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EXCLUSION AND MATERIAL
DEPRIVATION AMONGST YOUTH IN SPAIN

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Abstract

This piece of work analyses the profile of poverty amongst youth in Spain from a multidimensional perspective. This approach entails the estimation of poverty risks, material deprivation indicators and an education exclusion indicator. Material deprivation indicators refer to deficiencies in dwelling's conditions, to arrears with payments and non-affordability of basic goods. The analysis is developed on a sample of young adults from the Spanish section of EU-SILC (European Union Survey on Living Conditions). The methodology consists on a set discrete dependent variable models and count data models. The risk of poverty, material deprivation and education exclusion are strongly influenced by household composition, education attainment and labour market status as well as disability and nationality.

Keywords: Youth; Poverty; Material Deprivation; Education Exclusion.

JEL classification: I31; I32

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1. Introduction

From a life-cycle perspective youth may be seen as a transition period between vulnerability in childhood and stability in adult life. If this transition takes place in a precarious way today's youth will not avoid tomorrow's children and elderly people poverty risks². Policies against youth poverty may therefore not only reduce social inequality but also prevent future child poverty and poverty among the aged. In order to properly design policies against future inequality and deprivation it is necessary to know more about the profile of those youth more affected by current poverty today.

Poverty amongst youth is also an interesting research issue because of its connection with problems at the entry in the labour market, school failure and early school leaving (Quintini *et al* (2007)). It is also related to difficult access to housing and durable goods (Navarro Ruiz, 2006). In Spain youths are strictly not more vulnerable to (monetary and material) poverty than the rest of demographic groups, though. According to the Spanish first waves of EU-SILC (European Union Survey on Living Conditions), during the period 2004-2006 the average poverty rate was 20 per

² Poverty will be here taken in a broad sense, meaning both monetary and non-monetary dimensions of poverty.

cent and the average severe poverty rate³ was 7,6. The relevant values for young people (16 to 34 year olds) were 16,1 and 6,9, respectively. These rates vary across different age groups (from 27,7 per cent among 16-19 year olds to 12,2 per cent amongst 30-34 year-olds. Therefore, average youth poverty rates are not higher than average poverty rates for the whole population, but certain groups are particularly vulnerable to poverty (see Aassve *et al* (2006) for an illustration of this fact in Mediterranean countries⁴).

The aim of this paper is to identify the most vulnerable groups of young people according to a set of focal variables⁵. We study three dimensions of poverty: monetary poverty, material deprivation and education exclusion. This multidimensional perspective of poverty allows us to explore common features in the three dimensions of poverty under study. The contribution to previous literature in Spain lies on the exhaustive array of variables used to identify poverty, namely, monetary income, material deprivation (split in three different indicators) and access to public services (education). In this sense we acknowledge the multidimensional nature of poverty and welfare. Unlike Toharia *et al* (2007) attention is paid to measure the influence of certain socio-demographic, family and employment features on these indexes through multivariate analysis techniques.

³ Monetary poverty is defined as the percentage of people under a given threshold based on the median of the equivalent per capita income distribution in the country at a given point in time. Relative poverty risk threshold is 60 per cent whereas severe poverty risk threshold is 40 per cent of the median.

⁴ In these countries, including Spain, monetary poverty rates among youth are not much higher than for the whole of the population, whereas in Scandinavian countries monetary youth poverty rates are much higher than the rest of the population in their own countries. This is related to the pattern of residential independence in Southern Europe, where youths delay their residential independence and usually leave their parents to create a new household, with their couples once they expect acceptable living conditions. Additionally, double-earning couples are becoming the rule in Southern Europe, which also means low poverty after emancipation from parents.

⁵ According to Sen (1992), a focal variable is the one researchers use to establish comparisons across groups and measuring inequality. Examples of focal variables are income, wealth, happiness, freedom, opportunities and rights. The strategy to measure inequality notably depends on the chosen focal variable.

Empirical evidence on youth poverty is relatively recent, specially compared to other demographic groups such as children, aged population or women. For instance according to Boraini and d'Ercole (2006), material deprivation tends to decrease with age in Europe, whereas in the US children are often the most deprived demographic group. Eurostat (2002) clearly reports that youth (16 to 25 year olds) are more vulnerable to material deprivation than other target groups. Empirical evidence on youth poverty points at three different factors that increase the risk of poverty among youths. Instability of wages is one of them. According to Cantó-Sánchez and Mercader-Prats (1999 and 2001) instability in income keeps youths in their parental homes, which they use as shelters against poverty. Other risk factors are the link between economic activity and the composition of the household (Ayllón (2007)), residential independence (Iacovou and Berthoud (2001), Aassve *et al* (2007) and Parisi (2008)) and, once this independence is reached, recent parenthood (Aassve *et al* (2005a)). In the present work we not only take all these set of risk factors into account but also stress the role of education, both as a determinant of poverty risks and as an indicator of individual capabilities (Sen, 1992). Since education enhances employability, reduces the incidence of low-quality jobs and favours the access to information as consumers (Robeyns, 2005), we may assert that it provides youth (and their families) with the capability to escape from poverty. This issue is even more relevant for youths, since most of the investment on education takes place at this age. We will use a pool of cross-section EU-SILC surveys in 2004, 2005 and 2006⁶. Unfortunately we find difficulties to follow a longitudinal, dynamic approach, like the one in Aassve *et al* (2005b), Fahmy (2007) and Mendola *et al* (2008) with the European Community Household Panel. In a similar fashion to those authors but in a cross-section context, we study the determinants of monetary poverty and education exclusion with the aid of *discrete*

⁶ The EU-SILC is a rotative panel. Every year one fourth of the sample is rotated out of the sample and replaced by new ones. The common sample is quite small due to attrition problems. This problem is very

dependent variables models (going beyond Pérez Camarero *et al* (2006)). For deprivation we deploy *zero-inflated counting models* that allow identify [no] deprivation first and deprivation intensity in a second set of coefficients. This way to identify relative deprivation risks entails interesting nuances: some features will determine initial deprivation risk only, but not deprivation intensity, whereas others will affect both risk and incidence of deprivation.

The contents of the article go as follows: after this introduction, Section 2 surveys the concept and measurement of poverty in different theoretical approaches; In Section 3 the data-base is presented together with the dependent variables (poverty and deprivation indicators) and the empirical strategy. Section 4 displays the main results of the multivariate models. The paper ends with a summary of results and a set of final remarks.

2. Different approaches to the study of poverty

There are three main approaches to poverty in theoretical and empirical economic literature, namely the *welfare approach*, the *capabilities approach* and the *social exclusion approach*. Each of them requires different measurement tools that entail different methodological strategies and may differ in social policy implications.

Welfare approach deploys income, consumption and (generally, material) welfare as quantifiable indicators of poverty. Focal variables to this approach are income (distribution) and consumption (Atkinson, 1970). From this approach policies addressed to reduce poverty should

accentuated in the case of young people.

enhance redistribution of income and access to resources, public goods and services (Wagle, 2002). The main question this approach addresses is: what factors give access to the necessary level of consumption and income to exit poverty? The answer to this question has two dimensions, an individual one and a social or institutional one, which are studied in the *capabilities approach* and the *social exclusion approach*, respectively.

The *capability approach* stresses an additional dimension that must be taken into account when measuring poverty: the concept of capabilities (Sen (1992, 1999), refers to the possibilities agents have to fully fulfil their expectations. According to Sen (1992) the capability is the ability to reach a given level of *functioning* or achievement. Having the capability to generate income (or to be employed, to be healthy, to nurture properly, to be educated) is more important than actually *having* those resources (health, food, education). Sen (1999) points that the capability determines both income and deprivation, since instrumental capabilities (which include education and health, although they are not only instrumental in nature) enhance the generation of necessary income to increase consumption. In this approach Sen takes income as one of the resources people have to live the life they want to live. The problem with the *capabilities approach* is the difficulty to measure capabilities and *functionings* to contrast its main hypotheses⁷.

