UNIVERSITY OF GOTHENBURG
DEPARTMENT OF SOCIOLOGY AND WORK SCIENCE

Are there any long-term consequences of poverty?

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Autumn 2012

Title: Are there any long-term consequences of poverty?

Degree: Master in Sociology

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Key words: Poverty, Deprivation, WDI, Longitudinal Analysis, Panel

ABSTRACT

Earlier research has shown that poverty is associated and clustered with other welfare problems. However, less is known about the long-term consequences of being poor. In this explorative study, Swedish longitudinal data, collected 1998 and 2006 has been used to examine whether there are any long-term effects on several indicators of living conditions. With logistic regression models, we predicted 14 indicators of bad living conditions in 2006. We measured poverty using income (< 60% below median income) and deprivation (Weighted Deprivation Index) in 1998. Estimates were also adjusted for demographical control variables and poverty in 2006. Findings from this study indicated that among those categorized as poor 1998 the risk of being deprivation poor or income poor in 2006 was significantly higher (Adj. OR 4.63, 3.07 respectively). Furthermore, we found that especially deprivation poverty had long-term consequences on materialistic and economical living conditions, while less effect on social, health, political and victimization. Income poverty was shown to be having little or no effect on either of the examined living conditions in this study. Therefore we argue that poverty has long-term effects in two ways, first an increased risk of future poverty and secondly an increased risk of bad materialistic and economic living condition in 2006. However, since research is limited, further research is needed to validate these results.

Are there any long-term consequences of poverty?

1. Introduction

Could poverty today increase risk of bad living conditions in the future, and, is there reason to assume a long-term effect of poverty? Due to the absence of longitudinal studies in this field, these questions are not easily answered today. However, previous studies have identified an important cross-sectional link between poverty and other welfare problems, resulting in an overrepresentation of bad living conditions among the poor (see for example, Halleröd 1991; Gallie, Paugam et al. 2003; Halleröd and Larsson 2008). Even if these findings are important per se, it does not answer the fundamental question raised above. Therefore, in this study, we intend to examine whether poverty has any long-term consequences on living conditions, using Swedish longitudinal data collected in 1998 and in 2006. The paper proceeds in the following way. Initially, we define poverty and discuss its plausible consequences. Thereafter we present our data material, our variables and the statistical methods. Finally we present the results, and end with discussion and conclusion.

1.1 Background

For decades there has been a discussion among social scientists about the appropriate way to define poverty as 'absolute' or 'relative'. Sen (1983) argued in the early 80's that a consensus has emerged in favor for a relative perspective on poverty in western countries (see for example, Mack and Lansley 1985; Layte, Whelan et al. 2001; Halleröd 2006; Halleröd, Larsson et al. 2006; Grødem 2008; Halleröd and Larsson 2008). A frequently used relative poverty definition is that people are poor when they cannot participate in activities, or, achieve the living conditions that are customary in the society in which they belong (Townsend 1979). Furthermore, poverty is the lack of economic resources, in which the individual cannot maintain the living conditions, health, or having the nutrition that is necessary (Sen, 1983). Poverty results in an inability to be integrated in the general lifestyle and maintaining the social relations and social conventions. Most individuals are likely to have some experience of economic difficulties during their life course. However, the majorities of these individuals are mobile and leave their economic problems behind, while other move in and out of economic hardship, or become entrapped. But what are poor individuals likely to experience? According to an earlier Swedish study, deprivation poverty is clustered with welfare problems such as economic precariousness, unemployment, psychological strain and health problems (Halleröd and Larsson 2008). These findings are in line with several other earlier studies in this field (see for example, Halleröd 1991; Gallie, Paugam et al. 2003; Halleröd and Larsson 2008). However, poverty is a complex phenomenon and the casual relationship to other welfare problems may not be given. For example, poverty could cause bad health, but bad health could also

cause poverty. To have understanding of these casual mechanisms or association both generally and over time are therefore important when taking action against poverty.

If poverty causes various welfare problems, what are the long-term consequences? Researchers such as Whelan, Layte et al (2002) has examined the consequences of having long spells of poverty and found that it could lead to multiple deprivation. Gallie, Paugam et al. (2003) argued that there are strong evidence that poverty contributed to a vicious circle of exclusion. Furthermore, Esping-Andersen, Gallie et al (2002) argues that if poverty turns persistent, families might distance themselves from the general society in terms of consumption. Additionally, two Swedish studies found that the probability to leave long-term social assistance decreases the longer the person brought it (Hansen and Löfström 2006; Andrén 2007).

