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**Multidimensional Poverty and Social Exclusion in Western Europe.
Evidence from the European Community Household Panel**

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1. Introduction

The paper approaches the empirical evidence concerning multidimensional poverty and social exclusion from a cross-national perspective. The main subject of the investigation is the influence of the deprivation of material assets (financial resources, the standard of living) on the deprivation of such aspects of life as social participation, relations with other persons and satisfaction with life. Both the material conditions and social behavior of an individual depend on personal characteristics of an actor as well as on the characteristics of the society in which he/ she lives. As a result, the relation between material conditions and social behavior is likely to be affected by the attributes of both the individual and the society.

The main goal of the paper is to examine how various forms of multidimensional poverty affect the way in which the individual functions in society and to assess whether the pattern of this influence differs across countries.

2. Multidimensional Poverty and Social Exclusion

Multidimensional poverty

The concept of poverty in the literature is often limited solely to the problem of low income. However, many authors have pointed out that this kind of approach means simplification, and the multidimensional approach to poverty is still becoming more popular among social scientists (e.g. Whelan, Layte, Maître & Nolan, 2001; Layte & Whelan, 2002). Usually, in this approach, in addition to income, a number of indicators of living-standard deprivation are taken into account. These may include housing conditions (size, amenities), consumer durables (possession of various items), personal necessities (ability to buy clothes, food) and more. Conceptually, this approach follows the distinction between indirect and direct measurement of poverty introduced by Ringen (1988). Multidimensional approach to poverty offers a possibility to approach poverty not only indirectly, through income, but also provides some direct indication of the standard of living or consumption patterns. However, because the multidimensional concept is far more complex than the unidimensional (i.e. using only income), while bringing a more complete description of the phenomenon, it brings more difficulties at the same time.

Firstly, it is necessary to decide which dimensions are relevant to capture the concept of poverty and then to find a way to construct (operationalise) them in a rational way. There are a number of difficult points here: how many dimensions to choose, how to construct them and how to measure the deprivation on each of them. The answers to these questions are of a key importance because the choice and construction of the dimensions will affect all the further analyses.

Other difficulties are related to the cross-country perspective employed in the paper. To begin with, it is not only necessary to find the relevant dimensions and their indicators within particular countries, but also to consider if the dimensions (indicators) are still relevant when analysing different countries. For instance, some goods may be so common (or so rare) in certain countries that they are weak indicators of poverty, while, in other countries, they could be much more meaningful in this respect.

Furthermore, the dimensions of poverty and social exclusion are theoretical (and, in principle, latent) constructs, which can be observed empirically through some sets of indicators. Thus, because of the differences in the level of living between countries, it is possible that in different countries different indicators constitute certain dimension. And, vice versa, the same set of indicators may form different dimensions in different countries. Therefore, to believe that the results are reliable, a very careful investigation of the situation in the country along with theoretical consideration is essential.

In spite of the difficulties described above, employing the multidimensional approach is worth the effort because of the advantages it offers. The phenomena of poverty and social exclusion are so complex that to fully understand them it is necessary to explore them in a complex way. From the perspective of this paper the most important feature of a multidimensional approach to poverty are substantial differences between the dimensions. Consequently, different life situations constituted by specific combinations of poverty dimensions will have different consequences for the way in which the individual functions in society. Therefore, it will be assumed that using more than one dimension of poverty not only gives more precise insight into people's living situation but it also allows to trace and distinguish between different results of being in a particular living situation.

Social exclusion

Having briefly described main issues related to the concept of poverty, I will move on to the concept of social exclusion. The term *social exclusion* has become very popular recently, but as it is much fresher than *poverty*, it is also less firmly established.

In most general terms, we can say that the notion "social exclusion", when compared with the notion "poverty", shifts the focus from living conditions to social relations. However, there are various ways of understanding the term among the social scientists and different scholars accentuate different aspects of the concept.

Social exclusion is often conceptualised using the framework of the "centre" and the "periphery" rather than the vertical image of social stratification (e.g. Kreckel, 1992). The emphasis is put on the unequal access to material and symbolic resources, *i.e.* on the issue of power: the

“centre” is characterised by the accumulation of resources and concentration of power, the “periphery” by lack of resources and lack of power.

Another point that is present in the discussion about social exclusion emphasises the institutional aspect and concerns the individual’s rights and duties towards society. The excluded are those who are not able to execute the rights to which they are entitled; they have limited access to the social institutions that should be available to everybody. They also do not fulfil the duties they have towards society, for instance, they do not vote, because they feel useless for society; they have no role defined in the society.

Another aspects stressed in the debate are the relations with other members of the society. The excluded do not participate in social and cultural life; they restrict their social contacts with other people. This can lead to stigmatisation and social isolation, which, in turn, results in reinforcement of their exclusion and in decrease of their chances to return to the society.

There is still an ongoing debate about the distinctive features of the notion of social exclusion. Room (1999) points to five key factors that constitute the concept:

1. Social exclusion is multidimensional – not about income alone but a wide range of indicators of living standards;
2. Social exclusion is dynamic – analysing social exclusion means understanding a process and identifying the factors which can trigger entry or exit;
3. Social exclusion has a neighbourhood dimension – deprivation is caused not only by lack of personal resources but also by insufficient or unsatisfactory community facilities, such as run-down schools, remotely-sited shops, poor public transport networks and so on;
4. Social exclusion is relational – the notion of poverty is primarily focused upon distributional issues, the lack of resources at the disposal of an individual or a household. In contrast, social exclusion focuses more on relational issues: in other words, inadequate social participation, lack of social integration and lack of power;
5. Social exclusion implies a major discontinuity in relationships with the rest of society.

Wilson (1991) concludes that social exclusion means both ‘marginal economic position’ and ‘social isolation’, while Atkinson (1998) points at another element – poor prospects for the future of the excluded. Kronauer (1998) has distinguished four dimensions of social exclusion: (i) exclusion from labour market, (ii) economic exclusion, (iii) cultural exclusion, (iv) social isolation and (v) institutional exclusion.

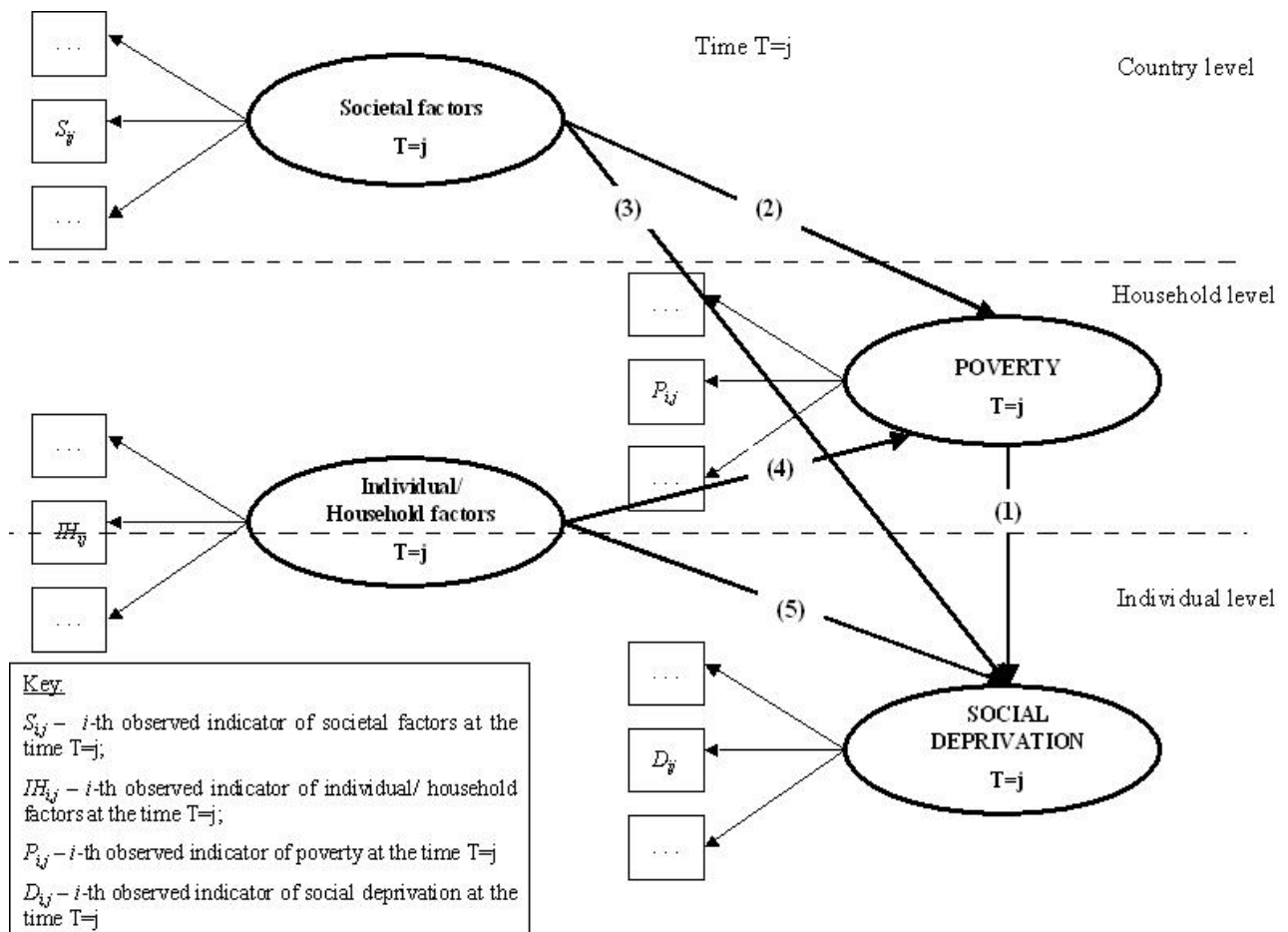
From the perspective of this paper, the most important conclusion is that we can define a number of aspects (or dimensions) of social exclusion constituting two groups: material deprivation

and deprivation in terms of social behaviour of the individual (relations with other people, access to institutions, using cultural resources of the society, etc.). On the basis of this distinction, I will define social exclusion in terms of a coincidence between multidimensional poverty and ‘social deprivation’ by which I mean weak relations with the rest of society. A pivotal point is here to underline that I treat social deprivation as a *consequence of poverty* – I assume that a difficult material conditions lead to exclusion from society also in terms of social contacts and social participation. When, in addition to deprivation in terms of *possession* there is also deprivation in terms of *relations* with society, we can talk about social exclusion.

Social deprivation as a consequence of poverty

Picture one presents the general conceptual model used in this paper. It describes relations of four elements: multidimensional poverty, social deprivation, societal factors and individual/household factors. The main interest lies in the estimation of the effects of multidimensional poverty on different dimensions of social deprivation.

Fig. 1. A general model of relations between poverty and social deprivation



Poverty is defined here at the household level, *i.e.* I will assume that people living in one household share financial resources and the standard of living. Social deprivation, however, is defined at the individual level, *i.e.* I will assume that people form their relations with society individually. In relation to the household context, this means that, although the people living in the same household are either all poor or all non-poor, some of them can be qualified as socially deprived while others as non-deprived.

By the societal factors, I will understand all the relevant characteristics of the society in which individual lives. The assumption is here, that the same person (*i.e.* with the same individual characteristics) may act differently in different societal context, and ultimately, that his/her material situation could have different consequences in different countries. This is a very important point from a cross-country perspective employed in the paper, as I will try to find differences between societies in the observed relations.

The individual/ household factors describe ‘usual suspects’ - the characteristics of individuals and households that can affect poverty and/ or social deprivation. These will serve as control variables to remove the spurious effects of poverty on social deprivation.

The model presented on Fig.1 is a static model, *i.e.* all the variables are measured at the same time $T=j$.¹ Given this, I can deal only with the issues of incidence but not about duration or history of the analysed phenomena. Under this constraint, my main points of interest are constituted by the following general hypotheses and research goals:

Hypothesis 1: All forms of multidimensional poverty have a negative effect on social deprivation.

Hypothesis 2: The strength of this (negative) effect is different for different dimensions of poverty (and their different combinations).

Hypothesis 3: The patterns the observed effects of poverty on social deprivation are different in different countries.

Hypothesis 4: The patterns of the observed effects are different for different dimensions of social deprivation.

¹ A dynamic approach to the issues presented here will be employed in the near future.

Hypothesis 1 is the most general one and says that whether poverty is of more or less severe kind, it will affect negatively social relations of the individual.

Hypothesis 2 says in other words, that different 'kinds' of poverty have different consequences on how the individuals function in society (arrow 1 on Fig.1). Therefore, it is a crucial test whether it is meaningful and worth the effort to employ multidimensional approach to poverty. If there were no differences in the consequences that have different dimensions of poverty, there would be no sense to bother about defining poverty as a multidimensional phenomenon; one dimension (e.g. income) would be enough.

Hypothesis 3 says that different societal contexts produce different results in terms of poverty and social deprivation (arrows 2 and 3 on Fig.1) and the relation between them. Therefore, it is a test whether it makes sense to analyse the relation between poverty and social deprivation cross-nationally. If there were no differences between countries, one country would be enough to see the pattern of the relations.

Hypothesis 4 states that there are differences between the dimensions of social deprivation, i.e. that the same form of poverty may affect in a different way different aspects of social deprivation. Thus, it is tests whether it makes sense to distinguish between various dimensions of social deprivation.

Naturally, I assume that poverty, social exclusion and the relationship between them are conditioned by various individual factors, *i.e.* the characteristics of the people and households concerned (arrows (4) and (5) on Fig. 1) Then, on the one hand it is necessary to control for the relevant factors to estimate properly the effects of poverty on social deprivation. On the other hand, the influence of these individual/household factors on social deprivation can be also interesting. A cross-country perspective will enable to assess possible differences in the effects of individual factors between societies.

Data

The paper makes use of the 7th wave of the European Community Household Panel, which means that the data were collected in 2001 year.² The dataset contains the information on 61,330 households and 124,937 adults (individuals aged 16 and over) who completed the personal interview coming from 15 Western-European countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom. However, due to not full compatibility of the national versions of the questionnaire, I could not operationalise all the relevant variables for Sweden, Germany,

² In the next step, I would also like to show some trends in the observed results, provided that they are substantially interesting. These results should be available for the conference in Barcelona.

Luxembourg, and in some cases for the United Kingdom. For this reason, these countries have been excluded from (a major part of) the analysis.

The reason for which the 7th wave of the survey has been chosen to start with, is related to the way in which data on income are collected in the ECHP: all questions about income concern the year preceding the survey, while the questions on the other topics concern the current situation. Therefore, it is necessary to move the information on income one wave back. In consequence, the 7th wave is the latest wave on which reliable information on income can be obtained, for the 8th (last) wave of the ECHP only rough estimates of current income are available.

Multidimensional poverty - operationalisation

All dimensions of poverty are defined in this paper in relative terms, which means that the situation of a person (or household) is compared to the situation of other people (households) in the same country. Consequently, as deprived will be defined those people (households) that are in (much) worse situation than the majority of people in the society in which they live, disregarding how high the standard of their living is in the absolute terms. For instance, if two individuals living in different countries both have their income equal to 60% of the median income in their country, they will be treated as being cross-nationally “equivalent”, i.e. occupying the same point on a poverty scale. The problem is that their actual standard of living can be different because of the differences in the development and general well-being levels between the societies in which they live. It is important to underline this point because of a cross-national perspective employed in this paper.

