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**Chronic Poverty, Poverty Dynamics, and Vulnerability:
Mexico 2006-2010**

**Gerardo Franco Parrillat, Víctor Hugo Pérez e
Isidro Soloaga**

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CHRONIC POVERTY, POVERTY DYNAMICS AND VULNERABILITY: MEXICO 2006-2010.

Resumen

La aplicación del método de análisis de transiciones a estados de pobreza/no pobreza para el caso de México y los años 2006-2010 muestran que en ese periodo entre el 27% y el 32% de la población se encontró en una situación de pobreza crónica (Tpp), entre el 42% y el 47% en situación de no pobreza sostenible (Tnn) en tanto que entre el 12% y 15% se encontraba en movilidad descendente (Tnp), pasando a estados de pobreza, y entre el 10% y el 12% se encontraba en movilidad ascendente (Tpn), saliendo de estados de pobreza. Se encontró que la principal similitud entre la población Tpp y Tnp es que ambos carecen de acceso a salud, seguridad social y a alimentación en una sustancial mayor proporción que el resto de la población, implicando que es la vulnerabilidad ante situaciones de crisis la que hace permanecer a la población en estados bajos de bienestar.

Abstract

Through the application of poverty transition analysis for years 2006-2010, the paper found that between 27% and 32% of the Mexican population could be considered as chronically poor (Tpp), and that between 42% and 47% could be considered as sustainable not poor (Tnn). In turn, between 12% and 15% could be considered entering poverty in a downward mobility phase (Tnp), and between 10% and 12% could be considered leaving poverty in an upward mobility phase (Tpn). Populations in Tpp and Tnp status are mostly characterized by their lacking of access to health, to social security, and food on a regular basis. All of these seem to imply that it is vulnerability to idiosyncratic or systemic crisis what keep them in a low well-being situation.

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Keywords: Poverty, chronic poverty, poverty transitions, vulnerability, mobility, Mexico.

Authors:

Gerardo Franco Parrillat (gfp680512@gmail.com)

Víctor Hugo Pérez (victorh.perez@gmail.com)

Isidro Soloaga (isidro.soloaga@ibero.mx)

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POVERTY DYNAMICS AND VULNERABILITY: MEXICO 2006-2010¹.

1.-Introduction

In this paper we apply Lanjouw, Luoto and McKenzie's (2011) methodology to estimate movements out or into poverty in Mexico during 2006-2010. This will allow us to evaluate poverty and vulnerability dynamics, and to identify main factors that are correlated to the different households' trajectories. A similar analysis for the 2008-2010 periods was done previously in Franco (2011), work that we extend here.

2.-Poverty measurement in Mexico.

In Mexico, poverty is officially defined in the following way: "A person is considered to be multidimensional poor when the exercise of at least one of her social rights is not guaranteed and if she also has an income that is insufficient to buy the goods and services required to fully satisfy her needs."(CONEVAL, 2009).

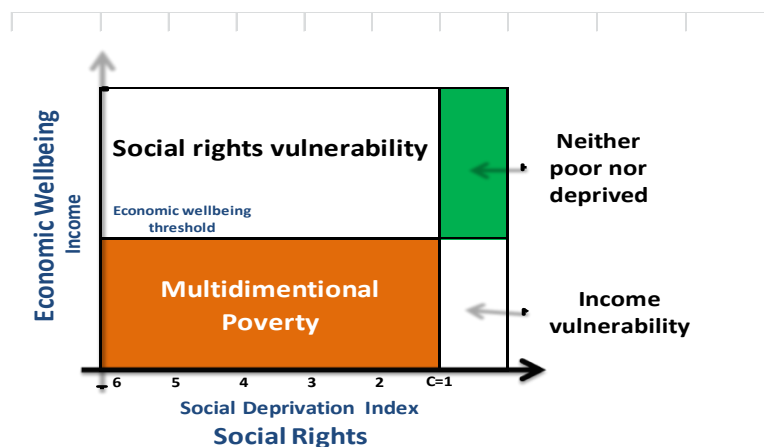
We follow here CONEVAL's presentation, which states that poverty measurement methodology should address two problems: the identification of poor people and the aggregation of poor people into a summary measure. CONEVAL's methodology approaches these problems in three stages. The first identifies if a person is socially deprived, that is, if she is deprived in any of the following six indicators: educational gap, access to health services, access to social security, quality and spaces of the dwelling, access to basic services in the dwelling and access to food. In the second stage, CONEVAL identifies whether or not that person's income is sufficient to afford the cost of a given basket of goods and services. Finally, a person is identified as multidimensional poor if she is socially deprived in at least one her social rights and her income is below the income threshold.

¹ The paper benefited from comments received from Susan Parker, participants at UNDP-CIDE's seminar in February 2013, participants at Ibero's Department of Economics Seminar Series in May 2013 and from an anonymous reviewer. The usual disclaims apply.