The social exclusion approach points at both individual and institutional dimensions in the social exclusion process, which has economic, political⁸, civic and even cultural⁹ impact on

⁷ Haverman and Bershadker (2001) propose an indicator of the ability of households to capitalize their own physical and intellectual resources and, in this way, escaping poverty. Such indicator, still, lacks consistency with monetary poverty measures. An aggregate poverty indicator based on the capabilities approach is the PNUD (2000a, 2000b) Human Development Index (HDI), which includes human capital measured through education (literacy), health (infant mortality, life expectancy). It was actually proposed by Sen himself to the United Nations (Arnand and Sen (1997)).

⁸ It happens when certain groups are excluded from political participation.

youth (Waglé, 2002). For instance, from an economic viewpoint, institutions may generate social exclusion if they hamper access to economic activities to a given group in the population. Examples would be hindering participation in the labour market, in the financial market or entrepreneurship itself, among many others. Sen (2000) finds that main contribution of the social exclusion concept is the emphasis on the social connections and personal relations¹⁰. Following the same idea, Silver and Miller (2003) identify poverty with the result of income distribution and social exclusion derived of deterioration in social relations¹¹. In this approach, poverty consists on lack of participation, solidarity and access to resources. Finally, Laparra (2005) finds a whole array of interrelated exclusion processes: precarious working and living conditions, exclusion (from employment, from housing) and marginality (stigmatization, criminalization and special segregation).

Waglé (2002) urges to integrate the three approaches and to develop systematic/simultaneous analyses of a whole array of indicators related to income, access to goods, education, health and nutrition, participation in the labour market, political, civic and cultural participation. This set of indicators may be classified in two taxonomies: absolute versus relative and objective versus subjective. The latter are based on the levels of income, consumption and welfare individuals consider necessary not to be poor or on questions about to

⁹ Those who are excluded from social networks will suffer social and even economic disadvantages that will reinforce either risk to enter poverty or their persistence in such situation.

¹⁰ Social exclusion is a way of deprivation in itself (not having access to social networks, institutions and markets is a problem) and it might be, at the same time, a source of further problems and deprivation.

¹¹ It is difficult to operationalize due to its multidimensional both individual and social nature. Nevertheless, since EU social policies are targeting social exclusions, indicators are needed for it. Possible indicators are non-participation in civic life, family and social dysfunctions, health problems, lack of education and skills and exclusion from public services and from social networks, among others.

which extent their income may satisfy their needs¹². In developed countries, particularly in Europe, poverty refers to a given place in the distribution of income at a given point in time: poverty thresholds are defined by the current distribution of income. These indicators will contribute to give an idea of the size of the problem, and they are easily estimated and interpreted. Nevertheless, they are often criticised (Martínez and Ruiz-Huerta (1999) and Navarro Ruiz (2006)) by their volatility (particularly pronounced amongst youths): they measure (and mix) both transitory and permanent poverty. Consumption and housing quality indicators, on the contrary, are more related to permanent income. Income also may suffer from measurement problems since it is ill-reported for several groups of people (workers in the grey economy, self-employed, among others) whereas consumption and material deprivation is easier to measure for all kinds of people. Finally, income and material quality of life are highly correlated (Iceland and Baumanb (2007)): income is not the only available economic resource; in-kind transfers, savings and wealth should be also considered; Moreover, there are non-market goods and services (Bourguignon and Chakravarty (2003)). On top of that, equal access to income does not ensure the same levels of *functioning* or achievements (following the capabilities approach definition of *functioning*) as access to public services does.¹³.

All these problems suggest the need for a multidimensional approach to measure poverty, including both monetary and non-monetary variables. Multidimensional empirical strategies are quite common in research addressed at contrast the capabilities approach (Chiappero (2000) and Ayala and Navarro (2008)). Welfare in this approach is multidimensional in

¹² This is the predominant approach to the measurement of poverty in developing countries and in the US. The official poverty line is defined there from the cost of a given basic basket of consumer goods. This measurement strategy is not used in Europe.

nature (Bourguignon and Chakravarty (2003)) and *functionings* are indirectly measured via education and health indicators. Finally, none of the approaches used to measure poverty is free of value judgements. They are present when choosing the focal variable to measure (income, consumption, subjective wellbeing, education, health...) or when identifying the most relevant issues that will define wellbeing and deprivation; i.e., the weight we give to the lack of different commodities when measuring material deprivation is also subject to value judgements as well. Focal variables and the aggregation strategy being chosen, value judgements are also used when choosing the thresholds defining poverty in each indicator (Bibi (2005)).

This piece of research adopts an eclectic strategy: following the *welfare approach* we both estimate relative poverty rates and absolute material deprivation; Additionally, in an attempt to evaluate as well the *capabilities approach*, we focus on the main capability for youth: education, measured by its main *functioning*: education attainment. Since we may study neither social relations, behaviour and values, nor access to institutions and participation in public life, the *social exclusion approach* is not directly taken into account here. As far as social exclusion entails lack of access to resources such as education (Silver and Miller (2003)) we indirectly consider it as well, though.

3. The data-base and the empirical strategy

3.1. The data-base

¹³ For instance, someone with more education / knowledge / skills will be more able to transform income on a higher level of *functioning*.

The EU-SILC is aimed at the detailed description of income distribution, material living conditions and economic activity of households in Europe. This annual survey was first launched at 2004 and here we use the three first swaps. It is a rotation panel with a common sample core and new sub-samples that are replacing others to keep cross-section representativeness. From an initial overall sample of 89.887 observations (50.522 interviewees aged 16 and over), 22.522 observations (corresponding to 20.193 16-34 year-old interviewees with valid values for all the variables deployed in the multivariate analysis) have been selected. We here consider a quite wide age-group to properly address the late family emancipation pattern of Spanish youth (Garrido and Requena (1996)).

3.2. Poverty indicators

Poverty has been measured on the basis of equivalent household income during the year prior to the survey. Three issues must be stressed here: first, the observation unit will be the household, which means accepting the equal intra-household income distribution assumption; second, the target variable is only measured annually, and third, equivalent income has been computed with the OECD-modified equivalence scale. This implies accepting economies of scale in household consumption. Relative and severe poverty rates have been defined according to the most recent EU criteria: 60 and 40 percent of median equivalent household income respectively¹⁴.

¹⁴ As a consistency check, the whole multivariate analysis on monetary poverty has been repeated using the equivalence scale proposed by Cutler and Katz (1992). It is aimed at taking into account potential economies of scale in the household consumption and the different budget that must be allocated to children and adults. The expression for economies of scale is $E = (A + pK)^F$, $p, F \in [0, 1]$, where p is a constant that registers the cost of resources children need as a proportion to adults, and F is an indicator of economies of scale within the household. Three sets of values for p and F (0,5-0,5; 0,25-0,75; 0,75-0,25) have been tested and the profiles of monetary poverty do not vary from the ones based on OECD-modified equivalence scale. Only changes in the size of the coefficients for the number of children, couple and/or parents are found. This responds to the different weights children and adults are given in the Cutler and Katz's equivalence scales. Results are not shown but available on request.

Deprivation intensity may be analysed with different methods: the simplest one is the *counting* approach (Townsend (1979), Mack and Lansley (1985)) that merely consists in *counting* the number of dimensions in which people suffer deprivation. This implies accepting the assumption that all needs are equally important. Weighting schemes may contribute to overcome this assumption. Guio and Engsted Maquet (2006) point that these weights may be set on the basis of social assessment of what is desirable and even needed, but it is very difficult to gather such information¹⁵. An “objective” and indirect way to get these weights (Desai and Shah (1988)) would consist on giving higher weights to the rarest needs. This implies assuming that people avoid lacking the goods they consider to be more relevant. The *counting approach* and the *social welfare approach* (see Atkinson (2003) for a discussion on both approaches) are the two main approaches used to measure deprivation.

Another way to generate synthetic deprivation indicators is designing more or less complex welfare functions satisfying a given set of properties (the *axiomatic approach*). According to Bourguignon and Chakravarty (2003), this approach stems from Sen’s pioneering work (Sen, 1976). It contributes to the normative analysis of poverty but since the definition of properties is not value-neutral, it does not enhance consensus in the definition of poverty (see Bibi (2005) for a detailed description of the most common properties in the *axiomatic approach*).