When a relative approach is employed, a pivotal issue is the choice of the reference group, i.e. the group to which the situation of an individual (household) is compared. Given a cross-national perspective of this paper it is quite natural that the reference group is the population in a particular country. In general however, this is not the only possible solution. Townsend’s (1997) definition of poverty³ refers to the society to which an individual belongs. In principle, this could be defined at a regional instead of national level, and this could be more accurate solution in certain cases, because standard of living (or even more often the level of income) may differ substantially within the country. Consequently, income at the level of, let say, 60% of the national median income may be sufficient for living at a decent standard in one region (or in the countryside), while it may not be sufficient in another region (or in the capital). On the other hand, in the time of emerging pan-European society one could argue that the national context of comparisons is

³ “Individuals (...) can be said to be in poverty when they lack the resources to obtain the types of diet, participate in the activities and have the living conditions and amenities which are customary, or at least widely encouraged or approved, in the societies to which they belong” (Townsend, 1979).

irrelevant and should be replaced by the European one, because the needs of the European citizens and their expectations concerning the standard of living are becoming more and more similar. As mentioned before, in this paper, given its cross-country perspective, I will define the reference group at the national level. It is worth, however, to keep in mind the above remarks.

When it comes to an operationalisation of such concept as a multidimensional poverty a number of questions is to be addressed. Firstly, how many dimensions are to be considered? Secondly, which indicators will constitute particular dimensions? Thirdly, how to measure deprivation on each of the dimensions? Lastly, where to establish a cut-off point on the basis of which we could categorize people as deprived versus non-deprived. This section shows how these practical questions have been answered in the paper.

The first question then is what dimensions of living-standard deprivation should be considered in addition to income. Whelan et al. (2001) in addition to income, initially distinguished five dimensions of deprivation, which they term basic, secondary, housing facilities, housing deterioration and environment, but they finally focused mainly on the first two of them. I will also make use of these two dimensions, but I will call them differently: basic necessities dimension and consumer durables dimension.⁴ Therefore, I will consider three dimensions of poverty: income, basic necessities and consumer durables.

The dimension of basic necessities is composed on the basis of the responses to the following questions: *“There are some things many people cannot afford even if they would like them. Can I just check whether your household can afford these, if you want them?”*

- Keeping home adequately warm
- Paying for a week annual holiday away from home
- Replacing any worn-out furniture
- Buying new, rather than second-hand, clothes
- Eating meat, chicken or fish every second day, if wanted
- Having friends or family for drink or meal at least once a month

The information about last item included in this dimension – arrears, was collected in a different way - on the basis of the question *“Has your household been in arrears at any time during the past 12 months, that is, unable to pay as scheduled any of the following: (a) Rent for accommodation, (b) Mortgage payments, (c) Utility bills, such as for electricity, water, gas, (d) Hire purchase*

⁴ Initially, similarly to Whelan et al. (2001), I have distinguished more dimensions of living-standard deprivation – in addition to those used in the paper two other dimensions seem to be worth to consider: housing quality dimension and neighbourhood dimension. However, due to problems with the estimation of such more complex models, for the time being I have been forced to restrict the analysis to the first two dimensions.

instalments or other loan repayments?” A household is defined as being in arrears if the answer for any of these questions was positive.

The second dimension – consumer durables, has been based on the information about the items possessed by the household. The list of items included:

- A car or van (for private use)
- A colour TV
- A video recorder
- A micro wave
- A dishwasher
- A telephone
- A home computer

It is necessary to underline here that all the information available is simply this about whether an item is possessed or not. All the questions concerning the quality, condition, age, etc. of the items are ignored. Consequently I am forced to treat all the households that possess a car exactly in the same way, whether they have a new luxury car or very old and cheap one. However, as the focus of the paper is on the deprivation (i.e. the fact of not possessing items) rather than general standard of living, these concerns are somewhat less important.

In the case of this dimension, contrary to some authors (e.g. Whelan et al. 2001, Barnes et al. 2002) I use simply the information about the fact whether an item is possessed or not, ignoring the follow-up question whether non-possession is due to inability to afford the item or not. There are three reasons for which I proceed in this way. Firstly, the indicator of possession/not possession only, in my opinion, is more objective because some people might be ashamed to confirm that they are not able to afford an item (e.g. a PC) and it is easier for them to say that they do not need the item that much. Therefore, including the question about reason of non-possession may lead to underestimation of this kind of deprivation. Secondly, the way of proceeding that I have chosen ensures that the second dimension is defined in the way that is consistent with the other dimensions. Then, since we do not have the information if someone has a certain level of income (perhaps below a poverty line) because he/she do not want to earn more (e.g. because he/she wants to have more free time), consequently we should not use the information why people do not possess an item (or rather what they claim about the reason) but concentrate on the fact whether the item is possessed or not. Thirdly, as the items are weighted (by the proportion of non-deprived persons in a particular

country) to construct the deprivation score on a particular dimension,⁵ it would be strange if people who do not possess an item but claim that they do not need it, increased the deprivation score of people who also do not possess the item but admit they cannot afford it. Finally, and perhaps most importantly, as I am interested in the effects of poverty on social deprivation, I assume that, the lack of items itself (regardless of the reason) result in decrease of social status, which in turn may influence relations with other people.

The statistical reliability of the dimensions constructed in this is quite decent: the necessities dimension has a value of Cronbach alpha of 0,80 while the durables 0,69.

When the composition of the dimensions has been finally established, the next two questions should be answered: how to measure the situation of a particular household (and people living in this household) on each of the dimensions and where to fix a cut-off point - the threshold that will separate, on a particular dimension, deprived from non-deprived people.

In the case of income dimension I have employed a common approach: I use as an indicator the total net household disposable income (i.e. income after taxes and social transfers) divided by the modified OECD⁶ scale to adjust for household size. The usual assumption of equal distribution of income among all members of the household is applied. For the purpose of this paper I have chosen the most popular definition of the cut-off point – it is set at 60% of the median national equivalised disposable income.

In the case of living-standard deprivation dimensions I have proceeded in the following way. First, answers to all the questions were recoded into opposition deprived versus non-deprived on a particular item. For example, in the question whether a household can afford keeping home adequately warm or in the case of the question whether the household possesses a telephone, those with “yes” answers are considered non-deprived and with “no” answers as deprived. Conversely, in the case of question whether a household is in arrears, those with “yes” answers are qualified deprived on this item, while those with “no” answers as non-deprived, etc. In the next step, the items within each dimension were combined into indices by taking a weighted sum of them. If a household was not deprived on a particular item, it was assigned a value of 0; if it was deprived, it was assigned a value equal to the proportion of people in non-deprived households in a given country. By proceeding in this fashion the relative degree of deprivation is taken into account, i.e. the items on which many households in a given country are non-deprived will add more to an index for the deprived households, while the items on which many households are deprived in a given country will add less to an index for a deprived household. This is in a line with a common sense,

⁵ See the discussion below on combining particular items into indices.

⁶ The modified OECD scale assigns a weight of 1 to the first adult in the household, a weight of 0.5 to any other person aged 14 and over and a weight of 0.5 to each child (below 14) in the household.

which says that if many people in a given country are deprived on a particular item (e.g. they do not possess a telephone) their deprivation is lower than if there were only very few people deprived. Moreover, this method resolves, at least partially, the problem that we do not have the information whether a particular item is considered necessary for decent living in a particular society⁷. Here, by taking into account the prevalence of the items in the society, we implicitly assume that the more an item is desired, the more people have it, i.e. are non-deprived on this item.

Having defined the way of measuring the deprivation on each dimension, the last question remains: how to set a cut-off point that will separate the deprived from the non-deprived. I have chosen to set the cut-off point in relation to the maximum possible deprivation score in a given country, rather than median or average. The reason for this was that as many households in the European countries are deprived in neither of the items constituting the dimensions, the measures of central tendency do not adequately summarize the situation and using them may lead to unstable results (e.g. Muffels, 2002). Therefore, the maximum score for each dimension in each country has been computed, which is the score that would get a household deprived on all the items constituting a particular dimension. I have chosen a cut-off point equal to 0.3 of the maximum score. In the case of both dimensions, which are constructed on the basis of 7 items each, the threshold set at 0.3 of the maximum means that, if the prevalence of every of the constituting the dimension items was the same in a given country, to be qualified as deprived a household had to be deprived on more than two items (when the household was deprived on exactly two items, then under the assumption of equal prevalence of (the deprivation on) each item in a society it would have the score of $2/7 = 0.275$)⁸. In this way, the definition of a threshold in the relation to maximum deprivation score gives more meaningful interpretation of the threshold than in the case of the measures of central tendency. This solution on one hand keeps more or less meaningful interpretation of the deprivation on each dimension, while on the other gives different importance to different components of a particular dimension (i.e. the less households is deprived on a particular item in a given society, the more a household that is deprived on this item will be likely to be deprived on the whole dimension).⁹

I am fully aware that this way of construction of deprivation criteria may be considered as debatable. Nevertheless, in the case when the dimensions have to be constructed on the basis of binary responses to the survey questions, as is the case here, it is hard to find the best and only one

⁷ See the discussion in the section 2.

⁸ Initial analyses using other cut-off values (0.4 and 0.5 of the maximum) shows that, in substantial terms, there are no large differences between the results.

⁹ To clarify this construction let us consider an example. Let us assume that the distribution of non-deprived households on the 7 items constituting the first dimension in a certain country is as follows: 0.5; 0.6; 0.7; 0.7; 0.8; 0.8; 0.9. The maximum deprivation score (i.e. the score of a household that is deprived on all the 7 items) on this dimension is equal to the sum $0.5+0.6+0.7+0.7+0.8+0.8+0.9=4$. The threshold is set to $0.3*4=1.2$. Therefore, a household that is deprived only on the first two items is not considered deprived on the whole dimension (because the sum $0.5+0.6=1.1<1.2$), while a household that is deprived on the first and the fourth item is considered deprived (because $0.5+0.8=1.3>1.2$).

solution. For example, alternatively one could consider as deprived households that are deprived on, let say, 2 out of 7 item that constitute a dimension. But this would be as subjective choice as the one made here, and, in addition, it would completely ignore the importance of particular items for the general deprivation (i.e. the degree of deprivation associated with their prevalence in a society). Any other solution, as setting a cut-off point at, for example, certain percentage point of the average deprivation score is essentially the same in logic, it sets only different number as a cut-off point. On the other hand, it must be remembered that a different definition of cut-off points (and in general a different way of separating the deprived from the non-deprived) would certainly lead to different results. Therefore, it must be borne in mind that the results presented in this paper are only valid given the definitions employed.

When the dimensions have finally been constructed, the next question is, how to deal with such a multidimensional structure. I have answered to this question by defining the position of a household on all the dimensions jointly. Specifically, I have combined all the dimensions of poverty into one categorical variable. I have assigned a value of this variable to each possible combination of the deprivation on each of the dimensions. Any of these combinations I will call a poverty profile. By proceeding in this fashion I will not loose any part of information contained in the data, this is just another way to describe deprivation on four dimensions simultaneously by using one rather than four variables.

The new variable has 8 categories (poverty profiles): (0,0,0), (0,0,1), (0,1,0), (0,1,1), (1,0,0), (1,0,1), (1,1,0), (1,1,1), where 0 means not-deprived and 1 means deprived on a particular dimension, and the ordering of the numbers in each profile is the same as ordering of the dimensions of poverty. An important point here is to underline that these poverty profiles divide society into eight clusters and each of these clusters describes a particular living situation.

(1,1,1) – income-, necessities- and durables-poor: this poverty profile means that person (household) is deprived on all the three dimensions, in a sense it ‘fully deprived’;

(1,1,0) – income- and necessities-poor: a person (household) experiencing this kind of deprivation is income- and necessities-deprived, while is not deprived on the durables dimension. It can be the case that these are the people who leave beyond their income, i.e. despite incomes at a level that is insufficient to cover daily expenses, they try to maintain external signs of decent living standard. This poverty profile may be also experienced by people that used to be in a better financial situation and live at a higher standard but due to some problem (perhaps unemployment) are undergoing more difficult period.

(1,0,1) – income- and durables-poor People experiencing this profile are possibly people who have smaller needs in terms of daily expenses, which can be satisfied even though they do not have high income. Their incomes, however, do not allow them to afford more expensive goods and therefore maintain a decent standard of living;

(1,0,0) – income-poor only: this group of people may contain people who are facing a decrease in income, perhaps due to an unemployment period that have just begun and does not directly affect the standard of living yet;

(0,1,1) – necessities- and durables-poor: this poverty profile may be experienced, for instance, by the people with higher than average needs that cannot be satisfied with incomes they have, even though the incomes are above a poverty threshold. A look at descriptive statistics of the group shows that there are more people reporting serious health problems in this group; this may be one of the sources of higher needs.

(0,1,0) – necessities-poor only: this poverty profile may be experienced by people who, with their limited budgets, decide to spend their money on durables at the cost of restricting other expenses (such as better clothes or eating out)

(0,0,1) – durables-poor only: this poverty profile may indicate people who with their level of income, cannot afford more expensive durables. On the other hand, this may be in some cases a voluntary decision – an examination of composition of this group shows that a large constitute elderly people who may be less keen on buying electronic equipment or cars;

(0,0,0) – non-poor (the reference category in the analyses);

Social deprivation- operationalisation

Social deprivation is difficult both to conceptualise and to operationalise. In approach taken in this paper, it should constitute the complement of material deprivation that decides whether a person may be classified as socially excluded or not. Therefore, it has to be grounded in the debate on the concept of social exclusion. On the basis of the ECHP data it is possible to focus on three aspects of social exclusion that can be thought of as conceptually independent dimensions:

- (1) Social participation – the indicator of this dimension will be whether a person is member of a club/organisation;
- (2) Relations with other people – the indicator of this dimension will be whether a person meets friends/relatives (not living with him/her) or talks to the neighbours at least once a week;
- (3) Prospects for future – as an indicator of this dimension I have chosen a satisfaction index constructed by summing up the scores of satisfaction (measured on the 6-point scale from 1

‘not satisfied at all’ to 6 ‘fully satisfied’) with the following four aspects of life:¹⁰ work or main activity, financial situation, housing situation and amount of leisure time;

As I am conscious that the selected indicators are not perfect and do not fully convey the meaning conveyed by the dimensions, it is hard to find better ones in the ECHP data. Generally, the weak point of all the three variables considered is that they do not report very severe forms of social deprivation, and in fact are certainly not always indicators of deprivation at all. Nevertheless, when for poor clusters of population systematically lower scores are observed, there are premises to believe that they actually may be signs of social exclusion of these groups.

Individual/household factors

I will introduce in the subsequent models a number of control variables. As always it can be debated whether the list is complete and whether it does not contain irrelevant variables. The selection has been largely conditioned by the content of the ECHP data, which does not include reliable information on other potentially useful factors, like for instance, place of the living (city/village). Nevertheless, all the control variables have been selected because it is plausible to assume that they will affect both material and social aspects of an individual (they are the ‘usual suspects’) and the list is as follows:¹¹

At the individual level:

- Age and age squared (to allow for the non-linear relation);
- Sex;
- Level of general education completed (3 categories): 3rd level, 2nd stage of second level; less than 2nd stage of second level;
- Marital status (5 categories): married, divorced/separated/widowed but living in a couple, divorced/separated/widowed living alone, never married but living in a couple, never married living alone). In this way, I can control not only for official marital status, but can also take into account the fact, whether a person lives alone or in a couple, which is a potentially important factor shaping social relationships.
- Health status (a binary indicator whether a person describes his/her health as bad or very bad);

¹⁰ The scale constructed by summing up the responses has the value of Cronbach’s alpha of 0,72 for the 7th wave of the ECHP.