CONEVAL establishes two wellbeing thresholds to identify the population that does not have sufficient resources to acquire the necessary goods and services to satisfy its needs. The first is composed by a food as well as a non-food basket and is called the Economic Wellbeing Line (denoted by EWL). The second threshold is the monetary equivalent of a food-only basket, and is called the Minimum Wellbeing Line (denoted by MWL), which corresponds to a minimum income to ensure adequate nutrition. On the other hand, there are two steps to identify deprivation in the space of social rights: 1st, identification of deprivation for specific indicators. For each of the six social indicators a dichotomous variable is generated that makes it possible to determine whether a person is deprived in the corresponding dimension. Each one of these indicators takes the value one when an individual is deprived, and zero otherwise. 2nd, construction of the social deprivation index. This index is constructed for each person as the sum of the six indicators associated with social deprivation. The index can take values from 0 to 6.

According to the definition of multidimensional poverty, it is necessary to consider simultaneously both dimensions in order to identify the multidimensional poor population (see Figure 1). Figure 1 also shows two additional categories that assess vulnerability. People not having deprivation in social rights but whose income level below the EWL, or, conversely, people whose income level is above the EWL but experience deprivation in at least on social dimension are considered to be income-vulnerable or access to social rights-vulnerable, respectively. The fourth group is comprised by that part of the population that is neither poor nor vulnerable.

Figure 1. CONEVAL's Multidimensional Poverty Definition

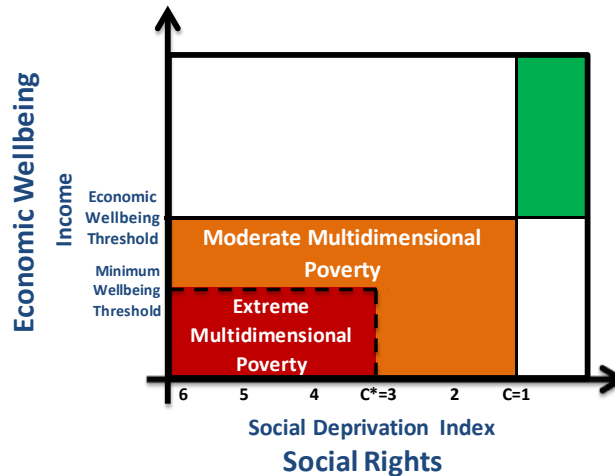


Note: C=1 is the Deprivation Threshold, which indicates that the individual experiences deprivation in at least one of her social rights.

Source: CONEVAL (2010).

Figure 2 shows how moderate and extreme multidimensional poverty levels are defined. The latter requires deprivation in three or more social rights in addition to an income inferior to the Minimum Wellbeing Line.

Figure 2. Moderate and Extreme Multidimensional Poverty according to CONEVAL



Note: C=1 is the Deprivation Threshold, which indicates that the individual experiences deprivation in at least one of her social rights. C*=3 is the Extreme Deprivation Threshold, which indicates that the individual experiences deprivation in three or more of her social rights.

Source: CONEVAL (2010).

Thus, poverty levels in Mexico are officially measured with a combination of income (either below the EWL or the MWL) and the number of social rights the person has not access to.

3.- Poverty transition matrices

Vulnerability to poverty dynamics can be expressed through a transition matrix, in which rows indicate poverty condition in year $t=1$ and columns poverty conditions in $t=2$.

Table1. Poverty transition matrix

Poverty Status in $t=1$	Poverty Status in $t=2$		
	Poor	Non-Poor	Total
Poor	T_{pp}	T_{pn}	P_1
Non-Poor	T_{np}	T_{nn}	$1-P_1$
TOTAL	P_2	$1-P_2$	1

Source: author's elaboration.

Table 1 shows a transition matrix for the initial period ($t=1, t1$ from now on) and the final period ($t=2, t2$ from now on). T_{pp} , T_{pn} , T_{np} y T_{nn} , are elements that show poverty transitions,

where *pp* indicates that the people (or the household) were in poverty in both periods, *nn* indicates out of poverty in both periods, *pn* poverty to non-poverty transition, and *np* non poverty to poverty transition). P_0 and P_1 represent poverty incidence in $t=1$ and $t=2$, respectively. The matrix can be adapted to any definition of poverty and/or vulnerability defined by CONEVAL.

4.-Methodology.

This research seeks to explain intra-generational mobility by means of estimating a transition matrix for poverty and vulnerability to poverty. It uses cross section data coming from household surveys for years 2006, 2008 and 2010 by adapting to multidimensional poverty transitions Lanjouw, Luoto and Mckenzie's (2011) methodology developed for FTGO transitions². To illustrate the methodology, let's define ENIGH 2008 as Et_1 and ENIGH 2010 as Et_2 . Both surveys capture all the needed variables for the same population and are representative at the national level, and for rural and urban areas. Let y_{ij} be income per capita for household i in time j , and X_{i1} a vector of observed household characteristics in Et_1 and Et_2 . Vector X_{i1} is comprised by a set of time-fixed variables, such as religion, ethnicity, and some household head related characteristics, such as age, sex, and education. Considering these variables, the linear projection of income in Et_1 , that is y_{i1} on x_{i1} , is given by:

$$y_{i1} = \beta_1' x_{i1} + e_{i1} \quad (1)$$

In a similar way, we define X_{i2} as a vector of households' characteristics in t_2 that are observed in Et_1 and in Et_2 . The linear projection of income in t_2 , is given by

$$y_{i2} = \beta_2' x_{i2} + e_{i2} \quad (2)$$

In Mexico, the income vulnerability threshold is given by the official Economic Wellbeing Line (EWL), which is a poverty line that includes, besides food expenditures, also expenditures on cloths, transportation, and health. We need to take also into consideration six social rights as indicated by the multidimensional characteristics of poverty measures in Mexico. We denote this with W_{i1}^t , a vector of 6 dichotomic variables, each one taking value 1 when a person is deprived of that given right, and 0 otherwise. If the trace of W_{i2} and W_{i2}^t is equal or greater than 1, this is an indication that the person is vulnerable in social rights in t_2 . That is, as an example, an expression like equation 3 below allows us to estimate what proportion of the population is multidimensional poor in t_2 , that is, deprived of at least one social right and with an

²We follow Lanjouw, Luoto y Mckenzie's presentation, which is modified to incorporate multidimensional poverty measures.

income below WEL--indicated here by z , but that in t_1 was not income vulnerable, which is indicated by the condition $y_{i1} > z$.

$$\Pr(y_{i1} > z, Tr(W_{i2}W_{i2}^t) \geq 1 | y_{i2} < z, Tr(W_{i2}W_{i2}^t) \geq 1) \quad (3)$$

Other trajectories could also be estimated. For instance, equation 4 allows to estimate what proportion of the population that was income vulnerable in t_1 (indicated by $y_{i1} < z$) was not in multidimensional poverty in t_2 (indicate by two conditions $y_{i2} > z$ and no social deprivations in t_2)

$$\Pr(y_{i1} < z, Tr(W_{i2}W_{i2}^t) < 1 | y_{i2} > z, Tr(W_{i2}W_{i2}^t) < 1) \quad (4)$$

Equation (4) can be rewritten as:

$$\Pr(e_{i1} < z - \beta_1'x_{i1}, Tr(W_{i2}W_{i2}^t) < 1 | e_{i2} > z - \beta_2'x_{i2}, Tr(W_{i2}W_{i2}^t) < 1) \quad (5)$$

Equation (5) shows that the transition probability depends on the joint distribution of e_{i1} and e_{i2} , which captures the correlation of those parts of y_1 and y_2 not explained by the variables contained in vectors x_1 and x_2 . Mobility would be greater the lower the correlation between e_{i1} and e_{i2} . Extreme cases will be given by situations where e_{i1} and e_{i2} are either orthogonal to each other or have correlation equals to one.

When panel data are not available, we are not able to observe y_{i1} and y_{i2} for the same household. Nonetheless, transitions can be estimated by means of a pseudo panel data approach. Under the assumption that the underlying population in E_{t1} y E_{t2} is the same, and that the e_{i1} and e_{i2} correlation is not negative, Lanjouw, Luoto and Mckenzie (2011) show the validity of the following theorem for the case of poverty being measured as FGT0:

Theorem 1. When there is no correlation between e_{i1} and e_{i2} , that is, when $Corr(e_{i1}, e_{i2}) = 0$, the upper level limit for transitions out of poverty between t_1 and t_2 is given by:

$$\Pr(y_{i1}^{2U} < z \text{ jointly with } y_{i2} > z) = \Pr(e_{i1} < z - \beta_1'x_{i2}) \Pr(e_{i2} > z - \beta_2'x_{i2}) \quad (6)$$

In turn, the upper level limit for transitions into poverty between t_1 and t_2 is given by:

$$\Pr(y_{i1}^{2U} > z \text{ jointly with } y_{i2} < z) = \Pr(e_{i1} > z - \beta_1'x_{i2}) \Pr(e_{i2} < z - \beta_2'x_{i2}) \quad (7)$$

In these formulations $y_{i1}^{2U} = \beta_1'x_{i2} + e_{i1}$ with the supra index 2 indicating that the estimated income for t_1 is coming from E_{t2} households: β_1' are coming from estimates done in t_1 whereas the x 's are from t_2). In turn, supra index U indicates that this is the upper limit for the estimations.

The lower limit for those situations in which there are no changes in poverty status for those households that were out of poverty in t1 and t2 is given by:

$$Pr(y_{i1}^{2U} > z \text{ jointly with } y_{i2} > z) = Pr(y_{i2} > z) - Pr(y_{i1}^{2U} < z \text{ jointly with } y_{i2} > z) \quad (8)$$

For those households that were in poverty in both periods the following expression holds:

$$Pr(y_{i1}^{2U} < z \text{ jointly with } y_{i2} < z) = Pr(y_{i2} < z) - Pr(y_{i1}^{2U} > z \text{ jointly with } y_{i2} < z) \quad (9)$$