¹⁵ Despite this difficulty to measure this nuance the Special Poverty and Exclusion Eurobarometer 279 in 2007 (European Commission (2007)) asked to EU citizens how relevant they thought having a given set of goods was to have a decent life in their countries. The set of affordable goods and services matched up with the one in EU-SILC questionnaire. As a consistency check we have redefined the weighted deprivation indexes. Weights for the *i-th* item are now the proportion of young people (split by age-group and gender) who consider this item to be very important to have a decent life in Spain. Results are not shown but they are pretty similar to the ones obtained with the “objective” set of weights and, of course, they are available upon request.

Alternative mechanisms to compute weighting via multivariate techniques are principal components analysis (Kamanou (2000)) and factor analysis (Callan, Nolan and Whelan (2001)). Additionally, latent variable models (Pérez-Mayo (2005), Ayala and Navarro (2008), Whelan and Maître (2005a, 2005b, 2007)) and *fuzzy sets* are becoming more and more popular in this strand of the literature (Chiappero (2000), Betti *et al* (2002)). The latter identify poverty and deprivation as a gradual phenomenon which intensity is not easily measurable through a single (lacking) attribute¹⁶.

The deprivation index used here adapts the one in Desai and Shah (1988) which has been already used to measure material deprivation in Spain amid other countries¹⁷. The deprivation index, $P_{d,h}$ is the weighted (normalised to 100) sum of the values the different deprivation indexed reach for every household, h :

$$P_{d,h} = \frac{\sum_i^n I_{i,h} p_i}{\sum_i^n p_i} * 100$$

where $I_{i,h}$ is a dummy variable taking value 1 when the household cannot afford the i -th good and value 0 otherwise. Additionally, p_i is the proportion of people that do not suffer deprivation in the i -th good or commodity. The value this index takes may be interpreted as the percentage of actual deprivation with relation to the maximum potential value, which should be

¹⁶ For an excellent explanation of the *fuzzyness* concept in empirical Economics, see Qizilbash (2004).

¹⁷ For the Spanish case, see Martínez and Ruiz Huerta (1999), García-Serrano *et al* (2001), Ayala (2006), and Ayllón *et al* (2007); The same strategy for other countries may be found in Tsakloglou and Papadopoulos (2002), Whelan *et al.* (2002), D'Ambrosio and Gradín (2003), Muffels and Fouarge (2004) and Förster (2005), among others.

obtained if the interviewee suffered deprivation on all the situations/indicators considered (Dessai and Shah (1998)).

The aggregation system deployed here does not intend to establish a relative deprivation threshold to delimit who is and who is not poor (unlike Muffels and Fouarge, (2004) Tsaklogou and Papadopoulos (2002), among others); following Guio and Engsted Maquet (2006), we take into account that needs and problems are not single measures of deprivation but they may be a sign of an underlying dimension.

The available items about material deprivation in EU-SILC have been aggregated in three dimensions: problems in the dwelling, shortages related to housing conditions, ability to afford certain expenses and a given set of arrears. The three dimensions are not combined: should we combine them all in a single synthetic indicator, we would lose transparency, clarity and homogeneity; it would gather too much heterogeneity and would be difficult to interpret.

The indicator of problems in the dwelling is computed from the following dummy variables: *not enough natural light in at least one room in the house; noise from neighbours or from outside (traffic, business, factories, etc); pollution and other environmental problems from factories or the traffic; crime, violence and vandalism in the neighbourhood, leaking roofs, damp¹⁸; and shortage of space¹⁹.*

¹⁸ Literally, leaking roof, damp walls/floors/foundation, or rot in window frames or floor.

¹⁹ We define lack of space as the situation when the number of people in the house is larger than the number of rooms.

The indicator labelled as “non-affordability” summarises the following items: *the household cannot afford a week of holidays away from home; the household cannot afford a meal of meat, chicken or fish (or the vegetarian equivalent) at least every two days; the household may not afford unexpected expenses and the household cannot afford having different durable goods: telephone, colour TV set, computer, washing machine and car.* Each non-afforded good is measured through a dummy variable that takes value 1 when the households cannot afford it and 0 when either they have it or they do not have it because they do not want to.

The indicator of arrears in payments during the last twelve months refers to mortgage or the rent of the dwelling, commodities (electricity, water, gas, etc) bills and differed payments and other credits (different from the mortgage).

Table 1 displays the percentage of youth whose households are affected by each type of deprivation or problem included in the deprivation index. The most common problems in the dwelling are noises, insecurity and dump; arrears in payments only affect about 4 per cent of households whereas around 40 per cent of youth live in households that cannot afford a week of holidays every year and one out of three youths live in households that may not attend unexpected expenses.

[Insert Table 1]

Last but not least we define an education indicator as a proxy of one of the instrumental capabilities defined by Sen (1999). According to Robeyns (2006) education is important in Sen's

capability approach for both instrumental and intrinsic reasons (the sheer utility from knowledge). As an instrumental capability, it may contribute to the expansion of other capabilities (Drèze and Sen (2002)). In the economic sphere, education enhances employability, labour stability and improve conditions to reach and process information necessary to take efficient economic and consumption decisions. The instrumental role of education in the economic sphere of life is the core idea of the Human Capital Theory, but the capability approach takes also into account the instrumental nature of education beyond the strictly economic sphere: it improves communication skills and freedom of thought, among others. In identifying education as a focal variable in this piece of research and as a proxy for a core capability we treat it as complement to income indicators.

We define education exclusion as not being registered in the formal education system and having low education attainment (compulsory secondary education, ESO, *Educación Secundaria Obligatoria*). The severe education exclusion indicator takes value 1 when the youth does not even comply with compulsory secondary education and is not enrolled in the education system at the moment of the interview.

3.3. The econometric strategy

The deprivation indicators register value 0 when a youth lives in a household not affected by any of the items included in the synthetic indicator. This is the case with 42 per cent of youth as regards problems in the dwelling and 92 per cent of youths as regards arrears with payments. In the case of material deprivation and non-affordability 47 per cent of youths register

value 0 in this indicator. Moreover, inasmuch these indicators are mere lineal combinations of dummy variables indicating problems or needs, weighted by percentages that are constant across all interviewees in a single year, the total number of values in the resulting variables is certainly limited. This particular distribution of dependent variables invites to consider *count data* models in our econometric strategy. We apply a negative *zero-inflated negative binomial* (ZINB) model. It may explicitly estimate cases with value 0 that refer to non deprivation assuming non deprivation may be generated by different processes to the strictly positive deprivation values (Long and Freese (2006)). The ZINB model implies therefore accepting the assumption that certain individuals will have a given probability of zero deprivation, being fully protected against deprivation: certain observable features prevent individuals from suffering any of the problems registered with our synthetic indicators. Values over 0 are identified via a latent dummy variable, which is estimated through a binomial logit. This latent dummy variable will be here identified as “potential deprivation risk²⁰” and it is estimated in the first of the two equations of the model (so called *inflation equation* in the ZINB terminology). The second equation of the model estimates a negative binomial function where 0 is just one of the possible values in the distribution. It is estimated for those with a positive potential deprivation risk. This second equation will be labelled as “deprivation incidence”. The specification of both models may be different if the theoretical model behind the estimation predicts a different set of explanatory variables to define potential risks of deprivation and the incidence of deprivation itself. Since we do not find any relevant reason not to consider the same set of explanatory variables for potential risk and effective incidence of deprivation, will estimate both equations with the same specification²¹.

²⁰ Actually, it should be labelled as *non-deprivation risk*, since this *logit* model estimates the probability that deprivation indicators register value 0.

²¹ We do not work on social exclusion hypotheses since we think that no social group is protected “by definition” of any type of deprivation in Spain.

The rest of the indicators (monetary poverty and education exclusion), being dummy variables, are estimated through *binomial logit* models. Both count data models and logit have been estimated taking into account that about 10 per cent of the interviewees are interviewed twice and (only a very small proportion) even thrice. Standard errors have been corrected with the Huber/White/Sandwich estimator to allow for potential correlation between observations corresponding to the same interviewee.

3.4. Poverty rates, material deprivation and education exclusion

Table 2 displays the average values of the monetary poverty rates, education exclusion and material deprivation split by personal, household and employment-related characteristics.