A good assumption seems to be that the longer people are poor; welfare problems are likely to increase, strengthen and become persistent. Having long spells of poverty may also lead into entrapment and the risk of having bad living conditions of a period of time. However, today little is known about the long-term consequences due to the absence of longitudinal studies. Therefore, our ambition with this study is to examine the long-term effect of being poor in 1998 and the consequences on various aspects of living conditions in 2006. First, we analyze whether there is any connection between poverty and bad living conditions over time. If there are any long-term effects, are these caused by the demographical characteristics among the participants, or is it caused by recurrent or persistent poverty, i.e. individual being poor during both measurement points? In this study we aim to examine these questions that are important when changing in social policies and taking action against poverty. From a theoretical point of view the analysis is important since it will provide information about the degree to which poverty has a long-term impact on people's ability to "participate in activities, or, achieve the living conditions that are customary in the society in which they belong".

2. Data

This study is based on data from Statistics Sweden's (SCB) annual Survey of Living Conditions (ULF)[1], in 1998 and in 2006, which addresses to a representative sample of the Swedish population aged 16 to 84 years old. In 1998, samples of respondents were chosen to be re-interviewed eight years later in the 2006 years survey of living condition. With restrictions, the total sample consists of 2115 of participants aged 18-70 years old in the first survey.

2.1 Measuring poverty

In this study we measure poverty using both income-based and a deprivation-based definition. Relative income is an indirect indicator and based on a specific level of income, often called poverty line. Deprivation on the other hand is a direct indicator measured by visible poverty, i.e. low living standards or, as this study, the lack of consumption items. In this study we defined individuals

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[1] Statistics Sweden: http://www.scb.se/Pages/Product____12199.aspx

living in a household that has a disposable income lower than 60 percent of the (weighted) median household income, as income poor. The disposable after-tax income is weighted using an equivalence scale developed and used by Statistics Sweden[2]. However, in earlier research relative income has shown to be less successful to capturing deprivation. This is mainly because individuals can have other recourses from the black labor market, saved money, money from heritage or having small expenditures (Mayer and Jencks 1988; Ringen 1988; Halleröd 1996; Layte, Whelan et al. 2001; Halleröd and Larsson 2008). In response to the shortcoming of an income-based measure, an increasing amount of studies have included a direct measurement of deprivation poverty using consumption items, amenities and activities (see for example, Mack and Lansley 1985; Layte, Whelan et al. 2001; Whelan, Layte et al. 2002; Halleröd 2006; Grødem 2008). The second approach is the Weighted Deprivation Index (WDI). WDI measures the ability or inability to consume goods and services in relation to the general lifestyle in society developed from the objective relative deprivation index used by Mack and Lansley (1985). The WDI index was measured using 14 consumption items in 1998 and in 2006 (Table 1). For each item the respondents answer whether they have a specific consumption item or not. If the answer is no, respondent is asked if it is because they cannot afford the item or if they are not interested. The WDI score are calculated using the formula below.

$$WDI_i = \sum z_i \cdot (W = \propto + \beta_i X_1 + \beta_i X_2)$$

z_i is whether the respondent want but cannot afford item z. W is the weight for item z_i and estimated as the probability for respondent i to have z_i given age (X_1) and having children or not (X_2). The index is weighted with logistic regression models for every specific item (z_i), using the sample average. This implies that if 96.8 percent of the participants have a home insurance, the index is weighted by 0.968. Once the index is weighted, the connection between the general lifestyle and the subject deprivation becomes more valid. In this study, the deprivation poverty line (poor/non poor), is derived from the percentage categorized as income poor and adjusted using an appropriate WDI score. A more detailed discussion on the WDI are presented in Halleröd, Larsson et al (2006) and Halleröd (2006). Today, European Union measure poverty using both the relative income measure and a simplified version of the WDI measure[3].