Theorem 2. The lower limit for mobility for those in a poverty situation happens when $Corr(e_{i1}, e_{i2}) = 1$. This implies that lower limit estimates-- indicated by the supra index L-- are given by:

$$Pr(y_{i1}^{2L} < z \text{ jointly with } y_{i2} > z) = Pr(e_{i2} < z - \beta'_1 x_{i2}) - Pr(e_{i2} < z - \beta'_2 x_{i2}) \quad (10)$$

For movements out of poverty, whereas for movements into poverty we have:

$$Pr(y_{i1}^{2L} > z \text{ jointly with } y_{i2} < z) = Pr(e_{i2} < z - \beta'_2 x_{i2}) - Pr(e_{i2} < z - \beta'_1 x_{i2}) \quad (11)$$

In turn, the upper limit for those situations in which there are no changes in poverty status for those households that are out of poverty in t1 and in t2 is given by

$$Pr(y_{i1}^{2L} > z \text{ jointly with } y_{i2} > z) = Pr(y_{i2} > z) - Pr(y_{i1}^{2L} < z \text{ jointly with } y_{i2} > z) \quad (12)$$

whereas for those households that are in poverty situation in both periods we have:

$$Pr(y_{i1}^{2L} < z \text{ jointly with } y_{i2} < z) = Pr(y_{i2} < z) - Pr(y_{i1}^{2L} > z \text{ jointly with } y_{i2} < z) \quad (13)$$

Lanjouw, Luoto y McKenzie's (2001) approach indicates the following steps to obtain the estimates:

Step 1: Using Et_1 , we regress y_{i1}^1 on x_{i1}^1 , where the supra index 1 indicates that we only use Et_1 data. With OLS we estimate β'_1 , and obtain $\hat{\beta}'_1$ and $\widehat{y_{i1}^1} = \widehat{\beta}'_1 x_{i1}^1$. The residual is here given by:

$$\hat{e}_{i1} = y_{i1} - \widehat{y_{i1}^1} = y_{i1} - \hat{\beta}'_1 x_{i1} \quad (14)$$

Step 2: We obtain \hat{e}_{i1}^2 by taking a random sample with replacement of the \hat{e}_{i1} distribution. We estimate income for household i of Et_2 using $\hat{\beta}'_1$ from Step 1 above and adding \hat{e}_{i1}^2

$$\widehat{y_{i1}^{2U}} = \widehat{\beta}'_1 x_{i1}^2 + \hat{e}_{i1}^2 \quad (15)$$

Step 3: We estimate (6),(7),(8) y (9) using $\widehat{y_{i1}^{2U}}$ from step 2.

Paso 4: Steps 2 and 3 are done R times and the average values of these R replications are taken for (6),(7),(8) y (9) to obtain the upper limit of actual transitions (and thus, lower limit for the case of no-mobility situations). In our empirical part, we use $R=100^3$.

³Lanjouw, et al. (2012) show that results were similar for 50 and for 300 replications.

For lower limits estimations for transitions to and from poverty (and, thus, upper limits for no-change situations where the individual remains in poverty--or no-poverty--in both periods), Lanjouw et al. (2011) indicate the following steps

Step 1: Using Et1 data, estimate (1) and obtain $\hat{\beta}_1$. Estimate (2) and obtain \hat{e}_{i2}

Step 2: Using Et2 data, $\hat{\beta}_1$ and \hat{e}_{i2} estimate income level in t1 for each household in t2 as follows:

$$\hat{y}_{i1}^{2L} = \hat{\beta}_1 x_{i2} + \hat{e}_{i2} \quad (16)$$

Step 3: Estimate expressions (10), (11), (12) and (13) using \hat{y}_{i1}^{2L} from Step 2.

For upper limit estimates, use the true predicted errors for each household, which makes unnecessary to do any further calculations.

So far for the original Lanjouw et al. approach. For the Mexican case, we need to extend those calculations in order to consider the multidimensional approach used to measure poverty. As indicated above, we need to introduce the \vec{W}_{it} vector following examples shown in equations (3) y (4). Instead of extending their method to calculate deprivations in social rights, we consider here situations where \vec{W}_{it} remains fixed to the level of a given year. In our empirical application we maintain \vec{W}_{it} characteristics at their 2008 levels.

For instance, for the case of people that were vulnerable for social rights in t2, with an income level in t1 below the WEL we have:

$$\Pr(y_{i1} < z, Tr(W_{i2}W_{i2}^t) \geq 1 | \hat{y}_{i1}^2 > z, Tr(W_{i2}W_{i2}^t) \geq 1) \quad (17)$$

For the case of those people that were multidimensional poor in t2, with an income level in t1 above the WEL we have:

$$\Pr(\hat{y}_{i2}^1 > z, Tr(W_{i2}W_{i2}^t) \geq 1 | y_{i2} < z, Tr(W_{i2}W_{i2}^t) \geq 1) \quad (18)$$

Thus, we fix social rights deprivation in a given year, say t2, and then use income projections on t1 using t2 as a pivot.