[Insert Table 2]

According to the information in Table 2, the relative poverty risk is lower the higher the education attainment is, and is higher amongst those affected by some sort of disability. It is particularly high among youth living with a single parent or living with both couple and parent(s) or parent(s) in law. It is significantly smaller for youths living in couple. Poverty risk increases from the first child in the household and those who spent at least 6 months in unemployment or inactivity during the previous year face a higher poverty risk. Youth living in small towns and villages register higher monetary poverty risk and non EU citizens are much more affected by this problem than Spanish and EU citizens. Youths who still live with their parents also suffer a somehow higher monetary poverty risk. As for severe poverty risk (households under 40 percent of the median *per capita* equivalent income) the profile of the risk distribution is parallel to the one

already explained, and the incidence is, in average, 9 percentage points lower than the standard poverty risk.

Education exclusion is much more common among men than among women. It particularly affects disabled and non-EU citizens; it worryingly increases with the number of children. Those who spent more than half of the prior year in unemployment or inactivity faced a higher education exclusion risk than the rest. Educational exclusion is more spread in small cities and villages and it is correlated with income, particularly in the case of severe (not even compulsory education attainment) education exclusion.

Problems with the dwelling are more relevant among disabled youths, those independently or in couple and those living in big cities/towns. Non EU-citizens face more problems in their dwellings as well, and only households with equivalent *per capita* income over 150 per cent of the median are significantly protected against this kind of problems. Arrears in payments are not common, and their incidence is higher amongst those who living neither in couple nor with parents. Arrears are also more common amongst those unemployed during the previous year and non-EU citizens. As expected, this type of problem is negatively correlated with income. Non-affordability is negatively correlated with educational attainment and income.

Finally, consistency between monetary poverty and multidimensional indicators may be observed when the average values of the deprivation and exclusion indicators are displayed for different relative income levels. Table 2 shows a non lineal link between monetary poverty and material deprivation. It means that income may not be the only indicator to identify low material

quality of life and low resources (Ayllón *et al*, 2007). Spearman correlation coefficients between *per capita* equivalent household income in the reference year and the different material deprivation indicators corroborate this idea. This correlation is far from being perfect.

4. Results from the multivariate models

The main results from the econometric models on monetary poverty, material deprivation and education exclusion will be presented here. As explained in Section 3, monetary poverty (severe) risks and education (severe) exclusion have been estimated via binomial *logit* models, whereas material deprivation indexes have been estimated via count data (ZINB) models. The latter generate two sets of coefficients for every deprivation index: the first one refers to the “inflation equation” and estimates the probability of registering zero deprivation. The second one corresponds to the “deprivation incidence”, and it is only estimated for those registering a positive risk of deprivation.

Table 3A shows estimations of poverty risks and education exclusion; Table 3B displays the sets of coefficients corresponding to the determinants of material deprivation risk and incidence. Explanatory variables in all models include socio-demographic variables (gender, education, nationality, region of residence, population density), household composition and relation with the labour market. In all cases results are displayed by means of *relative risk ratios*. Additionally, in material deprivation models and in education exclusion models income has been included split in eight categories in order to capture the possible non-linear response of education exclusion and material deprivation to income.

Previous evidence and our own estimations show the relevance of household composition on poverty risks. We have therefore estimated all the models for two sub-samples: youths living with their parent(s) and residentially independent youths²². Results from the two sets of estimations are displayed in tables 3A and 3B. In broad terms we may say that the profiles of poverty risk within both sub-samples are closer than initially expected. We think that the similarities between both profiles of poverty and deprivation risks are related to the residential emancipation strategy amongst most Spanish youths: they tend to delay the decision to leave parental home until they feel they no longer would face a higher poverty and deprivation risk than with their parents²³ and would enjoy a similar material quality of life.

[Insert Tables 3A and 3B]

Table 3A shows that men register higher risks of both poverty than women only when living independently from their parents. At the same time, they face higher education exclusion regardless they live with their parents or not. Age contributes to a reduction in education exclusion only among those who live with their parents. And it does not have any influence in poverty risks because, among other things, it is correlated with education and, particularly, with the type of household, which are controlled for in the models. Education is significantly related to lower poverty risks among emancipated and non-emancipated youths. Education exclusion decreases with age and increases with disability, but (once the complete set of observable characteristics is controlled for) none of them are relevant to explain monetary poverty risks.

²² Unfortunately there is no information on intergenerational income transfers between households. They might contribute to find residentially independent but economically dependent youths. Residential independence will be therefore used as a *proxy* for economic independence.

Household composition does have an influence on both indicators, but with different nuances: those living alone, with a single parent or with both couple and parent(s) face a higher risk of monetary poverty compared to the reference category. As for education exclusion, youths face a higher risk whenever they live with a single parent, and those living alone are more educated than the rest.

Having children (and their number) are linked to a higher risk of monetary poverty and education exclusion, although the link is stronger for the former indicator than for the latter. This result is consistent with Aassve *et al* (2005a) and Ayllón (2007) and are more intensive for those who still live with their parents than amongst independent youth. Youths living in mid and low population density areas are more affected by poverty only if living with their parents. Otherwise the areas do not mean any difference. As regards education exclusion risks, the link between this indicator and age and disability is stronger for those who live with their parents, but the link between economic inactivity and education exclusion is more intense for independent youths. Students and part-time workers face lower education exclusion than full-time workers, particularly if living in the parental home.

All youths non working full-time in the previous year face higher monetary poverty risks; the role of labour market income of young members of the household in contributing the whole household to escape poverty is well-known in empirical literature (Cantó-Sánchez and Mercader-Prats (1999, 2001)). Interestingly enough, non-EU citizens are more affected by monetary poverty risk but less affected by education exclusion risks than Spanish-born. This trend will also arise in

²³ This is one of the conclusions in Aassve *et al* (2007) when comparing the lower relative impact of residential independence on poverty and deprivation on youths in Mediterranean countries compared to other European

the material deprivation indexes and may indicate poor integration of many immigrants, who register lower income and poorer quality of life even when they do have a higher human capital endowment.

Finally, household income is significantly related to education exclusion, particularly for those still living with their parents: youths living in households with income over 50 per cent of the median are less affected by education exclusion²⁴. This result suggests poor equity of opportunities in the education system inasmuch education attainment of youths is negatively correlated with income.

Table 3B shows the results of ZINB estimations on the three measures of material deprivation. No relevant differences arise between men and women and among age groups. Only those in the highest income group are protected against the risk of having this kind of problems if they live with their parents. If they do not live independently, protection against arrears and economic insufficiency is effective from 70 per cent of the median income. As for material deprivation (non-affordability of certain durables and services) the relevant threshold for independent youths to face a lower incidence is 60 per cent. Problems with the dwelling are only less likely and less intensive when income is over 150 per cent of the median. Income has therefore a more relevant role in protecting against all types of material deprivation for those living with their parents, but when they have children there is a relevant increase in the risk of all types

countries once the possible endogeneity of the leaving home decision is taken into account.

²⁴ As a consistency check we have tested the complementary (and not substitutive) nature of education and income: when estimating material deprivation models with and without controls for household income results essentially do not vary. This points at income being complementary and not substitute for education. Education does respond to changes in household income, although the risk of education exclusion is only lower for those living in households with at an above 70 per cent of the median per capita equivalent income. Results are available upon request.

of deprivation. Young students living with their parents are the most protected group against all the risks and face a lower the intensity of housing problems and “non-affordability”.

Educated youths are protected against the risk of having arrears and “non-affordability”, but they are not exempt from the risk of experiencing problems in their dwellings. Those living alone or in couple register a lower risk of problems with dwelling than those living with their parents. Those living in couple seem to experience a lower risk of “non-affordability”, but more risk of arrears. Youths living with a single parent are more exposed to the risk and intensity of material deprivation. Youths with at least two children experience a (considerably) higher risk of the three types of material deprivation if they do not live in the parental home, and poor living conditions for young parents are more intensive when living with their own parents as well.

Youth living in small towns or villages register a lower risk and incidence of both problems in dwellings regardless they live with their parents or not. Those living independently in small areas face lower intensity in arrears and affordability than if living in highly populated areas. And non EU-citizens and Spanish citizens born abroad are less protected than Spanish-born against the risk of problems in the dwelling, arrears and “non-affordability” (and, as a matter of fact, they suffer more intensive “non-affordability” than Spanish-born) and experience more intensive non-affordability problems regardless they live still at the parent’s or not.