¹¹ Sometimes the control variables were recoded into less detailed categories.

- Main activity status with the job status (13 categories): employed in a paid employment – high job status¹²; employed in a paid employment – higher-medium job status; employed in a paid employment – lower-medium job status; employed in a paid employment – low job status; self-employment – higher-medium job status; self-employment – higher-medium job status; self-employment – lower-medium job status; self-employment – low job status; still in education; retired; unemployed; housewife and other main activity. I have distinguished here between employers in paid employment and self-employed people, as it is again potentially important information when it comes to modelling social relations. A self-employed person will probably have fewer opportunities to contact with other people than a person externally employed. Also the level of satisfaction and social participation;
- Migration (a binary indicator whether a person was born in the country of the present residence or not);

At the household level:

- The same variables as used at the individual level but taken for the household reference person;
- Number of people in the household;
- Household type (6 categories): single-person; single parent with at least one dependent child; couple without children; couple with 1-2 dependent children; couple with 3 or more dependent children; other;

The rationale for introduction both individual- and household- level control variables is that the assumption that social deprivation depends not only on individual characteristics of a person but also on characteristics of the household (for example the social status of family).

¹² The job status has been defined on the basis of the question of principal activity performed: *high* – ‘Legislators, senior officials and managers’, ‘Professionals’ or ‘Technicians and associate professionals’; *higher-medium* – ‘Clerks’ or ‘Service workers and shop and market sales workers’; *lower-medium* – ‘Skilled agricultural and fishery workers’ or ‘Craft and related trades workers’; *low* – ‘Plant and machine operators and assemblers’ or ‘Elementary occupations’.

4. Empirical results¹³

The results presented in this section are based have been obtained using two kinds of statistical tools. The first are OLS and logistic regressions performed at the individual level, the second are multilevel models. SPSS package was used for analyses at the individual level and MLwiN software for the multilevel analyses.

Let us begin with an overview of the general distribution of eight multidimensional poverty profiles in the analysed countries (Table 1).

Table 1. The distribution of adults (persons aged 16+) across the poverty profiles in different countries.

Poverty profile	DK	NL	BL	FR	IRL	IT	GR	SP	PT	AT	FN	LUX	UK
(1,1,1)	44	86	78	198	106	729	1194	664	1193	102	139	25	112
	1,2 %	1,1 %	1,9 %	2,0 %	2,7 %	5,7 %	13,1 %	5,7 %	11,2 %	1,9 %	2,6 %	0,5 %	1,4 %
(1,1,0)	24	69	52	209	17	658	291	474	159	48	66	52	175
	0,7 %	0,9 %	1,3 %	2,2 %	0,4 %	5,1 %	3,2 %	4,1 %	1,5 %	0,9 %	1,2 %	1,1 %	2,1 %
(1,0,1)	216	177	207	394	406	358	233	266	378	191	289	144	252
	6,0 %	2,3 %	5,0 %	4,1 %	10,2 %	2,8 %	2,6 %	2,3 %	3,5 %	3,5 %	5,4 %	3,2 %	3,1 %
(1,0,0)	181	361	270	719	314	625	209	710	405	253	200	274	732
	5,0 %	4,7 %	6,5 %	7,4 %	7,9 %	4,9 %	2,3 %	6,1 %	3,8 %	4,7 %	3,8 %	6,0 %	8,9 %
(0,1,1)	40	235	79	128	47	839	1689	958	1275	178	171	30	179
	1,1 %	3,0 %	1,9 %	1,3 %	1,2 %	6,5 %	18,6 %	8,3 %	11,9 %	3,3 %	3,2 %	0,7 %	2,2 %
(0,1,0)	46	219	112	388	44	1089	1243	1235	1077	277	306	60	400
	1,3 %	2,8 %	2,7 %	4,0 %	1,1 %	8,5 %	13,7 %	10,7 %	10,1 %	5,1 %	5,8 %	1,3 %	4,9 %
(0,0,1)	489	1277	658	1033	526	1445	1011	1136	1392	862	775	884	684
	13,6 %	16,5 %	15,8 %	10,6 %	13,2 %	11,2 %	11,1 %	9,8 %	13,0 %	16,0 %	14,6 %	19,4 %	8,4 %
(0,0,0)	2568	5306	2699	6645	2518	7140	3231	6119	4797	3481	3358	3098	5652
	71,2 %	68,6 %	65,0 %	68,4 %	63,3 %	55,4 %	35,5 %	52,9 %	44,9 %	64,6 %	63,3 %	67,8 %	69,0 %
Total	3608	7730	4155	9714	3978	12883	9101	11562	10676	5392	5304	4567	8186
	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %

Source: ECHP, 7th wave

(1,1,1) – income & necessities & durables poor; (1,1,0) - income & necessities poor; (1,0,1) – income & durables poor; (1,0,0) – income poor; (0,1,1) – necessities & durables poor; (0,1,0) – necessities poor; (0,0,1) – durables poor; (0,0,0) – non-poor;

We can see that the distribution of poverty profiles differs substantially between countries. Greece and Portugal have the highest percentage of adults on the most severe (1,1,1) profile, while in Italy and Spain relatively more frequent than in the other countries is (1,1,0) profile. In Ireland we can see a high proportions deprived on (1,0,1) profile. The (1,0,0) profile – only income poverty is most common in the UK and Ireland and somewhat less in France. Greece and Portugal, and to a lesser extent Spain and Italy, have the largest of all countries proportions of adults on the (0,1,1)

¹³ All the results presented in the paper, with the exception of multilevel models, are based on the weighted data - weights were used to adjust for within-country non-response rates.

profiles – people that are above the 60%-of-national-median poverty income, but whose standard of living is relatively low. This suggests that despite being above a poverty line in the relative terms, people in the Southern European countries are not able to maintain the standard of living of their counterparts in other countries.

It is also quite interesting that Southern European countries have higher than other countries proportions of adults deprived on (0,1,0) profile, while the profile (0,0,1) is less common there than in other countries. Finally, we can notice that the percentage of people deprived on neither of the dimensions is lowest in Greece and Portugal followed by Spain and Italy.

In the next step I have performed a number of regression analyses for each country separately to obtain a general picture of similarities and differences between them. In each country six models have been fitted (two for each dimension of social deprivation) – the first is a simple ‘unrestricted’ model with the poverty profile as the only one predictor and a social deprivation profile as a dependent variable, in the second the individual level control variables have been included. Unfortunately, due to small sample sizes, and particularly a small number of cases in the particular categories of the main predictor variable (poverty profile), it was impossible to introduce the interactions between independent variables. I will add the interaction terms in the next step, when the model will be estimated using the data from all the countries together. Table 2 contains the regression coefficient of poverty profiles for the model with control variables, while tables A1-A3 in the appendix contain all the coefficients (including those for control variables) for models both with and without control variables.

In the case of membership in a club/organisation, we can conclude that in all countries, with the exception of Denmark¹⁴ and Greece, the poverty profile has quite strong and significant effect on the dependent variable, even when the individual characteristics are controlled for. Most of the profiles differ significantly from the reference category, which is (0,0,0) – non-poor. We can also notice, that usually, the strongest effects have the combinations (1,1,1), (0,1,1) and (1,0,1), much stronger, than, for example, the profile (1,0,0). This is a very interesting finding, because it suggests that what moves people to withdraw from participation is not their relatively low income but the situation when their standard of living is low, even if they have income above the poverty line (e.g. profile (0,1,1)).

Another very interesting finding is that the effects of poverty profile are generally very strong compared to the effects of the individual characteristics (see table A1 in the appendix). However, when we look at the explanatory power of the models (R^2 measures) we can see that it is still quite modest.

¹⁴ Here, the lack of significant effects is probably due to small numbers of individuals on particular poverty profiles (see Tab. 1).

Table 2. The effects of poverty profiles on social deprivation dimensions in different countries (model with control variables) – the effects significant at 0.05 level have been bolded (for details see tables A1-A3 in the appendix)

<i>Membership in a club/organisation (logistic regression)</i>												
Poverty profile	DK	NL	BL	FR	IRL	IT	GR	SP	PT	AUT	FIN	UK
(1,1,1)	-1,32	-1,36	-1,12	-0,88	-1,15	-1,16	-0,65	-0,71	-1,12	-1,13	-1,00	-
(1,1,0)	-0,61	-0,46	-0,70	-0,82	0,52	-0,69	-0,21	-0,94	0,14	-0,38	-0,59	-
(1,0,1)	-0,86	-0,61	-1,24	-0,56	-0,89	-1,22	-1,57	-0,12	-1,18	-0,35	-0,38	-
(1,0,0)	0,05	-0,29	-0,47	-0,49	-0,28	-0,44	-0,28	-0,44	-0,50	0,10	-0,20	-
(0,1,1)	-0,27	-1,26	-0,92	-0,57	-1,02	-0,82	-0,48	-0,93	-0,65	-1,10	-0,93	-
(0,1,0)	-0,01	-0,66	-0,77	-0,37	-0,60	-0,35	-0,18	-0,36	-0,12	-0,90	-0,42	-
(0,0,1)	-0,49	-0,48	-0,38	-0,31	-0,30	-0,27	-0,34	0,03	-0,92	-0,39	-0,30	-
<i>Contacts with friends/family/neighbours (logistic regression)</i>												
Poverty profile	DK	NL	BL	FR	IRL	IT	GR	SP	PT	AUT	FIN	UK
(1,1,1)	-1,40	-0,42	-0,22	-1,02	1,20	-0,62	0,26	-0,28	0,17	-1,31	-0,76	-0,80
(1,1,0)	0,06	-1,46	-1,12	-1,09	16,58	-0,60	-0,50	-0,21	0,33	-1,28	-1,58	-0,40
(1,0,1)	0,33	0,08	-0,27	-0,28	-0,67	-0,43	0,07	0,52	0,13	-0,36	0,10	-0,37
(1,0,0)	0,33	-0,33	-0,76	-0,16	-1,05	-0,05	-0,72	-0,46	0,47	-0,58	-0,73	-0,21
(0,1,1)	-1,08	-0,57	-0,07	-0,74	-2,61	-0,62	-0,51	-0,23	0,38	-1,41	-1,51	-0,94
(0,1,0)	-0,27	0,16	-0,39	-0,62	-0,36	-0,73	-0,41	-0,27	0,13	-2,61	-0,90	-0,25
(0,0,1)	-0,48	-0,12	-0,52	-0,41	0,71	0,00	0,38	-0,30	0,37	-0,41	-0,83	-0,30
<i>Satisfaction with life (OLS regression)</i>												
Poverty profile	DK	NL	BL	FR	IRL	IT	GR	SP	PT	AUT	FIN	UK
(1,1,1)	-0,12	-0,11	-0,17	-0,18	-0,18	-0,21	-0,30	-0,19	-0,23	-0,14	-0,15	-0,09
(1,1,0)	-0,06	-0,09	-0,16	-0,14	-0,05	-0,16	-0,11	-0,14	-0,04	-0,07	-0,10	-0,09
(1,0,1)	-0,04	-0,05	-0,02	-0,10	-0,12	-0,03	-0,07	-0,04	-0,06	-0,07	-0,04	-0,04
(1,0,0)	-0,08	-0,03	-0,04	-0,08	-0,04	-0,08	-0,07	-0,06	-0,04	-0,10	-0,02	-0,09
(0,1,1)	-0,12	-0,13	-0,08	-0,09	-0,05	-0,15	-0,21	-0,15	-0,18	-0,19	-0,13	-0,09
(0,1,0)	-0,09	-0,08	-0,12	-0,13	-0,08	-0,13	-0,15	-0,12	-0,12	-0,18	-0,1	-0,12
(0,0,1)	-0,02	0,01	-0,06	-0,04	-0,09	-0,02	-0,04	-0,06	-0,06	-0,03	0,02	-0,04

Source: ECHP, 7th wave; (1,1,1) – income & necessities & durables poor; (1,1,0) - income & necessities poor; (1,0,1) – income & durables poor; (1,0,0) – income poor; (0,1,1) – necessities & durables poor; (0,1,0) – necessities poor; (0,0,1) – durables poor; (0,0,0) – non-poor;

In the case of relations with friends, family and neighbours we can generally conclude that the effects seem to be weaker than in the case of membership in clubs/organisations. However, there are four countries, namely France, Italy, Austria and Finland that almost all poverty profiles have significant effect on the dependent variable.

In the case of satisfaction with life, we find quite uniform pattern across countries – all or almost all poverty profiles have significant negative effects on the satisfaction with life. These effects are also generally strong compared to the control variables (see table A3 in the appendix). As in the case of membership in clubs/organisations the profiles (1,1,1) and (0,1,1) have stronger effects than the other profiles. Interestingly, these poverty profiles have also much stronger negative effect in the case of Southern European countries than in others.

In the next step I have fitted five models for each dependent variable using the data for all the countries together. By proceeding in this way I can assess the differences in effects between countries. Larger sample size allows also for including interaction terms. Model 1 is the simplest model with poverty profile as the only predictor, Model 2 is Model one plus country dummies, Model 3 is Model 2 plus individual characteristics, Model 4 is Model 3 plus the interaction terms between poverty profiles and finally Model 5 is Model 4 plus the interaction terms between poverty profiles and the individual characteristics. Full results of these analyses (including coefficients for control variables) are presented in tables A4-A6 in the appendix, while Table 3 contains regression coefficients only for poverty profiles. The analysis of these models will help to assess the differences between the effects of poverty profiles on social deprivation dimensions and also to see the differences between the patterns of influence across the countries.

