0.121)	0.083 (0.122)	0.095 (0.122)	-0.150 (0.121)	0.138 (0.147)	0.100 (0.149)	0.113 (0.150)
Czech R.	-0.181** (0.082)	-0.032 (0.092)	-0.028 (0.092)	-0.021 (0.093)	-0.156 (0.099)	-0.002 (0.112)	-0.005 (0.113)	0.003 (0.114)
Italy	-0.340*** (0.086)	-0.274*** (0.092)	-0.310*** (0.094)	-0.302*** (0.094)	-0.056 (0.105)	0.037 (0.114)	-0.012 (0.115)	-0.003 (0.116)
Spain	-0.190* (0.103)	-0.089 (0.114)	-0.112 (0.115)	-0.102 (0.116)	-0.298** (0.125)	-0.163 (0.140)	-0.207 (0.141)	-0.200 (0.143)
Greece	-0.711*** (0.099)	-0.620*** (0.105)	-0.661*** (0.106)	-0.730*** (0.109)	-0.557*** (0.119)	-0.443*** (0.127)	-0.498*** (0.129)	-0.537*** (0.133)
Log-likelihood	-9,463.8	-9,409.1	-9,378.1	-9,354.7	-9,322.2	-9,242.0	-9,199.8	-9,153.1

Note: COMPARE sample. All not working individuals being 65 year-old or over. Standard errors are in parentheses. Number of observations: 2,761. (\*), (\*\*), (\*\*\*) means that the coefficient estimate is significantly different from zero at the 10%, 5%, 1 %-level respectively.