5. -Reliability of estimates and robustness analysis

As indicate above, there are necessary conditions to achieve consistent estimates, which due to space limitations we only briefly summarize here

a) Populations analyzed in E_{t_1} and E_{t_2} should be the same. This condition is satisfied in our case since we use household surveys that have the same methodology (ENIGHs 2006, 2008 and 2010)

b) ε_{i1} should be independent of y_{i2} . This condition is not fulfilled under the following circumstances:

- If the error term contains an individual fixed effect. In this case, households with an income above (below) than that predicted on observed variables in t_1 , will also have an income above (below) than the predicted income in t_2 . This fixed effect tends to reduce the probability of change in poverty status. If we do not consider these fixed effects, we can overestimate changes.
- The second case shows up when there are non-transitory income shocks. In this case, a negative or positive shock could affect our estimations since $\widehat{\beta}_1$ as well as $\hat{\varepsilon}_{i1}^2$ do not capture the effects of these shocks by assuming that there are no structural changes between t_1 and t_2 .

Lanjouw et al. (2011) validated the methodology developed above by using true panel data for Vietnam and Indonesia and comparing results to those coming from pseudo panel data. A similar work done for Chile, Nicaragua and Peru, showed the same to be valid for these three Latin American countries (Lanjouw et al., 2012).

6.- Data

We estimate our model using information from Mexico's official household survey Encuesta Nacional de ingresos y Gastos de los Hogares (ENIGH) for years 2006 and 2010. These data are used to produce official poverty estimates by the Council for Social Development Policy Evaluation (Consejo Nacional de Evaluación de la Política de Desarrollo Social- CONEVAL). Poverty is measured at the household level. All income variables were expressed at their August 2008 values. We used here the official Wellbeing Line from CONEVAL. For August 2008 the values were \$2,113.86 and \$1,328.51 Mexican pesos for urban and rural areas respectively, whereas the Minimum Wellbeing Lines were set to \$978.47 and \$683.82 for urban and rural areas, respectively.

6.1 Poverty indicators 2006 – 2010

According to CONEVAL, by 2006 food-poverty levels were 13.8%, 20.7% for capacity-poverty and 42.6% for patrimony-poverty (see Table 2a). Tables 2b and 2c shows multidimensional poverty estimates for 2008 y 2010.

Table 2d compares estimates for 2008 with those for 2010. It can be seen there that 44.5% and 46.2% of the population were multi-dimensional poor respectively. The percentage of population moderate-poor increased from 33.9% to 35.8% whereas that in extreme poverty dropped by 0.2 percentage points. The percentage of population considered socially deprived dropped 4.3 percentage points, while the percentage of population considered income-vulnerable increased by 1.3 percentage points.

Table 2a						
Income poverty rates and percentage of the population under the economic wellbeing threshold in 2006						
Threshold	Official estimates		Sample used ¹		Difference	
	Percentage	Standard Error ²	Percentage	Standard Error ²	Percentage points	Significance
Income poverty						
Food poverty	13.8	0.2385	13.5	0.2389	0.3	0.3527
Capabilities poverty	20.7	0.2802	20.3	0.2816	0.4	0.3636
Patrimonial poverty	42.6	0.3423	42.4	0.3459	0.3	0.5806
Economic wellbeing*						
Economic wellbeing	11.0	0.2173	10.8	0.2171	0.2	0.4966
Minimum wellbeing	44.0	0.3449	43.8	0.3473	0.2	0.6790

* Estimates based on the available information and the methodology employed by CONEVAL for 2008 and 2010.

¹ Differences respect the official estimates are due to missing values in the variables used in the imputation models. The percentage of excluded observations in 2006 was 1.5.

² Calculation of standard errors does not consider complex survey design because required variables are not provided in the 2006 data base.

Source: elaboration of the authors using data from the Encuesta Nacional de Ingresos y Gastos de los Hogares (National Survey of Household's Income and Expenditures, ENIGH) 2006 and information from the CONEVAL's web page, www.coneval.gob.mx

Threshold/Indicator	Official estimates				Sample used ¹ (Households' Heads)		Difference (3) - (5)	
	Total		Households' Heads		Percentage	Standard error	Percentage	Significance
	Percentage	Standard error	Percentage	Standard error				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
Multidimensional poverty								
Poverty	44.5	0.4094	44.4	0.4172	44.3	0.4092	0.0	0.9581
Moderate	33.9	0.3257	33.1	0.3357	33.7	0.3394	-0.5	0.2679
Extreme	10.6	0.2978	11.2	0.3169	10.7	0.3064	0.5	0.2069
Social deprived (1 or more)	33.0	0.3317	32.1	0.3490	31.3	0.3405	0.8	0.1046
Income deprived	4.5	0.1069	4.7	0.1322	4.8	0.1369	-0.2	0.3286
Neither poor nor deprived	18.0	0.2218	18.9	0.2581	19.6	0.2654	-0.6	0.0576
Poverty spaces								
Social deprivation								
Education	21.9	0.2085	33.2	0.3841	32.5	0.3823	0.6	0.1514
Health services	40.8	0.3819	38.6	0.4338	37.8	0.4225	0.8	0.1527
Social security	65.0	0.3055	60.3	0.3578	59.4	0.3640	1.0	0.0427
Dwelling characteristics	17.7	0.3746	17.7	0.3745	17.0	0.3665	0.6	0.2300
Basic services	19.2	0.4917	19.2	0.4916	18.6	0.4905	0.6	0.4024
Food security	21.7	0.3593	21.7	0.3592	21.4	0.3581	0.3	0.5655
Economic wellbeing								
Minimum wellbeing	16.7	0.3414	16.7	0.3413	16.1	0.3333	0.7	0.1658
Economic wellbeing	49.0	0.4071	49.0	0.4071	49.1	0.3987	-0.1	0.8141