Table 3. The effects of poverty profiles on social deprivation dimensions for all countries pooled together; the effects significant at 0.05 level have been bolded (for details see tables A4-A9 in the appendix)

<i>Membership in a club/organisation (logistic regression)</i>										
	Model 1 (poverty profile only)		Model 2 (Model 1 + country dummies)		Model 3 (Model 2 + control variables)		Model 4 (Model 3 + country*poverty profile interactions)		Model 5 (Model 3 + control variables*poverty profile interactions)	
Pov profile	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.
(1,1,1)	-1,79	0,00	-1,37	0,00	-1,05	0,00	-0,80	0,01	-2,00	0,00
(1,1,0)	-1,19	0,00	-0,87	0,00	-0,61	0,00	-0,56	0,18	1,11	0,13
(1,0,1)	-0,70	0,00	-0,86	0,00	-0,65	0,00	-0,43	0,00	0,47	0,39
(1,0,0)	-0,44	0,00	-0,44	0,00	-0,31	0,00	0,27	0,13	1,01	0,02
(0,1,1)	-1,57	0,00	-1,13	0,00	-0,86	0,00	0,14	0,68	-0,39	0,48
(0,1,0)	-0,87	0,00	-0,52	0,00	-0,36	0,00	0,04	0,91	-0,18	0,70
(0,0,1)	-0,45	0,00	-0,48	0,00	-0,35	0,00	-0,14	0,19	-0,10	0,73
<i>Contacts with friends/family/neighbours (logistic regression)</i>										
	Model 1		Model 2		Model 3		Model 4		Model 5	
Pov profile	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.
(1,1,1)	-0,02	0,71	-0,58	0,00	-0,48	0,00	-1,36	0,00	-2,39	0,00
(1,1,0)	-0,39	0,00	-0,64	0,00	-0,76	0,00	0,03	0,97	-0,71	0,57
(1,0,1)	-0,17	0,01	-0,25	0,00	-0,18	0,02	0,43	0,25	-0,56	0,52
(1,0,0)	-0,15	0,01	-0,14	0,02	-0,23	0,00	0,44	0,29	0,16	0,83
(0,1,1)	0,00	0,97	-0,67	0,00	-0,52	0,00	-0,97	0,04	-2,91	0,00
(0,1,0)	-0,25	0,00	-0,69	0,00	-0,72	0,00	-0,18	0,76	-0,40	0,62
(0,0,1)	-0,20	0,00	-0,32	0,00	-0,21	0,00	-0,50	0,01	-0,91	0,08
<i>Satisfaction with life (OLS regression)</i>										
	Model 1		Model 2		Model 3		Model 4		Model 5	
Pov profile	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.
(1,1,1)	-0,25	0,00	-0,20	0,00	-0,18	0,00	-0,16	0,00	-0,15	0,00
(1,1,0)	-0,16	0,00	-0,13	0,00	-0,11	0,00	-0,11	0,00	-0,09	0,00
(1,0,1)	-0,03	0,00	-0,04	0,00	-0,05	0,00	0,01	0,23	0,05	0,01
(1,0,0)	-0,08	0,00	-0,07	0,00	-0,06	0,00	-0,04	0,00	-0,07	0,00
(0,1,1)	-0,21	0,00	-0,15	0,00	-0,14	0,00	-0,18	0,00	-0,21	0,00
(0,1,0)	-0,18	0,00	-0,14	0,00	-0,11	0,00	-0,17	0,00	-0,17	0,00
(0,0,1)	-0,01	0,00	-0,01	0,00	-0,03	0,00	0,04	0,00	0,00	0,89

Source: ECHP, 7th wave; (1,1,1) – income & necessities & durables poor; (1,1,0) - income & necessities poor; (1,0,1) – income & durables poor; (1,0,0) – income poor; (0,1,1) – necessities & durables poor; (0,1,0) – necessities poor; (0,0,1) – durables poor; (0,0,0) – non-poor;

A general conclusion from Table 3 is that there is a strong support for the hypothesis that all poverty profiles have a negative effect on (all the dimensions of) social deprivation (see Model 3). We can see also that the effects differ in magnitude for different poverty profiles; in the following paragraph I will look closer at these differences.

Variation between poverty profiles and social deprivation dimensions

A closer examination of the Model 3 results will give an answer to the questions about differences between the effects of particular poverty profiles on social deprivation. At a first glance we can see that some poverty profiles have much stronger effects on social deprivation than others and that the pattern is generally similar to that observed when countries were analysed separately (e.g. a strong effects of (1,1,1) and (0,1,1) profiles. However, to investigate the matter more systematically, I have estimated Model 3 several times, each time taking the other poverty profile as a reference category. This procedure has allowed me to formally test the differences between the effects of particular poverty profiles and to divide them into a number of distinct clusters. Table 4 presents the results of this analysis.

Table 4. Clusters of poverty profiles ordered according the strength of their negative effects on social deprivation dimensions

Rank	Membership	Contacts	Satisfaction
1	(1,1,1)	(1,1,0) (0,1,0)	(1,1,1)
2	(0,1,1)	(1,1,1) (0,1,1)	(1,1,0)
3	(1,1,0) (1,0,1)	(1,0,1) (1,0,0) (0,0,1)	(0,1,1)
4	(1,0,0) (0,1,0) (0,0,1)	(0,0,0)	(0,1,0)
5	(0,0,0)		(1,0,1) (1,0,0)
6			(0,0,1)
7			(0,0,0)

The findings are very interesting. First, we see that the poverty profiles are meaningful – although sometimes the differences between some profiles is not significant and they put in one cluster, the composition of these clusters is different across the dimensions of social deprivation.

Therefore, there is no single pattern of combining the profiles into broader categories and they should be examined separately.

Secondly, we can see the differences between the dimensions of social deprivation. Interestingly, the profiles (1,1,1) and (0,1,1), which have the strongest negative effect on membership in a club/organisation and satisfaction with life, have less influence on contacts with family and neighbours than the profiles (1,1,0) and (0,1,0). Surprisingly, the profiles (1,1,0) and especially (0,1,0), which are further away in the case of social participation and satisfaction with life dimensions, have the strongest negative effects on the social relations dimension. Generally, it seems that the deprivation on necessities dimension, especially when it coincides with poverty on another dimension is particularly affecting social deprivation. Income poverty seems to be less important here.

Cross country-variation in the pattern of influence

In this paragraph I will examine closer Models 4 and 5, which are of a key importance for the examination of the differences between countries. Model 4 contains all the interaction effects between poverty profiles and country dummies (with Denmark as a reference category) introduced in the model (SPSS ‘forced entry’ method), while Model 5 contains also all the interaction effects between poverty profiles and all the control variables. Tables A7-A9 in the appendix contain only significant variables from these models, all other interactions, however, have also been included in the models and are controlled for. By proceeding in this way, I can assess whether the effects of particular poverty profiles differ significantly across countries and to exclude a possibility that these differences are due to variation in control variables. Table 5 presents all the significant interaction terms that are present in model 5. As a number of the effects is still significant, even though the effects of individual characteristics (‘usual suspects’) and their interactions with poverty profiles are controlled for, we can conclude that there is a variation between countries that cannot be attributed to the differences to the different composition of society (with respect to control variables).

We can notice however, that there are poverty profiles for which there are no significant country-interaction effects associated. This suggests that for some profiles the strength of the effect is quite uniform across the countries. I will come back to this issue in the following paragraph, when the multilevel models will be employed.

Table 5. Significant interaction terms (blacked out fields) between poverty profile and country in a Model 5

<i>Membership in a club/organisation</i>												
Poverty profile	DK	NL	BL	FR	IRL	IT	GR	SP	PT	AUT	FIN	UK
(1,1,1)	<i>ref</i>											-
(1,1,0)	<i>ref</i>											-
(1,0,1)	<i>ref</i>											-
(1,0,0)	<i>ref</i>											-
(0,1,1)	<i>ref</i>											-
(0,1,0)	<i>ref</i>											-
(0,0,1)	<i>ref</i>											-
<i>Contacts with friends/family/neighbours</i>												
Poverty profile	DK	NL	BL	FR	IRL	IT	GR	SP	PT	AUT	FIN	UK
(1,1,1)	<i>ref</i>											
(1,1,0)	<i>ref</i>											
(1,0,1)	<i>ref</i>											
(1,0,0)	<i>ref</i>											
(0,1,1)	<i>ref</i>											
(0,1,0)	<i>ref</i>											
(0,0,1)	<i>ref</i>											
<i>Satisfaction with life</i>												
Poverty profile	DK	NL	BL	FR	IRL	IT	GR	SP	PT	AUT	FIN	UK
(1,1,1)	<i>ref</i>											
(1,1,0)	<i>ref</i>											
(1,0,1)	<i>ref</i>											
(1,0,0)	<i>ref</i>											
(0,1,1)	<i>ref</i>											
(0,1,0)	<i>ref</i>											
(0,0,1)	<i>ref</i>											

Multilevel analysis

As multidimensional poverty is a concept that is defined at the household rather than individual level, a more adequate method of analysis is to use multilevel models, which allows for the to be estimated more precisely. In this paragraph I will present the result of a multilevel analysis with three levels: country, household and individual. This approach will enable to directly asses whether there is a significant variation in the strength of the effect of poverty profiles on social deprivation across the countries.

In the first step I have estimated a fixed-slope model, to check whether the results obtained in the preceding sections are corroborated. As before, first I fitted a ‘base’ model containing only poverty profiles (Model 1), then I added to this model control variables at the individual level

(Model 2) and finally control variables at the household level were introduced (Model 3). Table 6 contains the estimated effects for these models.

Table 6. The effects of poverty profiles on social deprivation dimensions in a 3-level fixed-slope model (with country, household and individual levels)

<i>Membership in a club/organisation</i>						
	Model 1 (only poverty profile)		Model 2 (Model 1 + individual level controls)		Model 3 (Model 2 + household level controls)	
Poverty profile	β	t-value	β	t-value	β	t-value
(1,1,1)	-1,222	-29,805	-1,019	-23,698	-0,977	-21,239
(1,1,0)	-0,719	-13,315	-0,560	-10,000	-0,459	-7,914
(1,0,1)	-0,687	-14,617	-0,559	-11,408	-0,537	-10,529
(1,0,0)	-0,373	-9,564	-0,294	-7,171	-0,241	-5,738
(0,1,1)	-1,018	-26,789	-0,851	-21,821	-0,810	-19,756
(0,1,0)	-0,430	-1,303	-0,329	-9,676	-0,269	-7,686
(0,0,1)	-0,444	-17,077	-0,363	-12,517	-0,366	-12,200
<i>Contacts with friends/family/neighbours</i>						
	Model 1		Model 2		Model 3	
Poverty profile	β	t-value	β	t-value	β	t-value
(1,1,1)	-0,568	-9,016	-0,484	-7,118	-0,559	-8,101
(1,1,0)	-0,603	-6,852	-0,705	-7,747	-0,694	-7,711
(1,0,1)	-0,197	-2,373	-0,147	-1,690	-0,231	-2,655
(1,0,0)	-0,033	-0,434	-0,111	-1,442	-0,090	-1,169
(0,1,1)	-0,573	-9,550	-0,449	-7,016	-0,537	-8,391
(0,1,0)	-0,601	-10,362	-0,634	-10,567	-0,623	-10,559
(0,0,1)	-0,234	-4,680	-0,146	-2,755	-0,241	-4,463
<i>Satisfaction with life</i>						
	Model 1		Model 2		Model 3	
Poverty profile	β	t-value	β	t-value	β	t-value
(1,1,1)	-3,088	-49,016	-3,038	-48,222	-2,874	-43,545
(1,1,0)	-3,084	-32,809	-2,570	-27,935	-2,283	-24,815
(1,0,1)	-0,751	-10,288	-1,005	-13,767	-0,930	-12,400
(1,0,0)	-1,311	-19,279	-1,111	-16,833	-0,972	-14,727
(0,1,1)	-2,295	-38,250	-2,300	-38,333	-2,166	-34,935
(0,1,0)	-1,960	-31,613	-1,712	-28,533	-1,551	-25,850
(0,0,1)	-0,045	-1,023	-0,365	-8,111	-0,377	-8,021

We can see, that the results obtained before are generally confirmed. First, we have negative effects of all the poverty profiles β on all dimensions of social deprivation. Second, we can see the same as before differences between poverty profiles: generally four profiles (1,1,1), (0,1,1) (1,1,0) and (0,1,0) have much stronger negative effects on social deprivation than the other forms of poverty, these are the ‘most socially depriving’ profiles. We can also observe again the differences between dimensions of social deprivation – in the case of membership in clubs/organizations and satisfaction

with life the profiles (1,1,1) and (0,1,1) have the strongest effect, while on relations with other people stronger influence have (0,1,0) and (1,1,0) profiles.

In the final step I have estimated a random-slope model for each of the profiles (controlling for the individual and household background characteristics). The purpose of this analysis is to test more formally than with the single-level model whether there are significant differences between the magnitudes of effects across the countries. Table 7 contains the estimated variance of the slopes on the country level for each poverty profile.

Table 7. Slope variance for different poverty profiles in a 3-level random-slope model (with country, household and individual levels) with controls for individual and household background characteristics

Poverty profile	Membership		Contacts		Satisfaction	
	slope var	t-value	slope var	t-value	slope var	t-value
(1,1,1)	0,015	0,938	-	-	0,295	1,855
(1,1,0)	0,007	0,467	1,094	2,442	0,481	1,857
(1,0,1)	0,080	1,739	1,065	2,443	0,566	2,220
(1,0,0)	0,018	1,200	1,094	2,442	0,193	1,892
(0,1,1)	0,010	1,111	1,079	2,441	0,158	1,699
(0,1,0)	0,027	1,421	1,096	2,441	0,330	2,025
(0,0,1)	0,020	1,667	1,053	2,438	0,255	2,257

The results are a bit ambivalent. In the case of contacts with other people there is a significant variation of the slope between countries for all the poverty profiles (for profile (1,1,1) the model could not converge). However the variances are here a bit suspiciously uniform. In the case of membership in a clubs/organisations we have an opposite situation: there is no significant variation for neither of the profiles. This result may be due to a lower number of countries included (the data on membership are not available for the UK). In the case of satisfaction with life, variation of the slopes for three profiles: (1,0,1), (0,1,0) and (0,0,1) is significant. For the other profiles this could also become significant if more countries were included. Nevertheless, the results from this section need to be re-tested with other wave of the ECHP data.

5. Conclusions

We can conclude that the analyses that have been performed support all the four hypotheses formulated in the paper. Firstly, all forms of poverty – those less and more severe – have negative effects on social deprivation. Therefore, all kinds of poverty, even those relatively ‘mild’ may lead to social exclusion. Secondly, there are significant differences between strength of these negative effects. It seems that the deprivation on necessities dimension, especially when it coincides with poverty on another dimension is particularly affecting social deprivation. Income poverty seems to

be less important here. Thirdly, the consequences of the particular poverty profiles are different for different dimensions of social deprivation. Finally, the effects differ across the analysed countries – for example, it seems that in the case of satisfaction with life, the negative effects of poverty are stronger in Southern European countries.

This evidence opens a way for further investigation. Especially promising, from the point of my interest, are the cross-country differences in the observed patterns of influence of multidimensional poverty on social deprivation. The next step should be a multilevel analysis with country-level characteristics introduced as explanatory variables for the observed variation in the effects of poverty. Further in the future a longitudinal analysis would be needed to explore the matter in a greater detail. A longitudinal view on the data should allow for more meaningful interpretations of particular poverty profiles. Of course there is also a need to repeat the analyses presented in this paper for different waves of the ECHP data alternatively defined dimensions.