**Table 10. Determinants of satisfaction with social contacts among the 65+.**

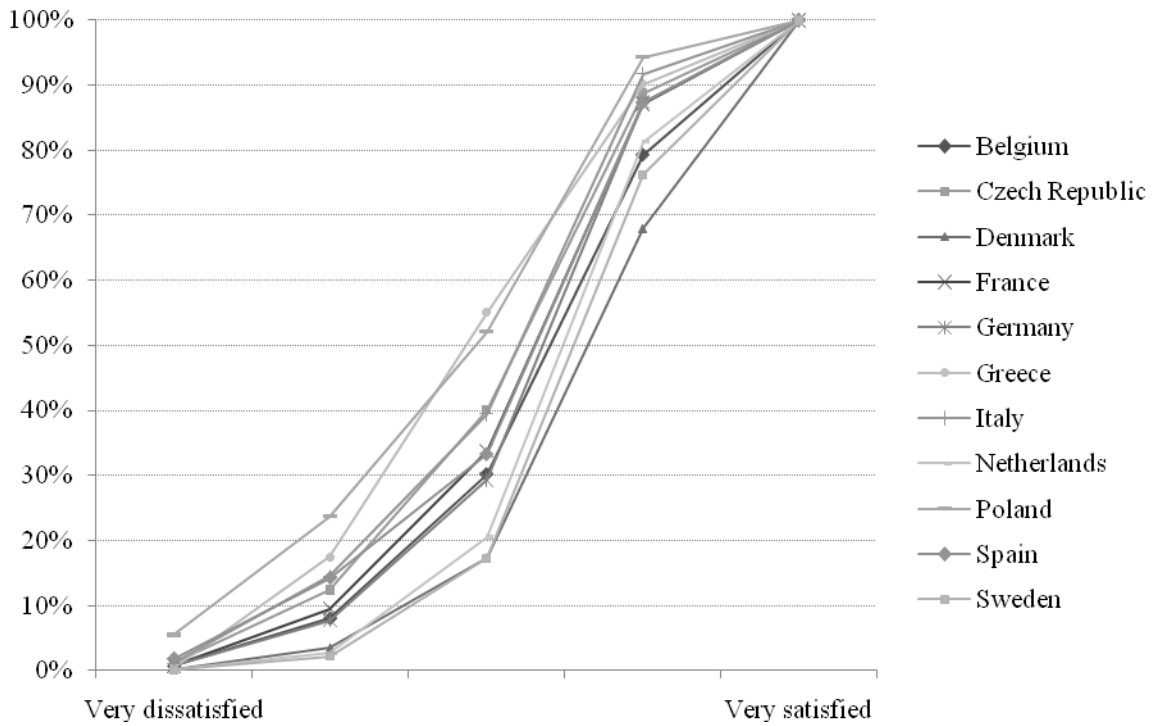
	Baseline	Self- assessment	Thres. 1	Thres. 2	Thres. 3	Thres. 4
Constant	-	-	0.069 (1.053)	-0.485 (0.645)	-0.190 (0.581)	-0.181 (0.369)
<u>Country:</u>						
Denmark	0.508*** (0.088)	0.199* (0.109)	0.022 (0.163)	-0.244** (0.107)	-0.071 (0.090)	0.079 (0.053)
Sweden	0.345*** (0.103)	0.311** (0.128)	0.503*** (0.159)	-0.183* (0.101)	-0.108 (0.106)	-0.177*** (0.068)
Netherlands	-0.188* (0.108)	-0.554*** (0.133)	0.004 (0.205)	-0.239* (0.142)	-0.068 (0.114)	0.038 (0.065)
Germany	-	-	-	-	-	-
Belgium	-0.089 (0.084)	-0.244** (0.103)	0.241* (0.144)	-0.156* (0.092)	-0.138 (0.085)	-0.062 (0.053)
France	-0.201* (0.110)	-0.094 (0.136)	0.515*** (0.173)	-0.248** (0.120)	-0.048 (0.109)	0.005 (0.070)
Poland	0.097 (0.122)	0.113 (0.150)	0.329* (0.197)	-0.197 (0.143)	-0.069 (0.121)	0.053 (0.077)
Czech Republic	-0.019 (0.093)	0.003 (0.114)	0.449*** (0.153)	-0.317*** (0.107)	0.009 (0.091)	0.010 (0.059)
Italy	-0.301*** (0.094)	-0.003 (0.117)	0.723*** (0.152)	-0.279*** (0.107)	-0.161* (0.094)	0.128** (0.058)
Spain	-0.101 (0.116)	-0.200 (0.143)	0.619*** (0.176)	-0.393*** (0.133)	-0.428*** (0.129)	0.119* (0.070)
Greece	-0.730*** (0.109)	-0.537*** (0.133)	0.689*** (0.173)	-0.556*** (0.145)	0.270*** (0.094)	-0.182** (0.077)
Woman	0.173*** (0.047)	0.154*** (0.057)	-0.093 (0.068)	0.064 (0.050)	0.018 (0.046)	-0.029 (0.029)
Age	0.007* (0.004)	0.011** (0.005)	-0.015*** (0.006)	0.012*** (0.004)	0.004 (0.004)	0.001 (0.002)
Years of education	0.006 (0.007)	0.007 (0.008)	-0.004 (0.010)	0.005 (0.007)	-0.001 (0.007)	-0.001 (0.004)
Ln(household size)	-0.044 (0.115)	0.013 (0.142)	0.003 (0.196)	0.105 (0.157)	-0.134 (0.130)	0.022 (0.075)
Ln(household income)	0.103 (0.069)	0.112 (0.085)	-0.028 (0.106)	-0.009 (0.078)	-0.006 (0.072)	0.067 (0.044)
Number of symptoms	-0.089*** (0.013)	-0.078*** (0.016)	0.064*** (0.019)	-0.028** (0.014)	-0.006 (0.013)	-0.017** (0.008)
Number of chronic diseases	-0.007 (0.016)	0.014 (0.020)	-0.028 (0.023)	0.036** (0.016)	-0.010 (0.016)	0.010 (0.010)
Living with a partner	0.127 (0.086)	0.120 (0.106)	0.013 (0.144)	-0.085 (0.116)	0.151 (0.096)	-0.032 (0.056)
Number of children	0.138 (0.095)	-0.034 (0.022)	-0.017 (0.027)	0.004 (0.019)	0.012 (0.017)	-0.019* (0.011)
Co-residing with child	-0.018 (0.018)	0.075 (0.118)	-0.171 (0.161)	-0.070 (0.138)	0.183* (0.101)	0.055 (0.060)
Ln(contacts with children)	0.086*** (0.013)	0.100*** (0.015)	0.012 (0.018)	0.000 (0.013)	-0.020* (0.011)	0.026*** (0.008)