2.2 Measuring living conditions

When it comes to outcome variables, that is, the consequences of poverty we have chosen an explorative approach. A total of 14 various aspects of living conditions have been chosen in this study based on what has been defined as important in earlier research (see Table 2). The indicators

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[2] Household, One adult (weight 1.00), two adult (weight 1.51), additional adult 20- years or older (weight 0.60), first child (0.52) , additional children, more than one (0.0

[3] In addition the EU is also using jobless household, i.e. all members are either unemployed or inactive, as a poverty indicator

are divided in seven different topics; Housing facilities and neighborhood environment, Personal health, Social life, Political activity, Economic resources, Political recourses and Victimization. Housing facilities and neighborhood environment is measured using three indicators. Crowded housing is defined as those households not having one room for each household member. Kitchen and one room are reduced in this calculation such as one room for married or individuals living together with a partner. Common with vandalism is measured subjectively. Participants were asked whether they think that it is often, or much often vandalism in their neighborhood (yes). The third indicator is subjective fear of going out at night (yes, often). Personal health is measured using subjective indicator of health, such as anxiety and worries (yes severe and yes, light). Also whether respondent had been long-term sick, handicapped or having any other illness last 12 month (yes). Furthermore, Body Mass Index (BMI) is used to calculate the respondents BMI scores. Individuals with a BMI score over 30 are treated as overweight or obese. Social life is measured with two indicators. The first indicator is whether the participants meet neighbors (1-2 times a year or less) or relatives (at least one time a month). Two indicators are included in Political activity; the first is whether participants are active in a political party (no) and if he or she is active in political discussions (no). Economic resources are measured subjectively. Participants are asked whether they experienced any economic crises last 12 month (yes) and also if the respondent has a 15000 SEK in cash margin (no). Political resources are measured with the ability to appeal a government decision (no). Finally, Victimization is measured with one indicator. Participants were asked if they experienced any kind of violence last 12 month (yes).

2.3 Control variables

As mentioned above, the causality between poverty and different aspects of living conditions are not given, thus, this study is confined to explore if there are correlations over time between poverty and living conditions. However, even if we find such correlations, they could still be spurious, caused by another factor that is correlated with both poverty and the outcome. In order to minimize this risk we will use a number of control variables. Sex is used as a control variable based on the systematic differences between men and women in society. Since poverty is partly a youth problem, we control for Age (continuous). Socioeconomic status (SES) (higher managerial, middle managerial, lower managerial, skilled manual, unskilled manual, self-employed, student/other) was also included to control for systematic social and economic differences. Because time changes household composition we control for Household type (single adult, one adult and one or more children, two adult, two adult and one or more children). Furthermore, we control for Ancestral homeland (Nordic, other) due to systematic differences. The Position on labor market (full time, part time, unemployed, student, retired, other) are included because of its relevance with poverty. All these demographical control variables discussed above are presented in Table 3. In order to rule out the possibility that the overtime correlation is caused not by the long term impact of poverty

but of current poverty we also include income poverty and deprivation poverty from 2006 as a control variable, to exclude influence of present poverty (Table 4).

2.4 Statistical methods

In this study logistic regression models are presented 'Crude' and 'Adjusted' (Table 4 and Table 5). The crude estimate is without and the adjusted estimate is with control variables included in the logistic regression model. In the logistic regression models, we use each of the 14 indicators of living condition as response variables. Hence, for each model specification 14 logistic regression models are estimated. This approach gives us the opportunity to predict future outcomes related to a broad range of living conditions and adjust for confounders. The logistic regression analysis was performed in three steps. First, we tested the bivariate association to find whether there are any associations over time between the response variables and our indicators. Secondly, we added the demographical control variables (sex, age, household, SES, labor market position and ancestral homeland) to adjust for structural differences. In this step we could find whether the long-term effects are caused by demographical explanations or not. Finally, in the third step we added demographical variables and poverty in 2006 (deprivation, income) as control variables. This final step is performed to control and find whether the effect is caused by persistent poverty or not, i. e. individuals being poor during both measurements in 1998 and in 2006 (Agresti, 2002).