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Table A1. Coefficients of logistic regression models for membership in a club/organisation for different countries

	DK				NL				BL				FR				IRL				IT			
	Model 1		Model 2		Model 1		Model 2		Model 1		Model 2		Model 1		Model 2		Model 1		Model 2		Model 1		Model 2	
	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.
Pov profile		0,00		0,00		0,00		0,00		0,00		0,00		0,00		0,00		0,00		0,00		0,00		0,00
(1,1,1)	-1,16	0,00	-1,32	0,00	-1,60	0,00	-1,36	0,00	-1,33	0,00	-1,12	0,00	-0,99	0,00	-0,88	0,00	-1,64	0,00	-1,15	0,00	-1,67	0,00	-1,16	0,00
(1,1,0)	-0,75	0,00	-0,61	0,15	-0,64	0,01	-0,46	0,08	-1,05	0,00	-0,70	0,06	-1,10	0,00	-0,82	0,00	0,16	0,75	0,52	0,31	-0,94	0,00	-0,69	0,00
(1,0,1)	-0,58	0,07	-0,86	0,00	-0,60	0,00	-0,61	0,00	-1,30	0,00	-1,24	0,00	-0,44	0,00	-0,56	0,00	-1,27	0,00	-0,89	0,00	-1,63	0,00	-1,22	0,00
(1,0,0)	0,15	0,00	0,05	0,76	-0,32	0,00	-0,29	0,01	-0,56	0,00	-0,47	0,00	-0,63	0,00	-0,49	0,00	-0,46	0,00	-0,28	0,03	-0,62	0,00	-0,44	0,00
(0,1,1)	-0,18	0,38	-0,27	0,44	-1,54	0,00	-1,26	0,00	-1,20	0,00	-0,92	0,01	-0,59	0,01	-0,57	0,01	-1,35	0,00	-1,02	0,00	-1,21	0,00	-0,82	0,00
(0,1,0)	-0,26	0,59	-0,01	0,96	-0,76	0,00	-0,66	0,00	-0,82	0,01	-0,77	0,01	-0,56	0,00	-0,37	0,01	-0,80	0,01	-0,60	0,07	-0,51	0,00	-0,35	0,00
(0,0,1)	-0,27	0,40	-0,49	0,00	-0,60	0,00	-0,48	0,00	-0,37	0,00	-0,38	0,00	-0,14	0,07	-0,31	0,00	-0,49	0,00	-0,30	0,00	-0,55	0,00	-0,27	0,00
Age			0,02	0,00			0,00	0,48			0,00	0,51			0,01	0,00			0,00	0,42			0,00	0,33
Sex - Woman			-0,24	0,00			-0,12	0,03			-0,49	0,00			-0,39	0,00			-0,53	0,00			-0,72	0,00
Education				0,01				0,71				0,00				0,00				0,00				0,00
3 rd level			0,27	0,03			0,01	0,93			0,44	0,00			0,65	0,00			0,64	0,00			0,54	0,00
2 nd st of 2 nd			0,30	0,00			0,28	0,41			-0,08	0,42			0,38	0,00			0,50	0,00			0,30	0,00
Bad health			-0,39	0,02			-0,66	0,00			-0,53	0,01			-0,41	0,00			-0,54	0,03			-0,33	0,00
Marit status				0,00				0,03				0,04				0,47				0,54				0,39
Married			-0,29	0,04			-0,11	0,16			-0,26	0,14			0,03	0,72			-0,09	0,37			-0,03	0,63
D/S/W cpl			-1,01	0,00			-0,11	0,56			-1,08	0,02			-0,04	0,85			-0,36	0,45			0,46	0,11
D/S/W aln			-0,38	0,04			-0,27	0,02			-0,26	0,23			0,10	0,36			-0,04	0,79			-0,11	0,36
Nev mar cpl			-0,40	0,01			-0,27	0,01			-0,79	0,01			-0,15	0,21			-0,42	0,15			-0,11	0,64
Main activity				0,01				0,00				0,00				0,00				0,00				0,00
Empl high			0,50	0,02			0,53	0,00			0,45	0,12			0,28	0,03			0,50	0,01			0,56	0,00
Empl h-med			0,32	0,13			0,40	0,00			0,68	0,02			-0,15	0,27			-0,05	0,79			0,56	0,00
Empl l-med			0,53	0,02			0,49	0,00			0,01	0,98			0,11	0,45			0,19	0,35			0,27	0,03
Empl low			0,12	0,61			0,09	0,55			0,55	0,11			-0,30	0,04			0,18	0,36			0,36	0,00
In education			0,48	0,04			0,51	0,00			0,86	0,00			-0,12	0,46			0,43	0,05			0,59	0,00
Retired			0,66	0,00			0,42	0,05			0,83	0,00			0,45	0,00			-0,04	0,88			0,18	0,19
Housewife			0,63	0,12			0,27	0,05			0,74	0,00			0,03	0,85			0,14	0,50			-0,72	0,00
Other			-0,18	0,70			0,33	0,04			0,07	0,83			0,39	0,58			-0,20	0,44			-0,04	0,85
Migrant – yes			-0,02	0,91			-0,11	0,07			-0,01	0,93			-0,26	0,00			-0,09	0,56			-0,31	0,01
Constant	0,76	0,04	-0,23	0,39	-0,01	0,84	-0,05	0,78	-0,12	0,04	-0,53	0,07	-0,73	0,00	-1,27	0,00	0,14	0,00	-0,17	0,42	-0,81	0,00	-1,04	0,00
Cox&Snell R ²		0,01		0,045		0,030		0,046		0,04		0,084		0,013		0,060		0,047		0,093		0,038		0,104
Nagelkerke R ²		0,01		0,062		0,040		0,061		0,06		0,113		0,019		0,085		0,063		0,125		0,057		0,155

Source: ECHP, wave 7; 2nd st of 2nd = 2nd stage of the 2nd level of education; D/S/W cpl = Divorced/Separated/Widowed living in couple; D/S/W aln = Divorced/Separated/Widowed living in alone; Nev mar cpl – never married living in a couple; Empl h-med = Employed, higher-medium job status; Empl h-low = Employed, lower-medium job status. Reference categories: Poverty profile - (0,0,0), Education – lower than 2nd stage of the 2nd level of education; Marital Status – never married; Main activity – Unemployed. The effects significant at the 0,05 level are bolded.

Table A1. Coefficients of logistic regression models for membership in a club/organisation for different countries - continued

	GR				SP				PT				AUT				FIN			
	Model 1		Model 2		Model 1		Model 2		Model 1		Model 2		Model 1		Model 2		Model 1		Model 2	
	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.
Pov profile		0,00		0,00		0,00		0,00		0,00		0,00		0,00		0,00		0,00		0,00
(1,1,1)	-1,52	0,00	-0,65	0,00	-1,06	0,00	-0,71	0,00	-1,58	0,00	-1,12	0,00	-1,61	0,00	-1,13	0,00	-0,91	0,00	-1,00	0,00
(1,1,0)	-0,80	0,00	-0,21	0,41	-1,15	0,00	-0,94	0,00	-0,33	0,09	0,14	0,51	-0,76	0,01	-0,38	0,23	-0,78	0,00	-0,59	0,03
(1,0,1)	-2,27	0,00	-1,57	0,00	-0,44	0,00	-0,12	0,43	-1,51	0,00	-1,18	0,00	-0,61	0,00	-0,35	0,04	-0,35	0,00	-0,38	0,01
(1,0,0)	-0,66	0,01	-0,28	0,31	-0,58	0,00	-0,44	0,00	-0,57	0,00	-0,50	0,00	0,06	0,67	0,10	0,47	-0,23	0,12	-0,20	0,20
(0,1,1)	-1,10	0,00	-0,48	0,00	-1,26	0,00	-0,93	0,00	-1,07	0,00	-0,65	0,00	-1,25	0,00	-1,10	0,00	-1,05	0,00	-0,93	0,00
(0,1,0)	-0,44	0,00	-0,18	0,13	-0,56	0,00	-0,36	0,00	-0,36	0,00	-0,12	0,19	-0,89	0,00	-0,90	0,00	-0,47	0,00	-0,42	0,00
(0,0,1)	-0,79	0,00	-0,34	0,02	-0,21	0,00	0,03	0,72	-1,17	0,00	-0,92	0,00	-0,46	0,00	-0,39	0,00	-0,25	0,00	-0,30	0,00
Age			0,02	0,00			0,00	0,24			0,00	0,17			0,01	0,02			0,01	0,04
Sex - Woman			-0,40	0,00			-0,34	0,00			-1,39	0,00			-0,88	0,00			-0,24	0,00
Education				0,00				0,00				0,00				0,00				0,00
3 rd level			1,23	0,00			0,60	0,00			0,97	0,00			0,54	0,00			0,65	0,00
2 nd st of 2 nd			0,97	0,00			0,27	0,00			0,20	0,01			0,29	0,00			0,28	0,00
Bad health			-0,51	0,04			-0,08	0,39			-0,35	0,00			-0,48	0,00			-0,22	0,01
Marit status				0,47				0,00				0,46				0,03				0,00
Married			-0,09	0,46			0,45	0,00			0,08	0,33			0,00	0,99			0,17	0,07
D/S/W cpl			-18,40	1,00			0,13	0,76			0,36	0,27			-0,39	0,19			-0,53	0,01
D/S/W aln			-0,41	0,07			0,20	0,08			0,07	0,64			0,12	0,34			0,31	0,01
NevM cpl			0,23	0,64			0,10	0,68			0,31	0,12			-0,39	0,01			-0,20	0,13
Main activity				0,00				0,00				0,00				0,00				0,00
Empl high			0,37	0,09			0,25	0,03			0,74	0,00			0,67	0,00			0,36	0,01
Empl h-med			0,30	0,17			0,02	0,85			0,64	0,00			0,72	0,00			0,14	0,34
Empl l-med			0,29	0,20			-0,01	0,95			0,31	0,06			0,80	0,00			0,24	0,11
Empl low			0,03	0,91			-0,18	0,16			0,12	0,49			0,43	0,06			-0,03	0,87
In education			0,91	0,00			0,51	0,00			0,31	0,10			0,71	0,00			0,97	0,00
Retired			-0,49	0,06			-0,06	0,67			0,26	0,15			0,43	0,05			0,48	0,00
Housewife			-0,47	0,06			-0,11	0,35			-0,14	0,53			0,41	0,07			-0,15	0,51
Other			-0,15	0,70			-0,15	0,32			-0,61	0,02			-1,11	0,06			0,19	0,58
Migrant – yes			0,15	0,25			-0,16	0,30			-0,34	0,00			-0,93	0,00			-0,46	0,00
Constant	-1,83	0,00	-3,28	0,00	-0,85	0,00	-1,40	0,00	-0,87	0,00	-1,05	0,00	0,09	0,01	-0,47	0,04	0,39	0,00	-0,46	0,01
Cox&Snell R ²		0,023		0,057		0,029		0,054		0,049		0,140		0,032		0,112		0,017		0,055
Nagelkerke R ²		0,051		0,127		0,044		0,080		0,077		0,219		0,043		0,149		0,023		0,073

Source: ECHP, wave 7 (author's own calculations). 2nd st of 2nd = 2nd stage of the 2nd level of education; D/S/W cpl = Divorced/Separated/Widowed living in couple; D/S/W aln = Divorced/Separated/Widowed living in alone; Nev mar cpl – never married living in a couple; Empl h-med = Employed, higher-medium job status; Empl h-low = Employed, lower-medium job status. Reference categories: Poverty profile - (0,0,0), Education – lower than 2nd stage of the 2nd level of education; Marital Status – never married; Main activity – Unemployed. The effects significant at the 0,05 level are bolded.

Table A2. Coefficients of logistic regression models for contacts with friends/family/neighbours for different countries

	DK				NL				BL				FR				IRL				IT			
	Model 1		Model 2		Model 1		Model 2		Model 1		Model 2		Model 1		Model 2		Model 1		Model 2		Model 1		Model 2	
	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.
Pov profile																								
(1,1,1)	-1,51	0,00	-1,40	0,00	-0,06	0,90	-0,42	0,40	-0,27	0,54	-0,22	0,63	-1,13	0,00	-1,02	0,00	1,06	0,49	1,20	0,44	-0,66	0,00	-0,62	0,00
(1,1,0)	0,17	0,86	0,06	0,95	-1,09	0,00	-1,46	0,00	-1,16	0,00	-1,12	0,01	-1,08	0,00	-1,09	0,00	16,81	1,00	16,58	1,00	-0,35	0,03	-0,60	0,00
(1,0,1)	0,50	0,18	0,33	0,41	0,59	0,20	0,08	0,86	-0,20	0,50	-0,27	0,40	-0,56	0,00	-0,28	0,02	-1,15	0,00	-0,67	0,11	-0,45	0,02	-0,43	0,04
(1,0,0)	0,55	0,19	0,33	0,44	-0,12	0,62	-0,33	0,17	-0,65	0,01	-0,76	0,00	-0,17	0,08	-0,16	0,10	-0,99	0,01	-1,05	0,01	0,03	0,89	-0,05	0,81
(0,1,1)	-0,98	0,03	-1,08	0,03	-0,46	0,07	-0,57	0,04	-0,13	0,80	-0,07	0,91	-0,98	0,00	-0,74	0,00	-2,83	0,00	-2,61	0,00	-0,74	0,00	-0,62	0,00
(0,1,0)	-0,19	0,75	-0,27	0,65	0,29	0,42	0,16	0,65	-0,30	0,53	-0,39	0,42	-0,66	0,00	-0,62	0,00	-0,54	0,62	-0,36	0,75	-0,63	0,00	-0,73	0,00
(0,0,1)	-0,51	0,00	-0,48	0,02	-0,09	0,51	-0,12	0,45	-0,50	0,01	-0,52	0,02	-0,63	0,00	-0,41	0,00	0,48	0,37	0,71	0,21	-0,05	0,71	0,00	0,99
Age			-0,01	0,10			-0,03	0,00			0,00	0,89			-0,02	0,00			-0,03	0,02			-0,01	0,00
Sex - Woman			0,03	0,86			0,34	0,00			-0,54	0,00			0,01	0,91			0,16	0,59			0,32	0,00
Education				0,49				0,18				0,07				0,01					0,28			0,05
3 rd level			-0,16	0,49			0,37	0,29			-0,42	0,08			0,00	1,00			0,82	0,12			-0,37	0,01
2 nd st of 2 nd			0,06	0,76			-0,81	0,13			-0,37	0,04			0,29	0,00			0,13	0,69			-0,08	0,41
Bad health			-0,38	0,18			-0,53	0,01			-0,32	0,26			-0,46	0,00			-0,36	0,56			-0,70	0,00
Marit status				0,11				0,05				0,45				0,79					0,06			0,01
Married			0,37	0,16			-0,41	0,04			-0,06	0,83			0,01	0,88			0,81	0,02			0,01	0,90
D/S/W cpl			0,78	0,29			-0,61	0,12			-0,29	0,66			-0,23	0,27			1,12	0,60			0,06	0,89
D/S/W aln			0,09	0,79			-0,46	0,06			0,08	0,83			0,04	0,74			-0,05	0,91			-0,40	0,01
Nev mar cpl			-0,24	0,41			-0,69	0,00			-0,78	0,08			-0,02	0,90			-0,51	0,52			0,15	0,74
Main activity				0,00				0,00				0,49				0,00					0,03			0,00
Empl high			-1,89	0,02			-0,72	0,02			-0,09	0,85			-0,13	0,32			-0,34	0,57			-0,77	0,00
Empl h-med			-1,85	0,02			-0,54	0,08			0,31	0,57			-0,18	0,17			0,45	0,44			-0,51	0,01
Empl l-med			-1,47	0,07			-0,39	0,28			-0,50	0,49			-0,22	0,13			1,45	0,05			-0,49	0,02
Empl low			-1,13	0,17			-0,71	0,04			0,43	0,57			-0,16	0,27			0,32	0,56			-0,67	0,00
In education			-0,68	0,44			-0,22	0,60			-0,22	0,61			0,36	0,05			0,75	0,31			-0,23	0,32
Retired			-1,12	0,17			1,16	0,03			-0,23	0,56			0,32	0,03			0,98	0,12			0,28	0,21
Housewife			-2,22	0,02			0,30	0,33			-0,07	0,85			-0,02	0,90			1,61	0,01			-0,09	0,69
Other			-2,22	0,02			0,43	0,22			-0,90	0,04			-0,11	0,90			0,71	0,31			-1,01	0,00
Migrant – yes			-0,37	0,21			-0,25	0,07			0,03	0,88			-0,03	0,60					-0,83	0,04		0,33
Constant	2,76	0,00	4,70	0,00	2,87	0,00	4,94	0,00	2,69	0,00	3,58	0,00	1,27	0,00	2,36	0,00	4,39	0,00	4,41	0,00	2,78	0,00	3,71	0,00
Cox&Snell R ²	0,008		0,021		0,002		0,017		0,006		0,017		0,022		0,050		0,011		0,020		0,006		0,023	
Nagelkerke R ²	0,021		0,054		0,005		0,049		0,015		0,039		0,032		0,073		0,070		0,125		0,015		0,058	

Source: ECHP, wave 7; 2nd st of 2nd = 2nd stage of the 2nd level of education; D/S/W cpl = Divorced/Separated/Widowed living in couple; D/S/W aln = Divorced/Separated/Widowed living in alone; Nev mar cpl – never married living in a couple; Empl h-med = Employed, higher-medium job status; Empl h-low = Employed, lower-medium job status. Reference categories: Poverty profile - (0,0,0), Education – lower than 2nd stage of the 2nd level of education; Marital Status – never married; Main activity – Unemployed. The effects significant at the 0,05 level are bolded.