5. Conclusions

In this piece of research we have studied the risk of poverty and deprivation amongst Spanish-resident youth in three different dimensions: monetary poverty, education exclusion and material deprivation. The latter gathers problems with the dwelling, arrears in payments and “non-affordability” of a given set of durable goods and certain expenses. This multidimensional approach intends to detect the most vulnerable groups of youth from an economic and social point of view based on an exhaustive set of focal variables, and check to which extent economic and social vulnerability follows similar profiles regardless the way we measure them. This has interesting and relevant policy implications: if monetary poverty has a parallel profile to other types of poverty, then income re-distribution policies, income transfers (monetary and in-kind) and incentives to employment stability should contribute to tackle all types of poverty at once. Otherwise welfare policies should differ across vulnerable groups of young people, depending on the social problem policymakers would want to prioritize.

Education plays two roles, as a resource to increase income and improve living conditions and as an achievement in itself. Should low educated follow the same profile as those in poor households and under bad living conditions, income redistributing measures would indirectly contribute as well to enhance investments in education. But when vulnerability in education follows a different profile, policies addressed to keep youths in the education system should consist on something else than monetary and in-kind income transfers.

The different poverty and living conditions profiles have been described using a multivariate analysis where socio-demographic, education attainment, income, household characteristics, disability, nationality, place of residence and link with economic activity have been taken as explanatory factors. From these models we may point at a higher risk of both monetary poverty and education exclusion for men, whereas material living conditions are similar for both men and women. Age is not relevant any longer as regards poverty risks, once the rest of observable heterogeneity is controlled for.

The risk of education exclusion is more responsive to household income than other deprivation indicators, such as problems in the dwelling. Household income actually contributes to reduce the risk of arrears and the risk and incidence of material deprivation. Correlation between monetary poverty and other non-monetary dimensions of deprivation is found, although is far from perfect. Therefore, redistributive policies may contribute to palliate some of the problems, but they may not be the only strategy.

Low educated youth are more vulnerable to monetary poverty and material deprivation but not to problems in the dwelling. Disabled youths are more affected by all types of poverty and deprivation, education exclusion being a particularly relevant disadvantage for them.

Those living independently face a higher risk of education exclusion and arrears, but living in couple reduces the risk of monetary poverty and problems with housing. Youths with children are less qualified and therefore experience higher risks of education exclusion although material deprivation is more pronounced only from the second child onwards. In broad terms, we

have not found higher economic vulnerability among residentially independent youths than among those who remain in their parental home. We think that this responds to the fact that Spanish youths tend to delay residential independence until they feel a similar or even lower their risk of poverty and deprivation to the one they experience living with their parents. This would explain the non relevant role of residential independence on the risk of poverty and living conditions.

Those with stable full-time work are protected against all types of economic problems compared to those who recently suffered a long unemployment spell. Finally, non-EU immigrants face higher poverty risks and poorer living conditions but lower risk of education exclusion, which may be seen as a signal of poor labour market and social integration, together with disadvantages in the access to housing.

One of the main global results of the present piece of research is that profiles of different dimensions of poverty, deprivation and education exclusion are not fully parallel²⁵. This means that income transfers and income re-distribution policies may not be the only strategy to tackle inequality among youth. On the contrary, several “front lines” should be defined, according to the nature of the problem to be tackled. For instance, education policies and not only income transfers should contribute to reduce economic (both monetary and material) inequality whereas problems with housing have a completely different nature and do not respond to investment in human capital.

²⁵ This result confirms previous evidence for European countries, like Aassve *et al* (2005b) and Fahmy (2007). Both pieces of research study monetary poverty and deprivation.

Special attention should be devoted to two very vulnerable groups: disabled and non-EU immigrants. The former face very strong education exclusion and, consequently, bad positions in the labour market and poor living conditions; the latter face poverty and material deprivation despite their better education endowments.

Young families with children are also vulnerable, and more affected by low education attainment. In-kind transfers in caring and education public services for their children could contribute to free time for the labour market and income for other assets, but attention to lifelong-learning may not be forgotten to this group since they happen to register poorer education endowments. Current in-kind transfers when children are small will not translate into better living conditions in the future if this indicator is not taken into account by policymakers.

This piece of research provides for a cross-section description of poverty and deprivation but unfortunately it may not follow youths along time to see as well poverty entries, exits and persistence. In the case of young people the longitudinal view of monetary poverty and living conditions is a relevant and necessary field of research.

6. References

- Aassve, A., S. Mazzucco and L. Mencarini (2005a). Childbearing and wellbeing: a comparative analysis of the European welfare regimes, *Journal of European Social Policy*, 5(4), 283-299.
- Aassve, A., M.A. Davia, M. Iacovou, and L. Mencarini (2005b). Poverty and the transition to adulthood: risky situations and risky events, ISER WP 2005-23, Colchester, Essex.
- Aassve, A., M. Iacovou, and L. Mercarini (2006). Youth Poverty and Transition to Adulthood in Europe, *Demographic Research*, 15(2), 21-50.
- Aassve, A., M.A. Davia and M. Iacovou (2007). Does Leaving Home Make You Poor? Evidence from 13 European Countries, *European Journal of Population/Revue Européenne de Démographie*, 23(3-4), 315-338.
- Arnand, S. and A. K. Sen (1997). Concepts of Human Development and Poverty: A Multidimensional Perspective, Human Development Papers, United Nations Development Programme (UNDP), New York.
- Atkinson, A.B. (1970). Poverty in Britain and The Reform of Social Security, *University of Cambridge Department of Applied Economics Occasional Papers* 18.
- Atkinson, A.B. (2003). Multidimensional deprivation: Contrasting social welfare and counting approaches, *Journal of Economic Inequality*, 1, 51-56.
- Ayala, L. (2006). La monitorización de la desigualdad y la exclusión social: hacia un sistema integrado de indicadores, 43-59, in F. Vidal (ed.), *Exclusión social y estado de bienestar en España, V Informe FUHEM de Políticas Sociales*, Fundación Hogar del Empleado e Icaria Editorial.

- Ayala, L. and Navarro, C (2008). Multidimensional Indices of Housing Deprivation with Application to Spain, *Applied Economics*, **40(5)**, 597– 611.
- Ayllón, S. (2007). Changes in economic self-sufficiency, family income and living arrangements among youth in Spain, 1980-2000, present in *European Society of Population Economics Conference 2007*, University of Illinois (Chicago).
- Ayllón, S. M. Mercader-Prats, X. Ramos (2007). Caracterización de la privación y la pobreza en Cataluña", *Revista de Economía Aplicada*, **44 (XV)**, 137-175.
- Betti, G., D'Agostino, A., and Neri, L. (2002). Panel regression models for measuring multidimensional poverty dynamics, *Statistical Methods and Applications*, **11(3)**, 359-369.
- Bibi, S. (2005). Measuring Poverty in a Multidimensional Perspective: A Review of Literature, PEP-PMMA (Poverty and Economic Policy research network - Poverty Monitoring, Measurement and Analysis) *Working paper* 2005-17.
- Boarini, R. and M. Mira d'Ercole (2006). Measures of Material Deprivation in OECD Countries, *OECD Social Employment and Migration, Working Papers 37*, OECD Publishing.
- Bourguignon, F. and S.R. Chakravarty (2003). The Measurement of Multidimensional Poverty, *Journal of Economic Inequality*, **1(1)**, 25-49.
- Callan, T., Nolan, B. and Whelan, C.T. (2001). Persistent and Consistent Poverty in the 1994 and 1995 Waves of the European Community Household Panel Survey, *Review of Income and Wealth*, **47(4)**, 427-444.
- Cantó, O. and M. Mercader-Prats (1999). Poverty among children and youth in Spain: the role of parents and youth employment status, *Document de Treball 99.07, Departament d'Economia Aplicada, Universitat Autònoma de Barcelona*.