**Table 10 (continued). Satisfaction with social contacts among the 65+.**

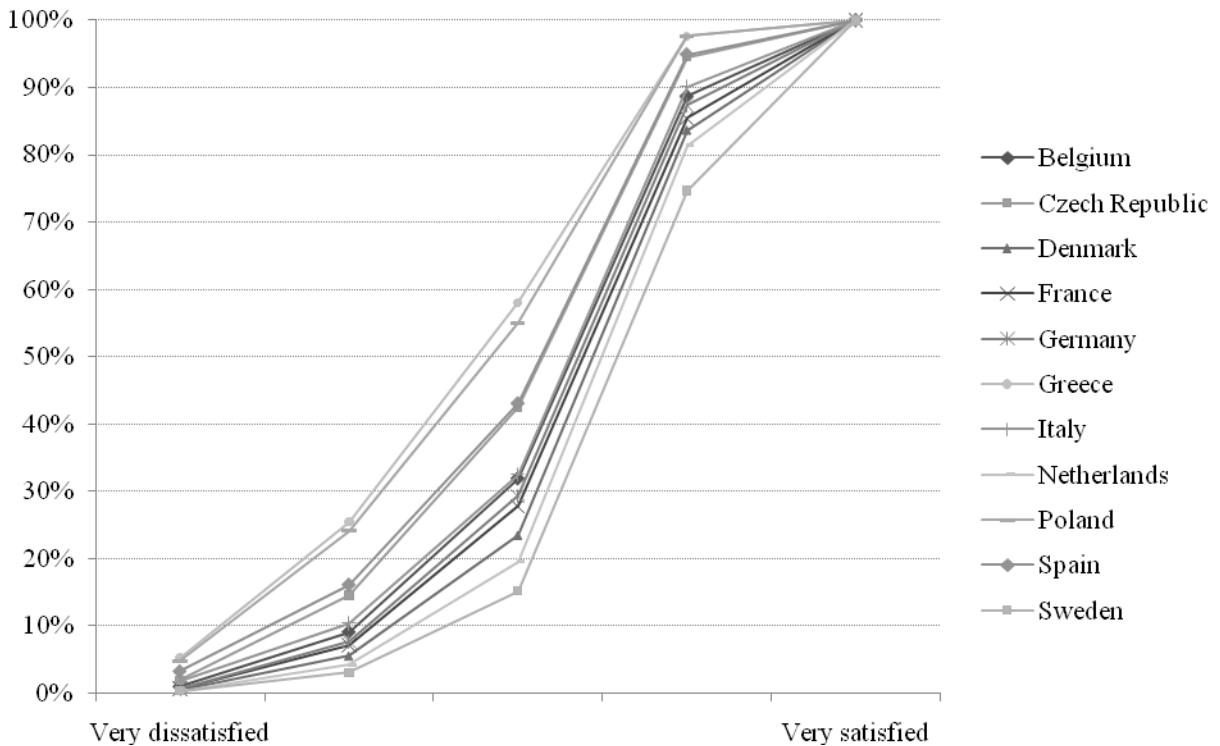
	Baseline	Self- assessment	Threshold 1	Threshold 2	Threshold 3	Threshold 4
<u>Non-professional activities:</u>						
Voluntary/Charity	0.024 (0.075)	0.092 (0.093)	-0.099 (0.118)	0.065 (0.078)	0.089 (0.076)	0.009 (0.045)
Caring for sick/disabled	-0.250** (0.100)	-0.303** (0.123)	-0.224 (0.170)	0.095 (0.107)	0.009 (0.098)	0.031 (0.062)
Helping friends/neighbours	0.113* (0.068)	0.220*** (0.084)	-0.179* (0.103)	0.089 (0.066)	0.122* (0.065)	0.052 (0.041)
Education/Training	-0.023 (0.117)	-0.020 (0.144)	-0.868*** (0.297)	0.572*** (0.130)	-0.054 (0.123)	-0.115 (0.077)
Going to sport/social club	0.191*** (0.060)	0.192** (0.075)	-0.003 (0.091)	0.057 (0.061)	-0.134** (0.064)	0.033 (0.036)
Attending religious activities	0.273*** (0.072)	0.187** (0.088)	0.140 (0.098)	-0.107 (0.073)	-0.079 (0.070)	-0.032 (0.045)
Taking part to organizations	0.295*** (0.112)	0.357** (0.143)	0.153 (0.162)	-0.055 (0.111)	-0.106 (0.124)	0.074 (0.069)
Log-likelihood	-9,354.7	-9,153.1				

Note: COMPARE sample. All not working individuals being 65 year-old or over. Number of observations: 2,761. Standard errors are in parentheses. (\*), (\*\*), (\*\*\*) means that the coefficient estimate is significantly different from zero at the 10%, 5%, 1 %-level respectively.