Table A2. Coefficients of logistic regression models for contacts with friends/family/neighbours for different countries - continued

	GR				SP				PT				AUT				FIN				UK			
	Model 1		Model 2		Model 1		Model 2		Model 1		Model 2		Model 1		Model 2		Model 1		Model 2		Model 1		Model 2	
	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.
Pov profile																								
(1,1,1)	0,40	0,22	0,26	0,49	-0,66	0,01	-0,28	0,31	0,21	0,15	0,17	0,30	-1,35	0,00	-1,31	0,00	-0,35	0,37	-0,76	0,07	-0,26	0,54	-0,80	0,07
(1,1,0)	-0,26	0,57	-0,50	0,29	-0,40	0,22	-0,21	0,55	0,44	0,27	0,33	0,43	-1,33	0,00	-1,28	0,00	-1,16	0,00	-1,58	0,00	-0,05	0,91	-0,40	0,32
(1,0,1)	0,37	0,57	0,07	0,92	0,19	0,74	0,52	0,37	0,25	0,31	0,13	0,60	-0,46	0,09	-0,36	0,21	0,44	0,26	0,10	0,82	0,07	0,83	-0,37	0,27
(1,0,0)	-0,31	0,55	-0,72	0,17	-0,47	0,08	-0,46	0,10	0,50	0,06	0,47	0,08	-0,48	0,04	-0,58	0,02	-0,56	0,07	-0,73	0,02	0,12	0,56	-0,21	0,33
(0,1,1)	-0,40	0,07	-0,51	0,05	-0,72	0,00	-0,23	0,34	0,47	0,00	0,38	0,02	-1,50	0,00	-1,41	0,00	-1,27	0,00	-1,51	0,00	-0,54	0,06	-0,94	0,00
(0,1,0)	-0,23	0,36	-0,41	0,12	-0,36	0,11	-0,27	0,24	0,21	0,16	0,13	0,39	-2,50	0,00	-2,61	0,00	-0,66	0,01	-0,90	0,00	-0,12	0,62	-0,25	0,31
(0,0,1)	0,43	0,23	0,38	0,30	-0,60	0,00	-0,30	0,19	0,47	0,00	0,37	0,02	-0,50	0,00	-0,41	0,01	-0,70	0,00	-0,83	0,00	0,00	1,00	-0,30	0,15
Age			0,00	0,94			-0,02	0,01			0,00	0,60			-0,02	0,00			-0,03	0,00			-0,01	0,04
Sex - Woman			-0,14	0,46			0,27	0,09			0,37	0,00			0,25	0,03			0,29	0,04			0,13	0,26
Education				0,24				0,32				0,12				0,01				0,34				0,00
3 rd level			-0,41	0,19			0,18	0,46			-0,30	0,09			-0,44	0,06			-0,30	0,14			-0,45	0,00
2 nd st of 2 nd			-0,40	0,11			-0,20	0,35			-0,23	0,11			0,19	0,11			-0,12	0,48			-0,20	0,30
Bad health			-1,28	0,00			-1,15	0,00			-0,39	0,00			-0,69	0,00			-0,27	0,12			-0,12	0,57
Marit status				0,07				0,00				0,56				0,00				0,37				0,20
Married			0,63	0,01			1,02	0,00			-0,04	0,78			0,52	0,00			-0,18	0,39			-0,30	0,08
D/S/W cpl			17,72	1,00			0,41	0,72			-0,52	0,26			0,02	0,97			-0,15	0,75			-0,07	0,84
D/S/W aln			0,15	0,68			0,34	0,18			-0,15	0,46			0,42	0,03			0,17	0,52			0,01	0,98
Nev mar cpl			17,28	1,00			2,11	0,17			0,47	0,30			-0,22	0,37			-0,38	0,18			-0,01	0,97
Main activity				0,00				0,00				0,01				0,00				0,01				0,00
Empl high			-1,12	0,02			-0,32	0,33			-0,75	0,02			-1,23	0,00			-1,01	0,01			-0,36	0,33
Empl h-med			0,03	0,95			0,20	0,57			-0,62	0,05			-1,07	0,01			-1,03	0,01			-0,19	0,61
Empl l-med			0,06	0,92			0,19	0,57			-0,17	0,60			-1,09	0,01			-0,53	0,21			-0,04	0,92
Empl low			-0,07	0,91			0,54	0,15			-0,55	0,08			-0,98	0,03			-1,03	0,01			-0,03	0,95
In education			0,40	0,52			0,64	0,09			-0,57	0,11			-1,03	0,03			-0,84	0,08			-0,66	0,17
Retired			-0,13	0,81			0,55	0,14			-0,31	0,35			-0,41	0,36			-0,13	0,75			0,53	0,18
Housewife			-0,02	0,97			0,96	0,01			-0,69	0,04			0,00	1,00			-0,81	0,17			0,07	0,87
Other			-1,12	0,04			-0,33	0,32			-0,78	0,03			-1,91	0,00			-1,35	0,06			0,79	0,10
Migrant – yes			0,03	0,92			-0,51	0,18			0,41	0,05			0,42	0,04			0,45	0,23			-0,39	0,00
Constant	4,17	0,00	4,64	0,00	4,17	0,00	4,13	0,00	2,71	0,00	3,32	0,00	2,79	0,00	4,17	0,00	3,22	0,00	5,48	0,00	2,98	0,00	4,03	0,00
Cox&Snell R ²	0,001		0,010		0,002		0,015		0,002		0,008		0,056		0,077		0,009		0,018				0,010	
Nagelkerke R ²	0,008		0,069		0,010		0,087		0,006		0,023		0,121		0,166		0,026		0,056				0,032	

Source: ECHP, wave 7; 2nd st of 2nd = 2nd stage of the 2nd level of education; D/S/W cpl = Divorced/Separated/Widowed living in couple; D/S/W aln = Divorced/Separated/Widowed living in alone; Nev mar cpl – never married living in a couple; Empl h-med = Employed, higher-medium job status; Empl h-low = Employed, lower-medium job status. Reference categories: Poverty profile - (0,0,0), Education – lower than 2nd stage of the 2nd level of education; Marital Status – never married; Main activity – Unemployed. The effects significant at the 0,05 level are bolded.

Table A3. Coefficients of OLS regression models for the satisfaction index for different countries

	DK				NL				BL				FR				IRL				IT			
	Model 1		Model 2		Model 1		Model 2		Model 1		Model 2		Model 1		Model 2		Model 1		Model 2		Model 1		Model 2	
	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.
Pov profile																								
(1,1,1)	-0,09	0,00	-0,12	0,00	-0,13	0,00	-0,11	0,00	-0,17	0,00	-0,17	0,00	-0,20	0,00	-0,18	0,00	-0,20	0,00	-0,18	0,00	-0,26	0,00	-0,21	0,00
(1,1,0)	-0,08	0,00	-0,06	0,00	-0,11	0,00	-0,09	0,00	-0,19	0,00	-0,16	0,00	-0,17	0,00	-0,14	0,00	-0,06	0,00	-0,05	0,00	-0,20	0,00	-0,16	0,00
(1,0,1)	0,06	0,00	-0,04	0,02	-0,06	0,00	-0,05	0,00	0,02	0,26	-0,02	0,33	-0,07	0,00	-0,10	0,00	-0,04	0,01	-0,12	0,00	-0,04	0,00	-0,03	0,00
(1,0,0)	-0,04	0,02	-0,08	0,00	-0,04	0,00	-0,03	0,01	-0,04	0,05	-0,04	0,05	-0,09	0,00	-0,08	0,00	-0,03	0,05	-0,04	0,03	-0,10	0,00	-0,08	0,00
(0,1,1)	-0,08	0,00	-0,12	0,00	-0,13	0,00	-0,13	0,00	-0,10	0,00	-0,08	0,00	-0,10	0,00	-0,09	0,00	-0,06	0,00	-0,05	0,00	-0,17	0,00	-0,15	0,00
(0,1,0)	-0,11	0,00	-0,09	0,00	-0,09	0,00	-0,08	0,00	-0,14	0,00	-0,12	0,00	-0,17	0,00	-0,13	0,00	-0,10	0,00	-0,08	0,00	-0,15	0,00	-0,13	0,00
(0,0,1)	0,09	0,00	-0,02	0,19	0,08	0,00	0,01	0,25	0,01	0,76	-0,06	0,01	0,00	0,74	-0,04	0,00	-0,06	0,00	-0,09	0,00	-0,01	0,29	-0,02	0,01
Age			0,32	0,00			0,19	0,00			0,26	0,00			0,10	0,00			0,29	0,00			0,12	0,00
Sex - Woman			0,03	0,07			0,01	0,27			-0,03	0,23			0,00	0,65			-0,01	0,57			-0,03	0,00
Education																								
3 rd level			-0,05	0,01			-0,01	0,34			0,02	0,44			0,04	0,00			0,02	0,34			0,06	0,00
2 nd st of 2 nd			-0,02	0,34			0,00	0,76			0,03	0,17			0,04	0,00			-0,02	0,29			0,05	0,00
Bad health			-0,13	0,00			-0,17	0,00			-0,10	0,00			-0,24	0,00			-0,07	0,00			-0,13	0,00
Marit status																								
Married			0,01	0,60			0,03	0,10			-0,07	0,07			0,00	0,93			-0,06	0,01			-0,03	0,01
D/S/W cpl			-0,05	0,00			0,00	0,81			-0,03	0,11			-0,01	0,26			-0,01	0,44			-0,01	0,29
D/S/W aln			-0,05	0,02			-0,07	0,00			-0,10	0,00			-0,04	0,00			-0,05	0,04			-0,06	0,00
Nev mar cpl			-0,03	0,07			-0,01	0,65			-0,03	0,11			-0,02	0,03			0,00	0,85			0,01	0,45
Main activity																								
Empl high			0,16	0,00			0,08	0,00			0,09	0,00			0,20	0,00			0,26	0,00			0,17	0,00
Empl h-med			0,09	0,01			0,06	0,00			0,09	0,00			0,15	0,00			0,31	0,00			0,16	0,00
Empl l-med			0,11	0,00			0,05	0,00			0,03	0,21			0,14	0,00			0,18	0,00			0,11	0,00
Empl low			0,04	0,14			0,06	0,00			0,06	0,01			0,13	0,00			0,24	0,00			0,08	0,00
In education			0,07	0,01			0,07	0,00			0,17	0,00			0,18	0,00			0,13	0,00			0,14	0,00
Retired			0,31	0,00			0,09	0,00			0,23	0,00			0,43	0,00			0,22	0,00			0,26	0,00
Housewife			0,05	0,00			0,17	0,00			0,21	0,00			0,20	0,00			0,32	0,00			0,15	0,00
Other			0,01	0,56			0,14	0,00			0,00	0,86			0,00	0,94			0,06	0,00			0,04	0,00
Migrant – yes			0,02	0,12			-0,05	0,00			0,00	0,97			-0,04	0,00			-0,02	0,17			0,00	0,82
R ²		0,048		0,253		0,066		0,163		0,089		0,169		0,106		0,235		0,054		0,164		0,127		0,180
Adjusted R ²		0,046		0,247		0,065		0,161		0,086		0,160		0,105		0,233		0,052		0,158		0,126		0,178

Source: ECHP, wave 7 (author's own calculations). 2nd st of 2nd = 2nd stage of the 2nd level of education; D/S/W cpl = Divorced/Separated/Widowed living in couple; D/S/W aln = Divorced/Separated/Widowed living in alone; Nev mar cpl – never married living in a couple; Empl h-med = Employed, higher-medium job status; Empl h-low = Employed, lower-medium job status. The effects significant at the 0,05 level are bolded.

Table A3. Coefficients of OLS regression models for the satisfaction index for different countries – continued

	GR				SP				PT				AUT				FIN				UK			
	Model 1		Model 2		Model 1		Model 2		Model 1		Model 2		Model 1		Model 2		Model 1		Model 2		Model 1		Model 2	
	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.
Pov profile																								
(1,1,1)	-0,33	0,00	-0,30	0,00	-0,21	0,00	-0,19	0,00	-0,30	0,00	-0,23	0,00	-0,13	0,00	-0,14	0,00	-0,11	0,00	-0,15	0,00	-0,14	0,00	-0,09	0,00
(1,1,0)	-0,15	0,00	-0,11	0,00	-0,17	0,00	-0,14	0,00	-0,06	0,00	-0,04	0,00	-0,09	0,00	-0,07	0,00	-0,11	0,00	-0,10	0,00	-0,14	0,00	-0,09	0,00
(1,0,1)	-0,08	0,00	-0,07	0,00	-0,03	0,00	-0,04	0,00	-0,09	0,00	-0,06	0,00	-0,03	0,01	-0,07	0,00	0,05	0,00	-0,04	0,01	-0,10	0,00	-0,04	0,00
(1,0,0)	-0,09	0,00	-0,07	0,00	-0,07	0,00	-0,06	0,00	-0,05	0,00	-0,04	0,00	-0,09	0,00	-0,10	0,00	-0,02	0,29	-0,02	0,22	-0,17	0,00	-0,09	0,00
(0,1,1)	-0,24	0,00	-0,21	0,00	-0,17	0,00	-0,15	0,00	-0,24	0,00	-0,18	0,00	-0,19	0,00	-0,19	0,00	-0,12	0,00	-0,13	0,00	-0,13	0,00	-0,09	0,00
(0,1,0)	-0,20	0,00	-0,15	0,00	-0,16	0,00	-0,12	0,00	-0,16	0,00	-0,12	0,00	-0,18	0,00	-0,18	0,00	-0,14	0,00	-0,10	0,00	-0,14	0,00	-0,12	0,00
(0,0,1)	-0,04	0,00	-0,04	0,00	-0,04	0,00	-0,06	0,00	-0,10	0,00	-0,06	0,00	0,03	0,02	-0,03	0,07	0,13	0,00	0,02	0,15	-0,09	0,00	-0,04	0,00
Age			0,22	0,00			0,15	0,00			0,08	0,00			0,10	0,00			0,25	0,00			0,08	0,00
Sex - Woman			-0,03	0,01			-0,03	0,02			-0,03	0,00			-0,03	0,03			0,03	0,02			0,05	0,00
Education																								
3 rd level			0,16	0,00			0,02	0,12			0,11	0,00			0,01	0,72			-0,01	0,69			0,01	0,24
2 nd st of 2 nd			0,12	0,00			0,01	0,55			0,03	0,00			-0,01	0,72			0,00	0,83			0,02	0,16
Bad health			-0,03	0,00			-0,14	0,00			-0,17	0,00			-0,14	0,00			-0,11	0,00			-0,12	0,00
Marit status																								
Married			-0,03	0,07			-0,02	0,22			-0,03	0,04			-0,04	0,05			-0,05	0,03			-0,06	0,00
D/S/W cpl			0,01	0,38			0,00	0,65			-0,03	0,00			-0,01	0,36			-0,01	0,40			-0,04	0,00
D/S/W aln			-0,02	0,10			-0,02	0,08			-0,05	0,00			-0,01	0,73			-0,04	0,02			-0,07	0,00
Nev mar cpl			0,00	0,75			-0,01	0,10			0,00	0,67			0,00	0,89			-0,02	0,27			-0,03	0,01
Main activity																								
Empl high			0,19	0,00			0,19	0,00			0,34	0,00			0,24	0,00			0,15	0,00			0,46	0,00
Empl h-med			0,15	0,00			0,13	0,00			0,32	0,00			0,31	0,00			0,13	0,00			0,43	0,00
Empl l-med			0,08	0,00			0,11	0,00			0,36	0,00			0,20	0,00			0,04	0,03			0,27	0,00
Empl low			0,09	0,00			0,08	0,00			0,29	0,00			0,15	0,00			0,08	0,00			0,30	0,00
In education			0,18	0,00			0,22	0,00			0,26	0,00			0,11	0,00			0,13	0,00			0,03	0,04
Retired			0,24	0,00			0,24	0,00			0,40	0,00			0,45	0,00			0,31	0,00			0,19	0,00
Housewife			0,20	0,00			0,20	0,00			0,25	0,00			0,33	0,00			0,07	0,00			0,00	0,84
Other			0,03	0,00			0,08	0,00			0,10	0,00			0,04	0,01			0,02	0,26			0,26	0,00
Migrant – yes			0,01	0,33			0,00	0,64			-0,03	0,00			-0,05	0,00			-0,01	0,53			-0,06	0,00
R ²		0,129		0,212		0,091		0,159		0,121		0,204		0,094		0,181		0,080		0,208		0,095		0,242
Adjusted R ²		0,129		0,210		0,090		0,157		0,120		0,202		0,093		0,177		0,079		0,204		0,094		0,239