- Cantó, O. and M. Mercader-Prats (2001). Young people leaving home: the impact of poverty in Spain". Bradbury, B., S.P. Jenkins, J. Micklewright (eds), *The Dynamics of Child Poverty in Industrialised Countries*. Cambridge. Cambridge University Press.
- Chiappero, E. (2000). A Multidimensional Assessment of Well-being based on Sen's Functioning Approach, *Rivista Internazionale di Scienze Sociali*, 2, anno CVIII, Università Católica del Sacro Cuore, (Milán) Aprile-Giugno, 207-239.
- Cutler, D.M. and L.W. Katz (1992). Rising Inequality? Changes in the Distribution of Income and Consumption in the 1980's, *The American Economic Review*, 82(2) Papers and Proceedings of the Hundred and Fourth Annual Meeting of the American Economic Association, 546-551.
- D'Ambrosio C. and C. Gradin (2003). Income Distribution and social exclusion of children. Evidence from Italy and Spain in the 1990s, *Journal of Comparative Family Studies*, special issue Family and Children Inequalities, XXXIV (3), 479-495.
- Desai, M. and Shah, A. (1988), "An econometric approach to the measurement of poverty" *Oxford Economic Papers*, 40(3), 505-522.
- Drèze, J. and A. Sen (2002). *India: Development and Participation*. Oxford: Oxford University Press.
- European Commission (2007). *Special Eurobarometer 279: Poverty and Exclusion*. Directorate General Employment, Social Affairs and Equal Opportunities.
- Eurostat (2002). *European social statistics; Income, poverty and social exclusion: 2nd report*. Luxembourg: Office for Official Publications of the European Communities.
- Fahmy, E. (2007). Poverty and Youth Transitions in Europe: An Analysis of the European Communities Household Panel, in Colley, H., P. Boetzelen, B. Hoskins and T. Parveva

- (eds) *Social inclusion for young people: breaking down the barriers*, Council of Europe Publishing.
- Förster M. (2005). The European Union social space Revisited. Comparing poverty in the enlarged European Union, *Journal of Comparative Policy Analysis*, 7(1), 29-48.
- Garrido, R.; M. Requena (1996), *La Emancipación de los Jóvenes en España*. Madrid, Ministerio de Trabajo y Asuntos Sociales/INJUVE, 1996.
- García-Serrano, C, Malo, M.A., and Toharia, L. (2001). *La pobreza en España. Un análisis crítico basado en el Panel de Hogares de la Unión Europea (PHOGUE)*, Ministerio de Trabajo y Asuntos Sociales.
- Guio, A. C. & I. Engsted Maquet (2006). Material deprivation and poor housing" What can be learned from the EU-SILC 2004 data? How can EU-SILC be improved in this matter? Present in "*Comparative EU Statistics on Income and Living conditions: issues and Challenges*" (Helsinki, November 2006).
- Haverman, R. and A. Bershadker (2001). The Inability to be Self-Reliant as an Indicator of Poverty: Trends for the U.S., 1975-97. *Review of Income and Wealth*, 47(3), 335-360.
- Iacovou, M. and R. Berthoud (2001). *Young People's Lives: A Map of Europe*, Colchester: University of Essex, Institute for Social and Economic Research.
- Iceland, J. and K. J. Baumanb (2007). Income poverty and material hardship: How strong is the association? *The Journal of Socio-Economics* 36(3), 376–396.
- Kamanou, G. (2000). Poverty and Valuation: a Review of Definitional Issues and their Implications on Statistical Methodologies for Poverty Measurements, Session C-Pa 6a Montreux 2000. Statistics Development and Analysis Section, United Nations Statistics Division-UNSD.

- Laparra, M: (2005). Una perspectiva de conjunto sobre el espacio social de la exclusión: El caso de Navarra en el contexto español de precariedad integrada, Unidad de Políticas Comparadas (CSIC), *Working Paper* 00-05. Universidad de Navarra.
- Long, J.S. and J. Freese (2006). *Regression Models for Categorical Dependent Variables Using STATA*, STATA Press, STATA Corp LP.
- Mack, J., and Lansley, S. (1985). *Poor Britain*, London: Allen and Unwin.
- Martínez, R. and Ruiz-Huerta, J. (1999). Algunas reflexiones sobre la medición de la pobreza. Una aplicación al caso español, 367-428, in J.M. Maravall (ed.), *Dimensiones de la desigualdad*, Colección Igualdad, Vol. 13, Fundación Argentaria-Visor, Madrid.
- Mendola, D., A. Busetta and A. Aassve, (2008). Poverty Permanence Among European Youth. *Working Paper of Institute for Social and Economic Research*, paper 2008-04. Colchester: University of Essex.
- Muffels, R. and Fouarge, D. (2004). The Role of European Welfare States in Explaining Resources Deprivation. *Social Indicators Research*, **68(3)**, 299-330.
- Navarro Ruiz C. (2006). *La Exclusión en Vivienda en España*. Consejo Económico y Social. Madrid.
- Parisi, L. (2008). Leaving Home and the Chances of Being Poor: The Case of Young People in Southern European Countries", *Labour*, **22 (special issue)**, 89-114.
- Pérez Camarero, S., A. Hidalgo Vega, and M.J. Calderón. (2006). *La Economía de las Personas Jóvenes*, Madrid. INJUVE, Servicio de Documentación y Estudios.
- Pérez Mayo, J. (2005). Identifying deprivation profiles in Spain: a new approach, *Applied Economics*, **37(8)**, 943-955.
- PNUD (2000a), *Human Development Report 2000*, Nueva York, NY: Oxford University Press.

- PNUD (2000b), *Overcoming Human Poverty: United Nations Development Programme Poverty Report 2000*, Nueva York, NY: Programa de las Naciones Unidas para el Desarrollo.
- Qizilbash, M (2004). On the Arbitrariness and Robustness of Multi-Dimensional Poverty Rankings, *Journal of Human Development*, **5(3)**, 355-375.
- Quintini, G., J.P. Martin, S. Martin (2007). The Changing Nature of the School-to-Work Transition Process in OECD Countries, *IZA Discussion Paper* 2582.
- Robeyns, I. (2005). The Capability Approach: a theoretical survey, *Journal of Human Development*, **6(1)**, 93-114.
- Robeyns, I. (2006). Three models of education: rights, capabilities and human capital, *Theory and Research in Education*, **4(1)**, 69-84.
- Sen, A. (1976). Poverty: an ordinal approach to measurement, *Econometrica*, **46**, 437-46.
- Sen, A. (1992). *Inequality Re-examined*, Cambridge, MA: Harvard University Press.
- Sen, A. (1999). *Development as Freedom*. Oxford; Oxford University Press.
- Sen, A. (2000). "Social Exclusion: Concept, Application, and Scrutiny". *Social Development Papers*, nº.1, Asian Development Bank.
- Silver, H. and S.M. Miller (2003). Social Exclusion: The European Approach to Social Disadvantage, *Indicators*, **2(2)**, 5-21.
- Toharia, L., C. Albert, C. García-Serrano, M.A. Malo, M. A. Davia and J.M. Arranz (2007). *Empleo e Inclusión Social*, Ministerio de Trabajo y Asuntos Sociales, Madrid.
- Townsend, P. (1979). *Poverty in the United Kingdom*, Harmondsworth, Penguin.
- Tsaklogou, P. and Papadopoulos, F. (2002). Poverty, material deprivation and multidimensional disadvantage during four life stages: Evidence from ECHP, in M. Bargnes, C. Heady, S. Middleton, J. Millar, F. Papadopoulos, G. Room and P. Tsaklogou (eds): *Poverty and Social Exclusion in Europe*, Edward Elgar Publishing Limited.

- Waglé, U. (2002). Rethinking poverty: definition and measurement, *International Social Science Journal*, 54(171), 155 – 165.
- Whelan, C.T., Layte, R. and Maître, B. (2002). Multiple Deprivation and Persistent Poverty in the European Union, *Journal of European Social Policy* 15(2), 91–105.
- Whelan, C.T. and Maître, B. (2005a). Economic Vulnerability, Multidimensional Deprivation and Social Cohesion in an Enlarged European Community, *International Journal of Comparative Sociology*, 46(3), 215-239.
- Whelan, C.T and Maître, B. (2005b). Vulnerability and Multiple Deprivation: Perspectives on Economic Exclusion in Europe: A Latent Class Analysis, *European Societies* 7(3), 423–50.
- Whelan, Christopher T. and Maître, Bertrand (2007). Measuring Material Deprivation with EU-SILC: Lessons from the Irish Survey, *European Societies*, 9(2), 147 - 173.