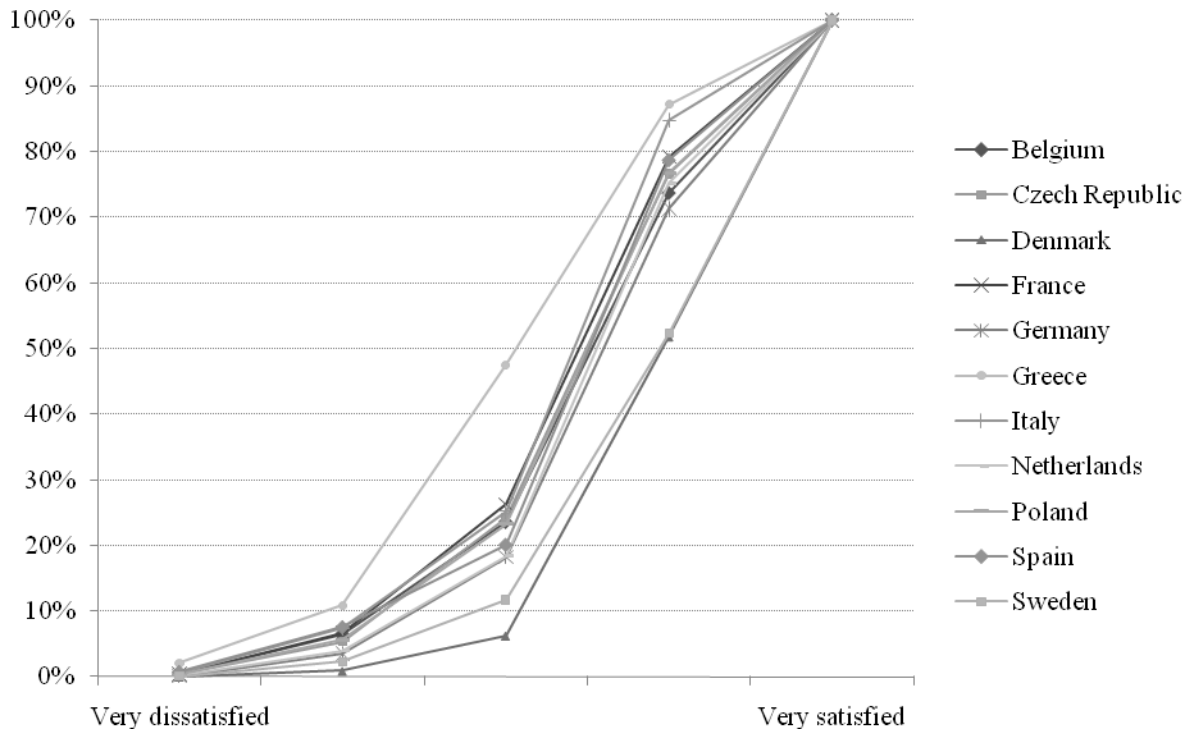
**Figure 1. Predicted cumulative distribution of satisfaction with daily activities using actual thresholds**