¹ Differences respect the official estimates are due to missing values in the variables used in the imputation models. The percentage of excluded observations in 2008 was 1.7.
Source: elaboration of the authors using data from the Encuesta Nacional de Ingresos y Gastos de los Hogares (National Survey of Household's Income and Expenditures, ENIGH) 2008 and information from the CONEVAL's web page, www.coneval.gob.mx

Threshold/Indicator	Official estimates				Sample used ¹ (Households' Heads)		Difference (3) - (5)	
	Total		Households' Heads		Percentage	Standard error	Percentage	Significance
	Percentage	Standard error	Percentage	Standard error				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
Multidimensional poverty								
Poverty	46.2	0.6451	46.7	0.6548	46.2	0.6716	0.6	0.5450
Moderate	35.8	0.5182	35.6	0.5285	35.4	0.5459	0.1	0.8567
Extreme	10.4	0.3196	11.1	0.3410	10.7	0.3377	0.4	0.3657
Social deprivation (1 or more)	28.7	0.6696	28.9	0.6780	28.9	0.7052	0.0	0.9961
Income deprivation	5.8	0.1556	5.3	0.1636	5.5	0.1717	-0.2	0.4594
Neither poor nor deprived	19.3	0.2816	19.1	0.2915	19.5	0.2988	-0.4	0.3426
Poverty spaces								
Social deprivation								
Education	20.6	0.2880	30.0	0.5042	29.4	0.5116	0.6	0.3072
Health services	31.8	0.4166	29.1	0.4593	28.8	0.4729	0.3	0.6738
Social security	60.7	0.4905	59.0	0.5094	58.3	0.5253	0.7	0.3199
Dwelling characteristics	15.2	0.3880	15.2	0.3879	14.9	0.3919	0.3	0.5302
Basic services	16.5	0.4997	16.5	0.4997	15.6	0.4986	0.9	0.2097
Food security	24.9	0.7202	24.9	0.7202	25.1	0.7507	-0.2	0.8375
Economic wellbeing								
Minimum wellbeing	19.4	0.4323	19.4	0.4323	18.8	0.4258	0.6	0.3629
Economic wellbeing	52.0	0.7015	52.0	0.7015	51.6	0.7233	0.4	0.6948

¹ Differences respect the official estimates are due to missing values in the variables used in the imputation models. The percentage of excluded observations in 2008 was 3.1.
Source: elaboration of the authors using data from the Encuesta Nacional de Ingresos y Gastos de los Hogares (National Survey of Household's Income and Expenditures, ENIGH) 2010 and information from the CONEVAL's web page, www.coneval.gob.mx

Indicator	2008		2010		Difference	
	%	Millions of persons	%	Millions of persons	Percentage points	Millions of persons
Multidimensional poverty	44.5	48.8	46.2	52.0	1.7	3.2
Moderate	33.9	37.2	35.8	40.3	1.9	3.1
Extreme	10.6	11.7	10.4	11.7	-0.2*	0.0
Social deprivation (1 or more)	33.0	36.2	28.7	32.3	-4.3	-3.9
Income deprivation	4.5	4.9	5.8	6.5	1.3	1.6
Neither poor nor deprived	18.0	19.7	19.3	21.8	1.3	2.1
* Difference not statistically significant						
Source: elaboration of the authors using information from CONEVAL's web page www.coneval.gob.mx .						

6.2 Changes in social deprivation and income indicators

Between 2008 and 2010, only the indicator that follows population's access to food increased, while deprivation of access to all the other social rights decreased (see Table 3). In the same period, the percentage of population with income below WEL and MWL increased from 49% increased to 52% and from 16.7% a 19.4%, respectively.