3. Results

In Table 5, findings from the crude bivariate analysis showed that there were several long-term associations between deprivation poverty in 1998 and our indicators of living conditions in 2006. Of the 14 indicators of living conditions, 7 indicators were found significant for deprivation poverty. Additionally, the risk of deprivation poverty in 2006 was shown to be higher among those categorized as deprivation poor in 1998 (OR 6.82). Once we included the control variable deprivation poverty in 2006 into the model the risk was still strongly significant (Adj. OR 4.63). Thereafter we added demographical control variables and found that participants categorized as deprivation poor in 1998 was shown to have higher risk to live in a crowded housing and to live in a neighborhood were vandalism is common in 2006 (Adj. OR 2.39 and 1.85 respectively). Participants categorized as deprivation poor in 1998 had higher risk of economic crisis last 12 month and to have no cash margin in 2006 (Adj. OR 4.26 and 3.29 respectively). There was no significant indicator in category social life, political activity, political resources or victimization. Finally, we also added contemporary deprivation poverty in 2006 into the model and found that participants categorized as deprivation poor in 1998 was shown to have an increased risk of crowded housing, vandalism in the neighborhood, economic crises last 12 month and having no cash margin in 1998 (Adj. OR 1.86, 1.50, 2.57 and 1.97 respectively). As in the previous step, there were no significant indicators in category personal health, social life, political activity, political resources or victimization.

In Table 6, there were several long-term associations between income poverty in 1998 and bad living conditions in 2006. Out of 14 indicators of living conditions, 6 indicators were found significant. The risk of income poverty in 2006 was found significantly higher among those categorized as income poor in 1998 (OR 4.08, Adj. OR 3.07). In the second step we added demographical control variables and found that there were only one significant indicator of living conditions, participants categorized as income poor in 1998 was shown to have less ability to appeal a governmental decision in 2006 (Adj. OR 1.54). Finally, when contemporary income poverty in 2006 was added into the model the risk of seldom meeting neighbors some times a year or never and inability to appeal a governmental decision was higher among those individuals categorized as income poor in 1998 (Adj. OR 1.43 and 1.46 respectively). There were no significant indicator in category housing facilities and neighborhood environment, personal health, social life, political activity, political resources and victimization.

4. Discussion

In this study, Swedish longitudinal collected in 1998 and in 2006 was used to examine whether there are any long-term consequences of poverty. Poverty was measured with two definitions, deprivation poverty and relative income poverty. We chose 14 various indicators of living conditions, spanning from housing facilities and neighborhood environment, personal health, social life, political activity, victimization and political and economic resources. The main analysis was conducted in three steps using crude and adjusted logistic regression models. First we examined whether there is any long-term link between poverty and bad living condition, thereafter we added control variables to exclude demographical explanations, and, finally we controlled for both demographic variables and persistent poverty i.e. individual being poor during both measurement points.

Results indicated that having a record of poverty increases the risk of future poverty. Among participant's categorized deprivation poor in 1998, the adjusted risk was 4.26 times higher to be categorized as deprivation poor in 2006. With income-poverty, these results were 3.29 times higher. Findings from this study also indicated that there were several long-term relationships for both deprivation and income poverty in 1998 that influenced crowded housing, vandalism in the neighborhood, seldom meeting neighbors, and economic crisis last 12 month, having no cash margin or being exposed to violence in 2006. For deprivation poverty anxiety and worries were also significant. These findings are in line with many cross-sectional studies that we previously discussed (Halleröd 1991; Gallie, Paugam et al. 2003; Halleröd and Larsson 2008). However, the long-term significant associations were highly reduced once the control variables were added into the models. This could imply that demographical explanations and present poverty in 2006 are stronger determinants than prior poverty in 1998. For deprivation poverty, the results were similar regardless

adjustment. Results with both the demographical and poverty in 2006 as control variables showed that those categorized as deprivation poor in 1998 had higher risk to live in a crowded housing or in a neighborhood were vandalism are common in 2006. The risk was 2.39 times to 1.85 times higher among the participants categorized as deprivation poor in 1998. Furthermore, the risk of economic crisis last 12 month and the risk of having no cash margin in 2006 were 4.26 and 3.29 times higher among participants categorized as deprivation poor in 1998, respectively. This result was not in line with income poverty since all significant indicators in the crude models became insignificant after adjustment. There were also some ambiguous results for income poverty, two indicators, seldom meeting relatives and the inability to appeal a governmental decision became significant after adjustment. Based findings from this study we argue that demographical indicators are stronger determinants than income poverty, and, that our income-based poverty measure had little or no effect on future living conditions. These findings are partly consistent with an earlier study on Swedish adolescence by Halleröd and Westberg (2006); in which income deprivation in the youth was shown to say little about the future deprivation, earning and abilities. Deprivation poverty on the other hand, was shown to be a stronger determinant since four of the seven living conditions remained significant after the adjustment. Additionally, these findings demonstrate the clustering characteristics of poverty and the importance of demographical explanation and present poverty (Gallie, Paugam et al. 2003; Halleröd and Larsson 2008).