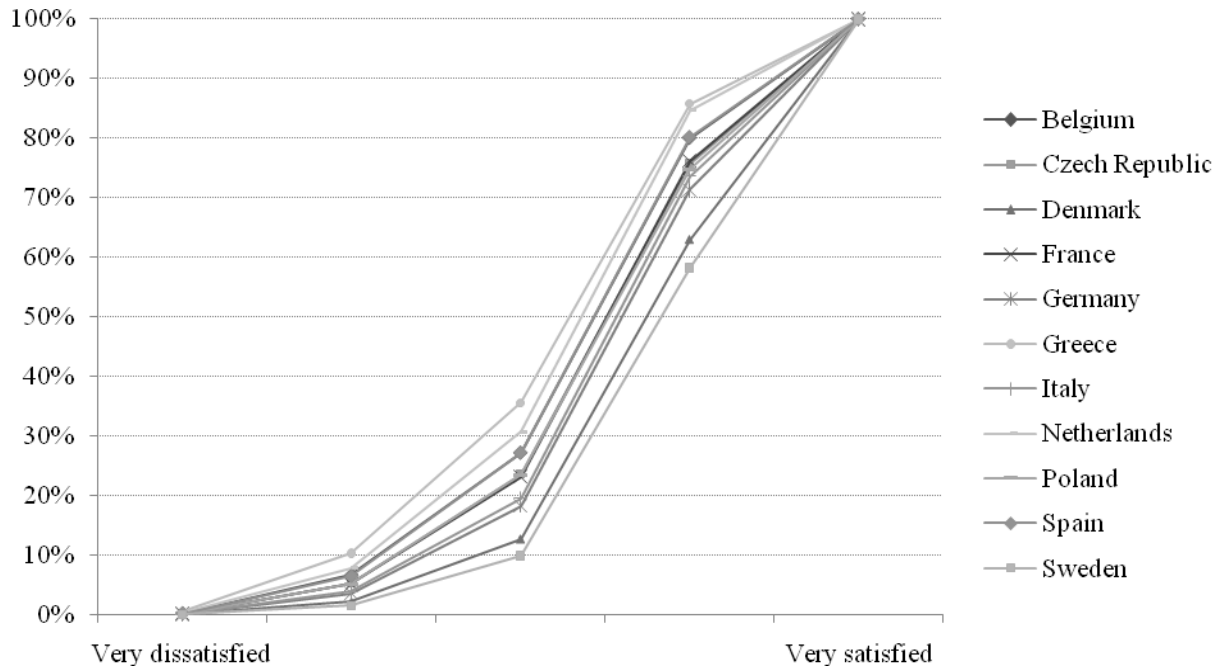
**Figure 2. Predicted cumulative distribution of satisfaction with daily activities using German thresholds**



**Figure 3. Predicted cumulative distribution of satisfaction with social contacts using actual thresholds**



**Figure 4. Predicted cumulative distribution of satisfaction with social contacts using German thresholds**



## Appendix

**Table A1. Descriptive Statistics. All 65+ individuals.**

	All countries	Belgium	Czech Republic	Denmark	France	Germany	Greece	Italy	Netherlands	Poland	Spain	Sweden
Woman	54%	54%	59%	57%	58%	52%	53%	48%	49%	55%	50%	53%
Age	73.4	73.8	73.4	73.5	74.3	72.8	74.7	72.0	72.5	73.6	74.4	73.7
Years of education	9.7	10.7	10.6	11.9	10.5	11.6	7.1	6.8	9.8	7.1	5.7	9.7
Household size	1.9	1.8	1.8	1.7	1.7	1.8	1.8	2.2	1.8	2.6	2.4	1.8
Monthly household income (in Euros, PPP corrected)	1473	1535	936	1492	1861	1917	1151	1555	1938	750	1179	1870
Number of symptoms	2.2	2.3	2.7	1.7	2.4	2.0	2.1	2.2	1.2	3.5	2.1	2.0
Number of chronic diseases	2.1	2.0	2.3	2.3	1.9	1.8	2.0	2.3	1.5	2.6	2.1	2.0
Living in a couple	69%	67%	60%	71%	62%	74%	60%	77%	76%	67%	71%	76%
Co-residing with children	12%	8%	10%	3%	8%	5%	16%	28%	3%	34%	31%	1%
Number of children	2.2	2.2	1.9	2.4	2.0	2.2	1.7	2.2	2.4	2.8	2.7	2.2
Number of contacts with children(per year)	309	275	228	292	217	275	413	426	330	312	396	320
<u>Non-professional activities:</u>												
Voluntary/charity	12%	15%	2%	21%	18%	11%	2%	7%	26%	2%	4%	26%
Caring for sick/disabled	5%	6%	4%	4%	9%	7%	4%	3%	11%	2%	1%	5%
Helping friends/neighbours	13%	15%	11%	17%	19%	14%	5%	6%	18%	3%	3%	33%
Education/Training	4%	5%	2%	5%	4%	2%	2%	1%	5%	0%	2%	13%
Going to sport/social club	19%	20%	11%	38%	26%	20%	4%	10%	28%	1%	3%	33%
Attending religious activities	12%	9%	8%	7%	13%	11%	38%	8%	14%	8%	10%	16%
Taking part to organizations	4%	10%	2%	4%	4%	5%	3%	2%	4%	1%	1%	8%
Number of observations	2,761	355	358	363	141	367	178	294	160	177	163	205

Note: COMPARE sample. All not working individuals being 65 year-old or over.