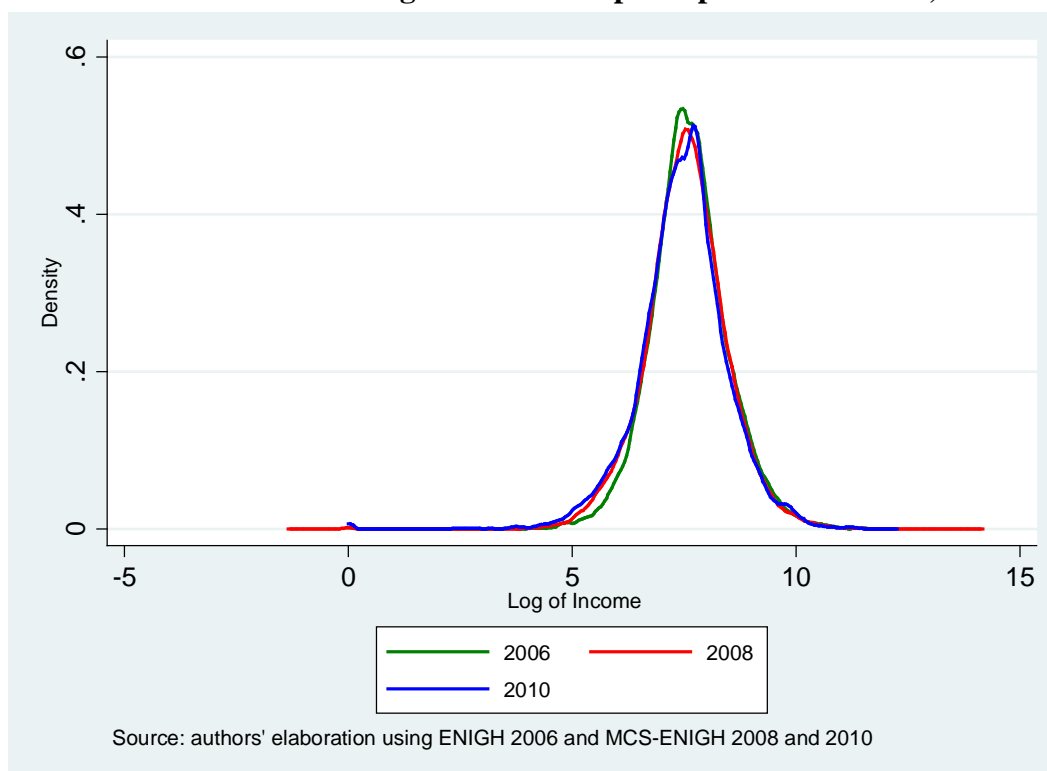
Table 3
Lack of access to social rights. 2008 and 2010. in % and in millions of persons.

Deprivation indicators ¹	2008		2010		Difference	
	%	Millions of persons	%	Millions of persons	Percentage points	Millions of persons
Social deprivation						
Education	21.9	24.1	20.6	23.2	-1.3	-0.9
Health services	40.8	44.8	31.8	35.8	-9.0	-9.0
Social security	65.0	71.3	60.7	68.3	-4.3	-3.0
Calidad y espacios de la vivienda	17.7	19.4	15.2	17.1	-2.5	-2.3
Dwelling characteristics	19.2	21.1	16.5	18.5	-2.7	-2.6
Food insecurity	21.7	23.8	24.9	28.0	3.2	4.2
Economic wellbeing						
Minimum economic wellbeing	16.7	18.4	19.4	21.8	2.7	3.4
Economic wellbeing	49.0	53.7	52.0	58.5	3.0	4.8

¹ The definition of each of these indicators may be find in CONEVAL (2010).
Source: elaboration of the authors using information from CONEVAL's web page, ww.coneval.gob.mx

Graph 1 shows the distributions for the log of income for years 2006, 2008 and 2010. It can be seen there that it seems like the distribution remains fairly similar during these years, although that of 2006 looks a bit more concentrated.

Graph 1. Kernel densities of the logarithm of real per capita income 2006, 2008 and 2010



6.4 Variables used

Following what is indicated in the literature, we selected a set of variables that can be considered as time-invariant and were captured in all the three surveys used here. In addition we use some slow-to-change variables such as household size and the proportion of female household heads⁴. Following Lanjouw, et al. (2011) the regressions used do not intend to explain household income, but rather to estimate income with a high Rsquared. To assess the robustness of different approaches, we present a set of three estimations (see below).

We selected household head-related variables (sex, age, schooling, and occupation among others), household composition variables (hh size, dependency ratio, among others), house characteristics (type of ownership, equipment, rural or urban) and context variables related to some municipal level characteristics (percentage of students that approved the general test called ENLACE administered by the Ministry of Education, and the percentage of houses with access to public services). We have also included fixed effect at the State level (there are 32 States in Mexico, including Mexico City's district).

In their five validation studies with actual panel data, Lanjouw and collaborators found that actual numbers from panel data were closer to the upper level estimates from pseudo panels. Thus, to easy the presentation, in the following text we use these estimates as our preferred ones. Nonetheless, all tables present also lower limit estimates.

Table 4 shows the three alternative models used to estimate log of income. The main difference among these models is the criterion to include or exclude variables. In "Model 1" we use variables in such a way to maximize the adjusted R-squared of the regression, without considering if their means were the same across the years.⁵ In "Model 2", we also wanted to maximize adjusted R-squared but we used an iterative process in order to keep only those variables that were statistically significant at 5%. In "Model 3" we have used only those variables whose means were statistically the same across the three years. Although we present poverty transitions from these three models, to easy the presentation, in the text we only describe those coming from our preferred model ("Model 1")

The dependent variable is the log of income per capita at August 2008 prices. We follow CONEVAL and use its adult equivalency scale.

⁴See (Lanjouw, Luoto, & McKenzie, 2011) for a more detailed discussion on variable selection.

⁵ In Annex 2, Table A 2.1 we present mean values and tests of means for all variables.