Finally, are there any long-term consequences of being poor? Findings from this study indicated that material and economic living conditions was more associated with deprivation poverty over time than social aspects and political activity, personal health or victimization. These results give us some information about which living conditions that are affected by poverty long-termly. It also gives us information about what individuals categorized as poor in 1998 are more likely to experience in 2006. Therefore we assume that materialistic and economical living conditions are more likely to turn persistent due to poverty. It is these living conditions that participants with a previous record of poverty tend to fall behind the general society. One explanation to this could be that materialistic and economic living conditions are accumulated during individual's life course, while personal health, social life, political activity or political resources are less retainable or time dependent. Some would argue that these results are connected to class differences in society. However, as the present author is aware, there are few or no researches done to validate the findings from this study. Therefore conclusion must be drawn with caution, until future studies can give us more information about poverty and its long-term associations.

Conclusion

This study has been one attempt to examine consequences of poverty in a longitudinal context. Findings indicated that previous experience of either deprivation poverty or income poverty increased the risk of future poverty and several bad living conditions. However, when we adjusted

the logistic regression models with demographical control variables and poverty in 2006 results showed that only deprivation poverty was associated with bad materialistic and economic living conditions in the long term. We argue that materialistic and economical living conditions are accumulated during individual's life course and more retainable than health, social life, political activity and resources. Furthermore, income poverty was found to have little or no long-term effect on either of the living conditions used in the study. These results give us information about what individuals in poverty in some way are likely to experience in Sweden between 1998 and 2006. Since research is limited in this field, the findings from this study needs to be validated by further research.

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TABLE 1 Consumption items, the percent's who do have/do not have and cannot afford consumption items, ULF 1998 and ULF 2006

	1998		2006	
	Do have	Can't afford	Do have	Can't afford
Home Insurance	98.0	1.1	98.8	0.2
Car	87.2	6.2	89.6	2.8
Microwave oven	80.3	4.1	90.2	0.5
Daily newspaper	78.7	7.8	76.5	4.2
A holiday away from home for one week a year or more	66.6	19.2	66.3	7.8
Home computer	62.1	13.3	83.9	1.4
Dishwasher	76.9	6.5	67.0	2.0
Saving at least 500 SEK on a monthly basis	55.9	33.4	64.7	18.5
TV	98.8	0.4	98.2	0.2
Video recorder	87.2	3.4	90.1	1.0
Washing machine	76.9	6.5	79.0	1.0
Driving license	89.4	4.4	91.6	1.6
Deep freeze or fridge freezer	98.9	0.8	99.4	0.1
Dental treatment once a year	86.0	6.3	71.1	5.4

TABLE 2 Various living conditions in 2006

Living conditions	2006
Housing facilities and neighborhood environment	
Crowded Housing	9.1
Common with vandalism in the neighborhood	12.3
Fear of going out at night	5.5
Personal Health	
Anxiety and worries	18.5
Long-term sickness	42.5
Overweight or obesity (BMI >30)	10.6
Social life	
Meeting neighbors some times a year or never	45.4
Meeting relatives, some times a month	22.9
Political activity	
Not active in a political party	94.0
Not active in political discussions	23.5
Economic resources	
Economic crises last 12 month	11.3
No cash margin (15000 SEK)	7.60
Political resources	
No possibility to appeal a governmental decision	22.3
Victimization	
Violence	2.4

TABLE 3 Demographic characteristics of the participants in 1998

	All (%)
Sex	
Men	50.1
Women	49.9
Age	
18-24	11.5
25-30	11.9
31-40	22.3
41-50	23.2
51-65	26.8
66-70	4.2
Household	
Single adult	25.8
One adult + child(ren)	4.3
Two adult	34.6
Two adult + child(ren)	35.2
SES	
Higher managerial	10.3
Middle managerial	15.6
Lower managerial	10.9
Skilled manual	12.1
Unskilled manual	16.2
Self-employed	6.3
Students	8.0
Other	20.5
Position on labormarket	
Full time	45.3
Part time	12.2
Unemployed	6.6
Student	11.2
Retired	11.4
Other	13.2
Ancestral homeland	
Nordic	91.5
Other	8.5