Source: ECHP, wave 7 (author's own calculations). 2nd st of 2nd = 2nd stage of the 2nd level of education; D/S/W cpl = Divorced/Separated/Widowed living in couple; D/S/W aln = Divorced/Separated/Widowed living in alone; Nev mar cpl – never married living in a couple; Empl h-med = Employed, higher-medium job status; Empl h-low = Employed, lower-medium job status. The effects significant at the 0,05 level are bolded.

Table A4. Coefficients of logistic regression models for membership in a club/organisation – pooled data

	Model 1		Model 2		Model 3		Model 4		Model 5	
	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.
Pov profile										
(1,1,1)	-1,79	0,00	-1,37	0,00	-1,05	0,00	-0,80	0,01	-2,00	0,00
(1,1,0)	-1,19	0,00	-0,87	0,00	-0,61	0,00	-0,56	0,18	1,11	0,13
(1,0,1)	-0,70	0,00	-0,86	0,00	-0,65	0,00	-0,43	0,00	0,47	0,39
(1,0,0)	-0,44	0,00	-0,44	0,00	-0,31	0,00	0,27	0,13	1,01	0,02
(0,1,1)	-1,57	0,00	-1,13	0,00	-0,86	0,00	0,14	0,68	-0,39	0,48
(0,1,0)	-0,87	0,00	-0,52	0,00	-0,36	0,00	0,04	0,91	-0,18	0,70
(0,0,1)	-0,45	0,00	-0,48	0,00	-0,35	0,00	-0,14	0,19	-0,10	0,73
Country										
NL			-0,89	0,00	-0,37	0,00	-0,25	0,00	-0,31	0,00
BEL			-1,00	0,00	-0,88	0,00	-0,74	0,00	-0,76	0,00
FR			-1,55	0,00	-1,43	0,00	-1,38	0,00	-1,39	0,00
IRL			-0,77	0,00	-0,63	0,00	-0,51	0,00	-0,52	0,00
IT			-1,71	0,00	-1,61	0,00	-1,48	0,00	-1,49	0,00
GR			-2,73	0,00	-2,76	0,00	-2,63	0,00	-2,65	0,00
SP			-1,68	0,00	-1,58	0,00	-1,53	0,00	-1,54	0,00
PT			-1,81	0,00	-1,62	0,00	-1,46	0,00	-1,47	0,00
AUT			-0,76	0,00	-0,66	0,00	-0,56	0,00	-0,56	0,00
FIN			-0,38	0,00	-0,37	0,00	-0,35	0,00	-0,35	0,00
Age					0,03	0,00	0,03	0,00	0,04	0,00
Age squared					0,00	0,00	0,00	0,00	0,00	0,00
Sex - Woman					-0,53	0,00	-0,54	0,00	-0,53	0,00
Education										
3 rd level					0,53	0,00	0,54	0,00	0,51	0,00
2 nd st of 2 nd					0,31	0,00	0,31	0,00	0,30	0,00
Bad health					-0,37	0,00	-0,36	0,00	-0,41	0,00
Marit status										
Married					-0,07	0,02	-0,06	0,05	-0,08	0,03
D/S/W cpl					-0,33	0,00	-0,31	0,00	-0,34	0,00
D/S/W aln					-0,05	0,23	-0,05	0,24	-0,26	0,00
Nev mar cpl					-0,29	0,00	-0,28	0,00	-0,32	0,00
Main activity										
Paid empl high					0,49	0,00	0,48	0,00	0,51	0,00
Paid empl h-med					0,31	0,00	0,30	0,00	0,32	0,00
Paid empl l-med					0,23	0,00	0,23	0,00	0,18	0,01
Paid empl low					0,03	0,50	0,03	0,59	0,05	0,44
Self-empl high					0,34	0,00	0,32	0,00	0,43	0,00
Self-empl h-med					0,41	0,00	0,38	0,00	0,41	0,00
Self-empl l-med					0,39	0,00	0,39	0,00	0,48	0,00
Self-empl low					0,15	0,19	0,14	0,22	0,06	0,68
In education					0,58	0,00	0,57	0,00	0,63	0,00
Retired					0,44	0,00	0,40	0,00	0,48	0,00
Housewife					0,02	0,73	0,01	0,81	0,08	0,22
Other					-0,09	0,17	-0,08	0,23	-0,02	0,85
Migrant – yes					-0,25	0,00	-0,25	0,00	-0,18	0,00
Constant	-0,44	0,00	0,86	0,00	-0,22	0,02	-0,31	0,00	-0,40	0,00
Cox&Snell R ²	0,051		0,125		0,155		0,159		0,163	
Nagelkerke R ²	0,072		0,175		0,218		0,223		0,229	

Source: ECHP, wave 7; 2nd st of 2nd = 2nd stage of the 2nd level of education; D/S/W cpl = Divorced/Separated/Widowed living in couple; D/S/W aln = Divorced/Separated/Widowed living in alone; Nev mar cpl – never married living in a couple; Paid (self-) empl h-med = in paid (self-) employment , higher-medium job status; Paid (self-) empl h-low =In paid (self-) employment, lower-medium job status. Reference categories: Poverty profile - (0,0,0), Education – lower than 2nd stage of the 2nd level of education; Marital Status – never married; Main activity – Unemployed. The effects significant at the 0,05 level are bolded.

Table A5. Coefficients of logistic regression models for contacts with family/friends/neighbours – pooled data

	Model 1		Model 2		Model 3		Model 4		Model 5	
	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.
Pov profile										
(1,1,1)	-0,02	0,71	-0,58	0,00	-0,48	0,00	-1,36	0,00	-2,39	0,00
(1,1,0)	-0,39	0,00	-0,64	0,00	-0,76	0,00	0,03	0,97	-0,71	0,57
(1,0,1)	-0,17	0,01	-0,25	0,00	-0,18	0,02	0,43	0,25	-0,56	0,52
(1,0,0)	-0,15	0,01	-0,14	0,02	-0,23	0,00	0,44	0,29	0,16	0,83
(0,1,1)	0,00	0,97	-0,67	0,00	-0,52	0,00	-0,97	0,04	-2,91	0,00
(0,1,0)	-0,25	0,00	-0,69	0,00	-0,72	0,00	-0,18	0,76	-0,40	0,62
(0,0,1)	-0,20	0,00	-0,32	0,00	-0,21	0,00	-0,50	0,01	-0,91	0,08
Country										
NL			0,20	0,02	0,27	0,01	0,15	0,20	0,13	0,29
BEL			-0,16	0,13	-0,29	0,00	-0,31	0,03	-0,30	0,04
FR			-1,59	0,00	-1,61	0,00	-1,54	0,00	-1,54	0,00
IRL			1,37	0,00	1,31	0,00	1,54	0,00	1,53	0,00
IT			0,05	0,53	0,01	0,94	-0,06	0,52	-0,05	0,65
GR			1,75	0,00	1,68	0,00	1,33	0,00	1,36	0,00
SP			1,40	0,00	1,41	0,00	1,37	0,00	1,38	0,00
PT			0,43	0,00	0,45	0,00	-0,07	0,52	-0,05	0,64
AUT			-0,35	0,00	-0,42	0,00	-0,07	0,53	-0,06	0,62
FIN			0,35	0,00	0,38	0,00	0,51	0,00	0,54	0,00
UK			0,33	0,00	0,43	0,00	0,30	0,00	0,31	0,00
Age					-0,01	0,07	-0,01	0,04	-0,01	0,27
Age squared					0,00	0,19	0,00	0,30	0,00	0,20
Sex - Woman					0,14	0,00	0,14	0,00	0,12	0,00
Education										
3 rd level					-0,08	0,08	-0,08	0,08	-0,09	0,11
2 nd st of 2 nd					0,04	0,34	0,04	0,40	0,00	0,95
Bad health					-0,49	0,00	-0,52	0,00	-0,62	0,00
Marit status										
Married					0,13	0,01	0,12	0,01	0,12	0,07
D/S/W cpl					-0,04	0,72	-0,05	0,67	0,03	0,87
D/S/W aln					0,05	0,44	0,04	0,50	-0,12	0,23
Nev mar cpl					0,03	0,68	-0,01	0,90	-0,02	0,80
Main activity										
Paid empl high					-0,53	0,00	-0,55	0,00	-0,76	0,00
Paid empl h-med					-0,37	0,00	-0,41	0,00	-0,56	0,00
Paid empl l-med					-0,30	0,00	-0,34	0,00	-0,52	0,00
Paid empl low					-0,29	0,00	-0,34	0,00	-0,50	0,00
Self-empl high					-0,62	0,00	-0,60	0,00	-0,95	0,00
Self-empl h-med					-0,30	0,07	-0,29	0,07	-0,50	0,03
Self-empl l-med					-0,03	0,80	-0,08	0,46	-0,30	0,08
Self-empl low					-0,46	0,02	-0,48	0,01	-0,77	0,00
In education					0,05	0,64	0,00	1,00	-0,23	0,14
Retired					0,18	0,03	0,17	0,05	-0,02	0,91
Housewife					0,04	0,68	0,02	0,82	-0,19	0,17
Other					-0,48	0,00	-0,56	0,00	-0,51	0,01
Migrant – yes					-0,03	0,51	-0,02	0,60	-0,04	0,54
Constant	2,66	0,00	2,77	0,00	3,48	0,00	3,57	0,00	3,82	0,00
Cox&Snell R ²	0,001		0,055		0,061		0,066		0,070	
Nagelkerke R ²	0,002		0,138		0,154		0,167		0,176	

Source: ECHP, wave 7; 2nd st of 2nd = 2nd stage of the 2nd level of education; D/S/W cpl = Divorced/Separated/Widowed living in couple; D/S/W aln = Divorced/Separated/Widowed living in alone; Nev mar cpl – never married living in a couple; Paid (self-) empl h-med = in paid (self-) employment , higher-medium job status; Paid (self-) empl h-low =In paid (self-) employment, lower-medium job status. Reference categories: Poverty profile - (0,0,0), Education – lower than 2nd stage of the 2nd level of education; Marital Status – never married; Main activity – Unemployed. The effects significant at the 0,05 level are bolded.

Table A6. Coefficients of logistic regression models for satisfaction with life – pooled data

	Model 1		Model 2		Model 3		Model 4		Model 5	
	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.
Pov profile										
(1,1,1)	-0,25	0,00	-0,20	0,00	-0,18	0,00	-0,16	0,00	-0,15	0,00
(1,1,0)	-0,16	0,00	-0,13	0,00	-0,11	0,00	-0,11	0,00	-0,09	0,00
(1,0,1)	-0,03	0,00	-0,04	0,00	-0,05	0,00	0,01	0,23	0,05	0,01
(1,0,0)	-0,08	0,00	-0,07	0,00	-0,06	0,00	-0,04	0,00	-0,07	0,00
(0,1,1)	-0,21	0,00	-0,15	0,00	-0,14	0,00	-0,18	0,00	-0,21	0,00
(0,1,0)	-0,18	0,00	-0,14	0,00	-0,11	0,00	-0,17	0,00	-0,17	0,00
(0,0,1)	-0,01	0,00	-0,01	0,00	-0,03	0,00	0,04	0,00	0,00	0,89
Country										
NL			-0,04	0,00	0,00	0,73	0,00	0,87	0,00	0,88
BEL			-0,06	0,00	-0,06	0,00	-0,05	0,00	-0,05	0,00
FR			-0,16	0,00	-0,15	0,00	-0,13	0,00	-0,13	0,00
IRL			-0,08	0,00	-0,06	0,00	-0,05	0,00	-0,05	0,00
IT			-0,36	0,00	-0,34	0,00	-0,31	0,00	-0,31	0,00
GR			-0,29	0,00	-0,28	0,00	-0,26	0,00	-0,26	0,00
SP			-0,24	0,00	-0,21	0,00	-0,20	0,00	-0,20	0,00
PT			-0,34	0,00	-0,29	0,00	-0,29	0,00	-0,29	0,00
AUT			0,00	0,51	0,01	0,12	0,02	0,00	0,02	0,00
FIN			-0,06	0,00	-0,06	0,00	-0,07	0,00	-0,07	0,00
UK			-0,23	0,00	-0,23	0,00	-0,19	0,00	-0,19	0,00
Age					-0,07	0,00	-0,08	0,00	-0,07	0,02
Age squared					0,23	0,00	0,24	0,00	0,23	0,00
Sex - Woman					-0,01	0,01	-0,01	0,01	0,00	0,27
Education										
3 rd level					0,05	0,00	0,04	0,00	0,04	0,00
2 nd st of 2 nd					0,03	0,00	0,03	0,00	0,03	0,00
Bad health					-0,13	0,00	-0,13	0,00	-0,14	0,00
Marit status										
Married					-0,01	0,26	0,00	0,63	0,01	0,16
D/S/W cpl					-0,01	0,02	-0,01	0,06	0,00	0,53
D/S/W aln					-0,04	0,00	-0,04	0,00	-0,05	0,00
Nev mar cpl					-0,02	0,00	-0,02	0,00	-0,02	0,00
Main activity										
Paid empl high					0,19	0,00	0,18	0,00	0,17	0,00
Paid empl h-med					0,17	0,00	0,16	0,00	0,15	0,00
Paid empl l-med					0,11	0,00	0,11	0,00	0,10	0,00
Paid empl low					0,12	0,00	0,11	0,00	0,10	0,00
Self-empl high					0,07	0,00	0,07	0,00	0,06	0,00
Self-empl h-med					0,04	0,00	0,04	0,00	0,04	0,00
Self-empl l-med					0,06	0,00	0,05	0,00	0,05	0,00
Self-empl low					0,02	0,00	0,02	0,00	0,01	0,01
In education					0,13	0,00	0,12	0,00	0,12	0,00
Retired					0,23	0,00	0,22	0,00	0,21	0,00
Housewife					0,16	0,00	0,16	0,00	0,14	0,00
Other					0,08	0,00	0,07	0,00	0,09	0,00
Migrant – yes					-0,02	0,00	-0,02	0,00	-0,02	0,00
Cox&Snell R ²										
Nagelkerke R ²										

Source: ECHP, wave 7; 2nd st of 2nd = 2nd stage of the 2nd level of education; D/S/W cpl = Divorced/Separated/Widowed living in couple; D/S/W aln = Divorced/Separated/Widowed living in alone; Nev mar cpl – never married living in a couple; Paid (self-) empl h-med = in paid (self-) employment , higher-medium job status; Paid (self-) empl h-low =In paid (self-) employment, lower-medium job status. Reference categories: Poverty profile - (0,0,0), Education – lower than 2nd stage of the 2nd level of education; Marital Status – never married; Main activity – Unemployed. The effects significant at the 0,05 level are bolded.