Table 1. Percentage of youth living in households affected by economic problems and “non-affordability”.

Material deprivation indicators:			
(A) Problems with the dwelling			
Not enough natural Light in at least one of the rooms	11,25	Crime, violence and vandalism in the neighbourhood	19,27
Outside Noise	27,66	Leaking roofs, damp	18,23
Pollution and other environmental problems	16,17	Lack of space	10,22
(B) Arrears with payments in the last 12 months			
With mortgage or rent	3,36		
With electricity / water / gas bills	4,16		
Differed payments and other credits	2,66		
(C) “Non-affordability” (the household cannot afford...)			
A week of holidays	39,74	Colour TV set	0,13
Meat/ fish every two days	2,23	Computer	13,57
Unexpected expenses	33,19	Washing machine	0,33
Telephone	0,64	Car	6,35
Number of cases	22.563		

Source: Spanish section of EU-SILC (2004, 2005 and 2006).

Table 2. Relative poverty rates and average value of deprivation indicators for young people (16-34 year-olds).

	Monetary poverty		Education exclusion		Material deprivation		
	Poverty rate (risk)	Severe poverty risk	Education exclusion	Severe education exclusion	Dwelling problems	Arrays	"non-affordability"
Average	15,55	6,88	29,25	7,98	16,71	3,7	9,28
Gender							
Women	16,52	7,36	23,67	6,58	17,09	3,75	9,13
Men	14,64	6,42	34,55	9,31	16,34	3,66	9,43
Age groups							
16-19	27,27	11,55	15,64	4,26	18,38	4,19	10,19
20-24	18,01	8,4	27,57	5,91	16,82	3,93	9,44
25-29	14,24	6,47	31,28	8,26	16,99	3,81	9,99
30-34	12,16	5,06	31,96	10,05	15,99	3,35	8,37
Educational attainment							
Illiterate/ primary	27,02	12,9	83,82	83,82	19,01	8,16	15,99
Secondary compulsory	20,44	9	72,66	0	17,53	4,88	12,01
Secondary post-compulsory	13,86	6,3	0	0	16,44	2,91	8,07
Higher education	8,86	3,46	0	0	15,43	1,96	5,73
Disability							
Intense / moderate	19,68	9,62	47,45	19,23	23,03	8,36	13,21
Mild	15,27	6,36	38,23	10,1	21,47	6,27	12,14
None	15,46	6,83	28,13	7,52	16,21	3,4	8,98
Household composition							
Alone	16,79	12,1	24,26	7,65	13,39	5,73	11,34
With both parents	15,94	6,64	23,64	5,42	16,96	2,95	8,5
With one single parent	22,12	9,77	31,25	9,01	17,8	5,02	13,54
Childless couples	11,69	4,93	37,69	11,52	15,82	4,02	8,17
With couple and children	19,54	11,51	34,91	11,09	17,98	4,75	13,19
Childless (non alone) singles	15,48	6,56	51,15	16,4	23,41	9,05	13,74
Number of children							
None	14,58	6,46	25,75	6,35	16,48	3,35	8,92
One	14,68	6,27	44,65	15,53	16,75	5,33	10,6
Two	30,63	13,67	52,37	16,35	18,8	5,38	11,67
Three or more	53,82	26,09	74,24	42,92	33,35	13,22	19,91
Most frequent labour market status during the previous year (i.e., the reference period for income variables)							
Did not spend 6 months in any concrete situation	21,44	9,07	40	7,98	19	6,01	12,62
Full-time worker	6,38	2,3	35,86	9,11	15,96	3,22	8,56
Part-time worker	11,56	4,86	28,67	8,56	17,44	4,15	9,46
Unemployed	35,43	18	50,73	15,85	19,83	7,26	14,84
Student	22,34	9,95	2,46	0,41	16,23	2,55	7,46
Inactive	35,53	16,63	59,46	21,36	18,55	6,07	13,55

Table 2. Relative poverty rates and average value of deprivation indicators for young people (16-34 year-olds) (continuation).

Population density							
High	11,7	5,3	22,37	6,14	19,08	3,79	8,53
Mean	18,48	7,72	35,47	10,17	15,57	4,08	10,16
Low	20,79	9,34	37,79	9,82	12,91	3,22	10,05
Nationality and place of birth							
Spanish-born	14,99	6,54	29,04	7,59	16,59	3,4	8,77
Spanish born abroad	12,53	5,64	27,11	7,72	15,32	6,17	11,98
EU citizen	14,57	6,13	30,73	13,03	16,1	4,11	9,75
Non-EU citizen	27,81	14,16	33,82	15,08	19,48	8,69	18,38
OECD-modified equivalent <i>per capita</i> income (% median)							
< 25% of the median	100	100	41,04	16,82	18,72	7,71	17,31
25-40% of the median	100	100	37,92	13,54	19,81	11,01	18
40-50% of the median	100	0	38	12,76	20,05	4,7	16
50-60% of the median	100	0	35,96	11,33	17,95	5,59	14,92
60-70% of the median	0	0	36,68	10,21	17,72	5,33	12,72
70-100% of the median	0	0	33,71	8,75	18,15	4,83	11,72
100-150% of the median	0	0	30,88	8,02	16,36	2,84	8,18
150%+ of the median	0	0	16,05	3,38	14,17	1,27	3,25
Living with parent(s)							
Yes	17,15	7,46	25,59	6,37	17,16	3,4	9,6
No	12,31	5,7	36,68	11,26	15,77	4,33	8,64
Year of the interview							
2004	16,99	7,52	4,47	10,26	29,25	5,14	17,68
2005	15,01	6,61	3,76	9,23	29,3	10,07	16,74
2006	14,87	6,6	3,01	8,52	29,2	8,41	15,86
Spearman correlation (sign at 99%)							
OECD-modified equivalent <i>per capita</i> income			-0,1619	-0,1199	-0,1102	-0,1534	-0,3958
Poverty risk			0,0737	0,1234	0,2542	0,0905	0,0959
Number of cases	22563	22563	22563	22563	22563	22563	22563

Source: Spanish section of EU-SILC (2004, 2005 and 2006).

Table 3.A. Monetary relative (severe) poverty risk and education (severe) exclusion. Results from the multivariate estimations (*binomial logit*).

	Monetary poverty risk		Severe poverty risk		Education exclusion		Severe education exclusion	
	with parents	without parents	with parents	without parents	with parents	without parents	with parents	without parents
Gender (women)								
Men	0.996	2.382***	0.988	2.536***	2.179***	2.178***	1.775***	2.000***
Age (16-19)								
20-24	0.902	0.979	1.073	5.852	0.427***	0.239	0.507***	0.186
25-29	0.963	1.337	1.135	5.614	0.181***	0.108*	0.364***	0.195
30-34	1.105	1.012	1.007	4.712	0.161***	0.055**	0.477***	0.130
Per capita OECD-modified equivalent household income (% median) (< 25%)								
25-40% of the median					0.617*	1.798*	0.715	0.950
40-50% of the median					0.687	1.377	0.711	0.845
50-60% of the median					0.601**	0.979	0.541**	0.856
60-70% of the median					0.654*	0.950	0.593*	0.634
70-100% of the median					0.529***	0.818	0.507***	0.527**
100-150% of the median					0.482***	0.611*	0.530**	0.423***
150 + % of the median					0.218***	0.256***	0.242***	0.176***
Education attainment (up to primary)								
Compulsory secondary education	0.872	0.654**	0.863	0.715				
Post-compulsory secondary education	0.588***	0.482***	0.604***	0.577**				
Higher / tertiary education	0.528***	0.334***	0.469***	0.353***				
Disability (none)								
Severe	0.811	1.154	0.826	1.486	2.654***	1.139	2.588***	1.799*
Mild	1.026	0.822	0.913	0.788	1.533***	1.115	1.176	1.074
Household composition (living with both parents in sub-sample "with", living with people different from the couple in the sub-sample "without")								
Alone		5.385***		9.254***		0.363***		0.598
With one single parent	1.606***		1.606***		1.371***		1.540***	
In couple		1.131		1.090		0.781		0.863
In couple and with parents (or parents in law)	1.411*		2.163***		1.223		1.365	

Table 3.A. Monetary relative (severe) poverty risk and education (severe) exclusion. Results from the multivariate estimations (*binomial logit*) (continuation).