TABLE 4 Prevalence and persistence in 1998 and in 2006

	1998	2006
Deprivation poor (14 indicators)	12.9	9.6
Income poor	13.0	9.5

TABLE 5 Odds ratio estimates of the risk of having various bad living conditions in 2006

	Independent variable Deprivation poverty		
Dependent variable Living conditions 2006	OR [crude] (95%CI)	OR [adjusted] (95%CI)	OR [adjusted] (95%CI)
Deprivation poor 2006 (14 indicators)	6.82***	4.63***	-
Housing facilities and neighborhood environment			
Crowded Housing	3.59***	2.39***	1.86**
Common with vandalism in the neighborhood	2.15***	1.85**	1.50*
Fear of going out at night	1.53	1.14	1.05
Personal health			
Anxiety and worries	1.85***	1.36	1.11
Long-term sickness	0.97	1.27	0.97
Overweight or obesity (BMI)	1.19	1.07	1.32
Social life			
Meeting neighbors some times a year or never	1.48**	1.07	1.06
Meeting relatives, some times a month	1.09	1.11	1.11
Political activity			
Not active in a political party	1.75	1.14	1.11
Not active in political discussions	1.13	1.04	1.02
Economic resources			
Economic crises last 12 month	5.64***	4.26***	2.57***
No cash margin (15000 SEK)	5.20***	3.29***	1.97**
Political recourses			
No possibility to appeal a governmental decision	1.24	1.12	1.12
Victimization			
Violence	2.66**	1.66	1.31

Significant estimators, p-values: *** $p < 0.001$; ** $p < 0.01$; *$p < 0.05$

[b] Estimates from a logistic regression model ('adjusted') including the indicator of poverty (deprivation poverty in 1998) and confounders (sex, age, household, SES, Position on the labor market and ancestral homeland)

[c] Estimates from a logistic regression model ('adjusted') including the indicator of poverty (deprivation poverty in 1998) , the confounders (sex, age, household, SES, Position on the labor market position and ancestral homeland) and the indicator of poverty (deprivation poverty in 2006)

TABLE 6 Odds ratio estimates of the risk of having various bad living conditions in 2006

Dependent variable, Living conditions 2006	OR [crude] (95%CI)	OR [adjusted] (95%CI) [a]	OR [adjusted] (95%CI) [b]
	Independent variable		
	Income poverty		
Income poor 2006	4.08***	3.07***	-
Housing facilities and neighborhood environment			
Crowded Housing	3.37***	1.40	1.16
Common with vandalism in the neighborhood	1.69**	1.22	1.12
Fear of going out at night	0.89	0.74	0.67
Personal health			
Anxiety and worries	1.19	0.85	0.76
Long-term sickness	0.80	0.91	0.89
Overweight or obesity (BMI)	0.82	0.83	0.81
Social life			
Meeting neighbors some times a year or never	1.94***	1.34	1.43*
Meeting relatives, some times a month	1.09	0.93	0.97
Political activity			
Not active in a political party	1.09	0.74	0.68
Not active in political discussions	0.90	1.03	0.96
Economic resources			
Economic crises last 12 month	2.02***	1.36	1.17
No cash margin (15000 SEK)	2.13**	1.39	1.25
Political resources			
No possibility to appeal a governmental decision	1.34	1.54*	1.46*
Victimization			
Violence	2.16*	1.53	1.42

Significant estimators, p-values: *** $p < 0.001$; ** $p < 0.01$; *$p < 0.05$

[b] Estimates from a logistic regression model ('adjusted') including the indicator of poverty (income poverty in 1998) and confounders (sex, age, household, SES, Position on the labor market and ancestral homeland)

[c] Estimates from a logistic regression model ('adjusted') including the indicator of poverty (income poverty in 1998) , the confounders (sex, age, household, SES, Position on the labor market and ancestral homeland) and the indicator of poverty (income poverty in 2006)