**The number of symptoms** is measured using the following question: For the past six months at least, have you been bothered by any of the health conditions? Pain in your back, knees, hips or any other joint; Heart trouble or angina, chest pain during exercise; Breathlessness, difficulty breathing; Persistent cough; Swollen legs; Sleeping problems; Falling down; Fear of falling down; Dizziness, faints or blackouts; Stomach or intestine problems, including constipation, air, diarrhoea; Incontinence or involuntary loss of urine; Other symptoms, not yet mentioned.

**The number of chronic diseases** is measured using the number of the following conditions reported by the respondent: Did your doctor ever told you that you had any of the following conditions: A heart attack including myocardial infarction or coronary thrombosis or any other heart problem including congestive heart failure; High blood pressure or hypertension; High blood cholesterol; Diabetes or high blood sugar; Chronic lung disease such as chronic bronchitis or emphysema; Asthma; Arthritis, including osteoarthritis, or rheumatism; Osteoporosis; Cancer or malignant tumour, including leukaemia or lymphoma, but excluding minor skin cancers, Stomach or duodenal ulcer, peptic ulcer; Cataracts; Hip fracture or femoral fracture.

**The number of annual contacts with the children** is the sum of contacts with all children using the following question: During the past twelve months, how often did you have contact with «child name», either personally, by phone or mail: Daily (365/year); Several times a week (156/year); About once a week (52/year); About every two weeks (26/year); About once a month (12/year); Less than once a month (6/year); Never (0/year).

**Non-professional activities** are measured using the following question: Have you done any of these activities in the last month? 1. Done voluntary or charity work, 2. Cared for a sick or disabled adult, 3. Provided help to friends or neighbors, 4. Attended an educational or training course, 5. Gone to a sport, social or other kind of club, 6. Taken part in activities of a religious organization (church, synagogue, mosque etc.), 7. Taken part in a political or community-related organization.

Table A2. Predicted distribution of satisfaction with daily activities among the 65+ Europeans using actual thresholds.

	Very dissatisfied	Dissatisfied	Nor satisfied, neither dissatisfied	Satisfied	Very satisfied
Sweden	0	2	15	59	24
Denmark	0	3	14	51	32
Netherlands	0	3	18	61	19
Germany	1	7	22	58	13
Belgium	1	7	22	49	21
France	1	9	24	53	13
Poland	5	18	28	42	6
Czech Republic	1	11	28	49	11
Italy	1	13	25	52	8
Spain	2	12	19	54	13
Greece	0	17	38	35	10
All countries	1	9	23	51	16

Table A3. Predicted distribution of satisfaction with daily activities among the 65+ Europeans using German thresholds.

	Very dissatisfied	Dissatisfied	Nor satisfied, neither dissatisfied	Satisfied	Very satisfied
Sweden	0	3	12	60	25
Denmark	0	5	18	60	16
Netherlands	0	4	15	62	19
Germany	1	7	22	58	13
Belgium	1	8	23	57	11
France	1	6	21	58	15
Poland	5	19	31	43	2
Czech Republic	2	13	28	52	5
Italy	2	9	22	58	10
Spain	3	13	27	52	5
Greece	5	20	33	40	2
All countries	2	9	23	55	11

Table A4. Predicted distribution of satisfaction with social contacts among the 65+ Europeans using actual thresholds.

	Very dissatisfied	Dissatisfied	Nor satisfied, neither dissatisfied	Satisfied	Very satisfied
Sweden	0	2	9	41	48
Denmark	0	1	5	46	48
Netherlands	0	4	14	57	25
Germany	0	3	15	53	29
Belgium	0	6	17	50	26
France	0	6	20	53	21
Poland	0	5	18	53	23
Czech Republic	0	5	19	52	23
Italy	1	7	18	60	15
Spain	1	7	13	59	21
Greece	2	9	37	40	13
All countries	0	5	16	51	28

Table A5. Predicted distribution of satisfaction with social contacts among the 65+ Europeans using German thresholds.

	Very dissatisfied	Dissatisfied	Nor satisfied, neither dissatisfied	Satisfied	Very satisfied
Sweden	0	1	8	48	42
Denmark	0	2	11	50	37
Netherlands	0	8	23	54	15
Germany	0	3	15	53	29
Belgium	0	6	21	53	20
France	0	5	18	53	24
Poland	0	5	18	51	25
Czech Republic	0	5	18	52	24
Italy	0	4	16	54	26
Spain	0	6	21	53	20
Greece	0	10	25	50	14
All countries	0	5	17	52	26