Number of children (none)								
One	2.161***	2.375***	1.733*	2.276***	2.014***	1.417***	1.939*	1.594***
Two	4.443***	7.085***	5.911***	5.438***	3.921**	1.649***	1.905	1.344
Three or more	20.944**	17.926***	12.413*	10.317***		4.181***	12.097**	4.710***
Most frequent relation with the labour market during the prior year (full-time worker)								
Not even 6 months in any concrete situation	4.202***	4.338***	3.718***	6.701***	0.657**	1.528	0.485**	1.236
Part-time worker	2.454***	1.868**	2.612***	2.305*	0.526***	1.226	0.659*	1.626*
Unemployed	8.013***	6.448***	8.458***	9.316***	1.118	1.254	1.245	1.524**
Student	5.335***	18.701***	5.773***	32.805***	0.014***	0.063***	0.026***	0.311
Inactive	7.725***	7.003***	7.929***	8.175***	1.005	2.343***	1.232	2.171***
Population density (high)								
Mean	1.476***	0.874	1.391**	0.694	1.360***	1.556***	1.114	1.286
Low	1.676***	0.874	1.565***	0.946	1.446***	2.178***	1.278*	1.349
Nationality and place of Birth (Spanish-born)								
Spanish citizens born abroad	1.068	0.741	1.159	0.534	0.945	0.650	1.060	0.780
EU-citizens	0.400*	1.814	0.573	0.969	1.676	0.692	0.938	2.307*
Non EU-citizens	3.037***	4.103***	2.280**	3.866***	0.877	0.488***	1.397	1.227
Wald Chi2 (53 degrees of freedom)	1273,54	818,09	681,71	646,39	1759,68	783,56	659,01	493,64
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Number of observations	16211	6352	16211	6352	16197	6352	16211	6352

(i) Additional control variables have been 17 region dummies and 3 dummies for the year of the interview.

(***) 99% ; (**) 95% ; (*) 90%

Source: Spanish section of EU-SILC (2004, 2005 and 2006).

Table 3B. Results for ZINB models on material deprivation: risk and incidence.

	LIVING WITH PARENTS						LIVING INDEPENDENTLY FROM PARENTS					
	"zero" risk of material deprivation			Incidence of material deprivation			"zero" risk of material deprivation			Incidence of material deprivation		
	dwelling	Arrears	"Non-affordab"	dwelling	Arrears	"Non-affordab"	dwelling	Arrears	"Non-affordab"	dwelling	Arrears	"Non-affordab"
Gender (women)												
Men	1.092*	1.046	1.098*	0.980	1.035	0.989	0.984	0.812	0.867	1.001	0.957	1.044
Age (16-19)												
20-24	1.160*	1.109	0.970	0.947*	0.948	0.964	3.452	0.563	0.441	0.910	0.717	1.019
25-29	1.079	1.339	0.798*	0.932*	0.972	0.987	4.127*	0.688	0.733	0.847	0.685	0.922
30-34	1.210	2.117***	0.941	0.947	0.931	0.975	4.791*	0.940	1.032	0.824	0.764	0.858
Per capita OECD-modified equivalent household income (% median) (< 25%)												
25-40% of the median	1.025	0.993	0.856	1.075	1.247*	1.000	1.407	0.597	0.872	1.123	1.350**	1.135
40-50% of the median	0.899	1.792**	1.135	1.069	1.137	0.945	1.228	0.999	0.495*	1.140	0.798	1.082
50-60% of the median	0.949	1.637*	0.981	0.973	1.052	0.878***	1.381	0.953	0.782	1.056	1.196	1.039
60-70% of the median	0.885	1.552*	1.082	0.955	1.093	0.827***	1.156	1.144	0.775	0.968	1.232	0.847**
70-100% of the median	1.063	1.797***	1.538***	1.000	1.099	0.808***	1.252	1.068	0.888	1.084	1.188	0.890*
100-150% of the median	1.148	2.728***	2.805***	0.968	1.068	0.747***	1.462	1.669	1.574	0.994	0.956	0.763***
150%+ of the median	1.383**	6.599***	7.541***	0.914*	1.138	0.677***	1.741*	2.606***	4.347***	0.977	0.954	0.697**
Education attainment (up to primary)												
Compulsory secondary education	1.067	1.224	1.472***	0.987	0.947	0.968	0.919	1.507*	1.621***	0.894**	0.907	0.902**
Post-compulsory secondary education	1.142	1.597**	2.246***	0.959	0.875*	0.892***	0.886	1.945***	2.323***	0.923	0.882	0.847**
Higher / tertiary education	1.093	2.392***	2.875***	0.948	0.946	0.834***	0.902	2.053***	4.211***	0.853***	0.866	0.814**
Disability (none)												
Severe	0.688*	0.483***	0.652*	1.064	1.196*	1.064	0.376***	0.562	0.542**	1.135*	1.128	1.063
Mild	0.719**	0.594**	0.748*	1.076**	0.915	1.087**	0.524***	0.480***	0.596***	1.129***	0.964	1.085*
Household composition (living with both parents in sub-sample "with", living with people different from the couple in the sub-sample "independently")												
Alone							1.716*	0.904	0.951	0.812**	0.702*	1.127*
With one single parent	0.871*	0.697***	0.592***	0.932***	0.981	1.183***						
In couple							1.482*	1.474	1.657**	0.869**	0.748**	0.956
In couple and with parents	1.161	0.770	0.733*	0.961	0.901	1.043						

Table 3B. Results for ZINB models on material deprivation: risk and incidence (continuation).

Number of children (none)												
One	0.618*	0.731	0.729	1.113*	1.043	1.056	0.912	0.906	0.732***	1.018	1.045	1.007
Two	0.528	0.828	0.136**	1.259*	1.420*	1.206*	0.734**	0.714	0.714**	1.084*	0.798*	0.990
Three or more	0.495	0.251	0.000***	1.369*	1.017	1.726***	0.145***	0.474*	0.485**	1.211*	0.866	1.108
Most frequent relation with the labour market during the year prior to the interview (full-time worker)												
Not even 6 m. in any concrete situation	0.755*	0.852	1.085	0.980	1.121	1.039	0.899	0.658	0.510**	1.026	0.973	1.102
Part-time Yorker	1.051	1.450	1.535***	1.010	1.183*	1.001	1.014	0.721	0.993	0.966	0.968	1.028
Unemployed	0.806*	0.926	1.002	0.992	1.022	1.039	0.818	0.611**	0.800	1.005	1.170	1.089*
Student	1.170**	2.159***	2.191***	0.952*	1.056	0.873***	0.899	2.077	0.625	1.065	1.298	0.957
Inactive	0.872	1.570*	1.574**	1.062	1.161	0.964	1.006	0.953	1.078	0.943	1.039	1.061
Population density (high)												
Mean	1.620***	1.219	1.031	0.935***	0.905	0.992	1.416***	1.236	1.100	0.893***	0.981	0.950
Low	1.743***	1.358**	0.896	0.838***	0.926	1.005	1.622***	1.204	1.112	0.864***	0.818**	0.926**
Nationality and place of Birth (Spanish-born)												
Spanish citizens born abroad	1.019	0.559	0.745	0.892*	0.890	1.180**	0.976	0.481*	0.765	0.886	1.182	1.252**
EU-citizens	1.377	1.042	1.858	1.111	0.791	1.033	1.004	1.002	0.506*	0.983	1.108	0.963
Non EU-citizens	0.727*	0.500**	0.298***	1.030	1.129	1.321***	0.877	0.567***	0.275***	0.964	0.965	1.191***
Ln alpha				0.200***	0.261***	0.130***				0.205***	0.253***	0.166***
				(-20.120)	(-8.351)	(-10.146)				(-12.804)	(-6.333)	(-8.320)
Wald Chi2 (53 d. of freedom)				497,36	138,84	878,22				232,39	399,68	357,86
				(0,000)	(0,000)	(0,000)				(0,000)	(0,000)	(0,000)
Number of observations				16211	16211	16211				6352	6352	6352

(*) Additional control variables have been 17 region dummies and 3 dummies for the year of the interview.

Source: Spanish section of EU-SILC (2004, 2005 and 2006).

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