Table A7. Significant interaction terms for models 4 and 5 for membership in clubs/organisations

Model 4			Model 5					
	B	Sig.		B	Sig.		B	Sig.
(1,0,1)*BEL	-0,71	0,00	(1,0,1)*BEL	-0,76	0,00	(1,1,1)*Retired	-0,57	0,02
(1,0,1)*IRL	-0,54	0,01	(1,0,1)*IRL	-0,68	0,00	(1,1,1)*Housewi	-0,71	0,01
(1,0,1)*IT	-0,92	0,00	(1,0,1)*IT	-0,99	0,00	(1,1,1)*Other	-0,79	0,02
(1,0,1)*GR	-1,57	0,00	(1,0,1)*GR	-1,55	0,00	(1,1,1)*Paid	0,72	0,04
(1,0,1)*PT	-0,88	0,00	(1,0,1)*PT	-1,01	0,00	(1,1,1)*Paid	0,60	0,03
(1,0,0)*NL	-0,48	0,02	(1,0,0)*BEL	-0,66	0,01	(1,1,1)*D/S/W	1,18	0,03
(1,0,0)*BEL	-0,68	0,00	(1,0,0)*FR	-0,80	0,00	(1,1,1)*Never	1,27	0,00
(1,0,0)*FR	-0,75	0,00	(1,0,0)*IRL	-0,59	0,01	(1,1,1)*age	0,04	0,05
(1,0,0)*IRL	-0,55	0,01	(1,0,0)*IT	-0,73	0,00	(1,1,0)*age	0,00	0,04
(1,0,0)*IT	-0,74	0,00	(1,0,0)*GR	-0,73	0,03	(1,1,0)*D/S/W	0,93	0,01
(1,0,0)*GR	-0,74	0,02	(1,0,0)*SP	-0,71	0,00	(1,1,0)*age	-0,08	0,01
(1,0,0)*SP	-0,66	0,00	(1,0,0)*PT	-0,85	0,00	(1,1,0)*educ 3rd	0,97	0,00
(1,0,0)*PT	-0,78	0,00	(0,1,1)*NL	-1,45	0,00	(1,1,0)*educ 2nd	0,33	0,05
(0,1,1)*NL	-1,40	0,00	(0,1,1)*FIN	-1,14	0,00	(1,1,0)*sex	-0,39	0,02
(0,1,1)*FIN	-1,00	0,01	(0,1,1)*BEL	-1,15	0,02	(1,0,1)*Paid	1,10	0,01
(0,1,1)*BEL	-1,09	0,02	(0,1,1)*IRL	-1,25	0,01	(1,0,1)*Self	1,85	0,01
(0,1,1)*IRL	-1,15	0,02	(0,1,1)*IT	-1,09	0,00	(1,0,1)*age	0,00	0,00
(0,1,1)*IT	-1,08	0,00	(0,1,1)*GR	-1,03	0,01	(1,0,1)*D/S/W	1,93	0,00
(0,1,1)*GR	-0,97	0,01	(0,1,1)*SP	-1,12	0,00	(1,0,1)*D/S/W	0,55	0,00
(0,1,1)*SP	-1,07	0,00	(0,1,1)*PT	-1,04	0,00	(1,0,1)*age	-0,05	0,01
(0,1,1)*PT	-0,93	0,01	(0,1,1)*AUT	-1,46	0,00	(1,0,1)*educ 2nd	-0,43	0,00
(0,1,1)*AUT	-1,23	0,00	(0,1,0)*AUT	-0,93	0,01	(1,0,0)*In	-0,45	0,03
(0,1,0)*NL	-0,70	0,05	(0,0,1)*IT	-0,26	0,04	(1,0,0)*mgr	-0,38	0,01
(0,1,0)*AUT	-0,85	0,02	(0,0,1)*GR	-0,44	0,01	(1,0,0)*educ 2nd	-0,23	0,03
(0,0,1)*NL	-0,33	0,01	(0,0,1)*PT	-0,81	0,00	(0,1,1)*Paid	0,70	0,01
(0,0,1)*IT	-0,27	0,04				(0,1,1)*Paid	0,82	0,00
(0,0,1)*GR	-0,48	0,01				(0,1,1)*Paid	0,54	0,03
(0,0,1)*PT	-0,85	0,00				(0,1,0)*Self-	-0,77	0,00
(0,0,1)*AUT	-0,26	0,05				(0,1,0)*Married	0,26	0,03
						(0,1,0)*D/S/W	0,46	0,01
						(0,1,0)*Sex	-0,21	0,01
						(0,0,1)*Self-	-0,59	0,03
						(0,0,1)*D/S/W	0,34	0,00
						(0,0,1)*Migrant	-0,31	0,00
						(0,0,1)*Sex	0,13	0,03

Table A8. Significant interaction terms for models 4 and 5 for contacts with family/friends/neighbours

Model 4			Model 5					
	B	Sig.		B	Sig.		B	Sig.
(1,1,1)*BEL	1.41	0.02	(1,1,1)*NL	1.71	0.01	(1,1,1)*Self	0.97	0.05
(1,1,1)*IT	0.81	0.05	(1,1,1)*FIN	1.18	0.04	(1,1,1)*Health	0.35	0.05
(1,1,1)*GR	1.86	0.00	(1,1,1)*BEL	1.47	0.01	(1,1,1)*D/S/W	0.73	0.01
(1,1,1)*PT	1.75	0.00	(1,1,1)*IRL	3.14	0.05	(1,1,1)*educ	0.64	0.03
(1,0,1)*FR	-0.94	0.02	(1,1,1)*IT	1.13	0.01	(1,1,0)*Self-	1.69	0.03
(1,0,1)*IRL	-1.45	0.00	(1,1,1)*GR	2.03	0.00	(1,1,0)*Health	0.50	0.05
(1,0,0)*FIN	-1.09	0.03	(1,1,1)*SP	1.18	0.01	(1,1,0)*educ	0.68	0.01
(1,0,0)*BEL	-1.11	0.02	(1,1,1)*PT	2.09	0.00	(1,0,1)*House	0.85	0.04
(1,0,0)*IRL	-1.48	0.01	(1,0,1)*FR	-0.91	0.03	(1,0,1)*Paid	1.24	0.04
(1,0,0)*SP	-0.98	0.05	(1,0,1)*IRL	-1.41	0.01	(1,0,1)*Sex	-0.41	0.02
(1,0,0)*AUT	-1.03	0.03	(1,0,0)*FIN	-1.25	0.02	(1,0,0)*Retire	0.87	0.02
(0,1,1)*IRL	-1.93	0.00	(1,0,0)*BEL	-1.31	0.01	(1,0,0)*Self-	1.26	0.00
(0,1,1)*PT	1.57	0.00	(1,0,0)*FR	-0.99	0.03	(1,0,0)*Health	0.43	0.04
(0,1,0)*AUT	-2.37	0.00	(1,0,0)*IRL	-1.63	0.00	(0,1,1)*Paid	0.86	0.05
(0,0,1)*NL	0.61	0.01	(1,0,0)*SP	-1.23	0.02	(0,1,1)*Paid	0.74	0.03
(0,0,1)*UK	0.53	0.05	(1,0,0)*AUT	-1.09	0.02	(0,1,1)*Self-	1.88	0.01
(0,0,1)*IT	0.63	0.00	(0,1,1)*IRL	-1.78	0.01	(0,1,1)*Marrie	0.39	0.05
(0,0,1)*GR	1.01	0.01	(0,1,1)*PT	1.56	0.00	(0,1,1)*D/S/W	0.69	0.00
(0,0,1)*PT	1.04	0.00	(0,1,0)*AUT	-2.45	0.00	(0,1,1)*Sex	0.43	0.00
			(0,0,1)*NL	0.55	0.04	(0,1,0)*D/S/W	-0.93	0.02
			(0,0,1)*UK	0.55	0.04	(0,0,1)*Paid	0.73	0.02
			(0,0,1)*IT	0.66	0.00			
			(0,0,1)*GR	1.03	0.01			
			(0,0,1)*PT	1.15	0.00			

Table A9. Significant interaction terms for models 4 and 5 for satisfaction with life

Model 4			Model 5					
Int	B	Sig.	Int term	B	Sig.	Int term	B	Sig.
(1,1,1)*UK	-0,02	0,00	(1,1,1)*UK	-0,02	0,00	(1,1,1)*Other	-0,01	0,00
(1,1,1)*FR	-0,01	0,04	(1,1,1)*FR	-0,01	0,03	(1,1,1)*Paid empl	0,01	0,03
(1,1,1)*IRL	-0,01	0,01	(1,1,1)*IRL	-0,02	0,00	(1,1,1)*Paid empl	-0,01	0,01
(1,1,1)*IT	-0,03	0,01	(1,1,1)*IT	-0,03	0,00	(1,1,1)*Health	0,02	0,00
(1,1,0)*PT	0,02	0,01	(1,1,0)*PT	0,02	0,00	(1,1,1)*D/S/W aln	0,01	0,04
(1,1,0)*BL	-0,01	0,01	(1,1,0)*BL	-0,01	0,04	(1,1,0)*Other	-0,01	0,05
(1,0,1)*GR	-0,03	0,00	(1,0,1)*GR	-0,03	0,00	(1,1,0)*educ 3rd	-0,01	0,02
(1,0,1)*SP	-0,02	0,00	(1,0,1)*SP	-0,02	0,00	(1,1,0)*Married	-0,03	0,00
(1,0,1)*PT	-0,03	0,00	(1,0,1)*PT	-0,03	0,00	(1,1,0)*D/S/W aln	-0,01	0,04
(1,0,1)*AUT	-0,01	0,00	(1,0,1)*AUT	-0,02	0,00	(1,0,1)*Other	-0,01	0,00
(1,0,1)*NL	-0,02	0,00	(1,0,1)*NL	-0,02	0,00	(1,0,1)*educ 2nd	-0,01	0,00
(1,0,1)*UK	-0,04	0,00	(1,0,1)*BL	-0,01	0,03	(1,0,1)*mgr	0,01	0,00
(1,0,1)*FR	-0,03	0,00	(1,0,1)*UK	-0,04	0,00	(1,0,0)*Paid empl	0,01	0,01
(1,0,1)*IRL	-0,02	0,00	(1,0,1)*FR	-0,04	0,00	(1,0,0)*Paid empl	0,01	0,03
(1,0,1)*IT	-0,02	0,00	(1,0,1)*IRL	-0,03	0,00	(1,0,0)*Self-empl	0,01	0,00
(1,0,0)*GR	-0,01	0,00	(1,0,1)*IT	-0,03	0,00	(1,0,0)*Self-empl	0,01	0,00
(1,0,0)*AUT	-0,01	0,03	(1,0,0)*GR	-0,01	0,00	(1,0,0)*mgr	-0,01	0,00
(1,0,0)*UK	-0,03	0,00	(1,0,0)*UK	-0,03	0,00	(0,1,1)*Paid empl	0,01	0,05
(1,0,0)*IT	-0,02	0,01	(1,0,0)*IT	-0,02	0,01	(0,1,1)*Other	-0,02	0,00
(0,1,0)*SP	0,03	0,05	(0,1,0)*PT	0,04	0,01	(0,1,1)*Paid empl	0,02	0,00
(0,1,0)*PT	0,04	0,00	(0,1,0)*FIN	0,01	0,05	(0,1,1)*Paid empl	0,01	0,00
(0,1,0)*FIN	0,02	0,04	(0,1,0)*NL	0,01	0,05	(0,1,1)*Self-empl	0,01	0,05
(0,1,0)*NL	0,02	0,03	(0,0,1)*GR	-0,03	0,00	(0,1,1)*Self empl	0,01	0,02
(0,0,1)*GR	-0,03	0,00	(0,0,1)*SP	-0,04	0,00	(0,1,1)*In educ	0,01	0,01
(0,0,1)*SP	-0,04	0,00	(0,0,1)*PT	-0,04	0,00	(0,1,1)*educ 2nd	0,01	0,05
(0,0,1)*PT	-0,04	0,00	(0,0,1)*AUT	-0,01	0,01	(0,1,1)*Health	0,02	0,00
(0,0,1)*AUT	-0,01	0,02	(0,0,1)*BL	-0,02	0,00	(0,1,0)*Paid empl	0,01	0,00
(0,0,1)*BL	-0,02	0,00	(0,0,1)*UK	-0,05	0,00	(0,1,0)*Retired	0,02	0,01
(0,0,1)*UK	-0,05	0,00	(0,0,1)*FR	-0,03	0,00	(0,1,0)*Other	-0,01	0,00
(0,0,1)*FR	-0,03	0,00	(0,0,1)*IRL	-0,02	0,00	(0,1,0)*Paid empl	0,01	0,02
(0,0,1)*IRL	-0,02	0,00	(0,0,1)*IT	-0,03	0,00	(0,1,0)*Paid empl	0,01	0,02
(0,0,1)*IT	-0,03	0,00				(0,1,0)*Self empl	0,01	0,03
						(0,1,0)*age	-0,05	0,04
						(0,1,0)*D/S/W aln	-0,01	0,01
						(0,1,0)*Sex	-0,02	0,00
						(0,0,1)*Retired	0,03	0,01
						(0,0,1)*Housewife	0,02	0,00
						(0,0,1)*Other	0,01	0,02
						(0,0,1)*Paid empl	0,01	0,04
						(0,0,1)*Paid empl	0,01	0,02
						(0,0,1)*Self-empl	0,01	0,04
						(0,0,1)*age	0,06	0,01
						(0,0,1)*age2	-0,06	0,02
						(0,0,1)*educ 2nd	0,01	0,04
						(0,0,1)*mgr	0,01	0,05