Table 4. Estimated regressions for income imputations

Regression models of the per capita real income (august 2008 prices) 2006, 2008 and 2010

Year	Model 1 ^a			Model 2 ^b			Model 3 ^c		
	2006	2008	2010	2006	2008	2010	2006	2008	2010
Household's head characteristics									
Female head=1	-0.054 (3.12)**		-0.069 (6.09)**			-0.064 (5.42)**	-0.087 (5.01)**		
Years of formal education	0.027 (16.39)**	0.03 (26.72)**	0.034 (27.46)**	0.02 (11.42)**	0.025 (21.16)**	0.028 (21.23)**	0.028 (14.84)**		
Literacy=1							0.124 (7.07)**	0.108 (5.91)**	
Age groups									
18 to 29 years old=1									-0.251 -1.65
30 to 44 years old=1									-0.419 (2.79)**
45 to 64 years old=1									-0.423 (2.81)**
65 to 97 years old=1									-0.372 (2.47)*
Age (years)		0.001 (2.51)*						-0.001 (3.43)**	
Occupation sector									
Cat. 1=1				0.378 (8.90)**	0.337 (11.99)**	0.32 (7.62)**	0.49 (10.93)**	1.078 (34.03)**	0.976 (19.81)**
Cat. 2=1				0.146 (4.35)**	0.099 (4.82)**	0.154 (6.18)**	0.223 (6.19)**	0.806 (35.54)**	0.817 (29.14)**
Cat. 3=1				0.087 (3.14)**	0.02 -1.12	0.061 (2.50)*	0.106 (3.12)**	0.505 (23.61)**	0.456 (16.65)**
Cat. 4=1				-0.155 (6.16)**	-0.331 (19.87)**	-0.244 (11.89)**	-0.128 (4.66)**	-0.051 (2.71)**	-0.034 -1.52
Cat. 5=1				0.002 -0.07	-0.144 (8.92)**	-0.027 -1.3	-0.01 -0.36	0.188 (9.70)**	0.278 (11.75)**
Cat. 6=1				0.051 -1.09	-0.012 -0.56	0.068 (2.40)*	0.05 -1.01	0.304 (12.39)**	0.313 (9.20)**
Cat. 7=1				0.015 -0.67	-0.12 (8.01)**	-0.015 -0.49	0.023 -0.95	0.139 (7.88)**	0.162 (7.04)**
Cat. 8=1				-0.007 -0.31	-0.133 (9.20)**	-0.034 -1.7	-0.009 -0.36	0.135 (7.84)**	0.193 (8.28)**
Cat. 9=1				-0.045 -1.86	-0.194 (11.00)**	-0.034 -1.49	-0.059 (2.28)*	0.088 (4.46)**	0.154 (6.00)**
Characteristics of the dwelling									
Floors material									
Concrete=1	0.103 (4.09)**	0.053 (2.57)*		0.149 (5.93)**	0.072 (3.66)**	-0.007 -0.3	0.092 (3.27)**		
Wood, marble, carpet or others=1	0.177 (6.10)**	0.143 (6.19)**		0.218 (7.47)**	0.181 (8.15)**	0.055 (2.27)*	0.244 (7.60)**		
Ceilings material									
Wood or tiles=1	-0.036 -1.25		0.017 -0.66						
Concrete or beams=1	0.048 (2.75)**		0.05 (3.73)**						
Wall material									
Wood or adobe=1		-0.03 -1.03							
Bricks, block or concrete=1		0.057 (2.02)*							
Water supply									
Tanker truck=1						0.108 -1.95	-0.027 -0.42	0.147 (3.00)**	0.106 -1.62
Brought from another house=1						0.119 (3.04)**	0.122 (2.53)*	0.134 (3.43)**	0.153 (3.11)**
Public faucet or hydrant=1						-0.082 -1.14	-0.312 (3.27)**	-0.027 -0.33	-0.022 -0.29
Public service, out of the dwelling, but inside the property=1						0.064 (2.66)**	0.087 (3.18)**	0.062 (2.97)**	0.097 (3.32)**
Public service inside the dwelling=1						0.107 (3.87)**	0.068 (2.39)*	0.097 (4.30)**	0.17 (5.14)**
Water supply frequency									
Daily=1	0.092 (4.01)**	0.026 -1.61	0.054 (2.42)*	0.086 (3.56)**	0.04 (2.39)*				
Every other day=1	0.085 (3.21)**	0.002 -0.1	0.074 (2.71)**	0.076 (2.77)**	0.009 -0.46				
Twice a week or any other=1	0.078 (2.69)**	-0.048 (2.16)*	0.113 (4.08)**	0.074 (2.50)*	-0.031 -1.37				

Continues

Number of rooms								0.026	0.029
								(7.37)**	(7.19)**
Number of lightbulbs	0.016	0.017	0.017	0.016	0.017	0.017	0.016	0.017	0.017
	(8.99)**	(16.21)**	(12.20)**	(8.99)**	(16.21)**	(12.20)**	(8.99)**	(16.21)**	(12.20)**
The house belong to someone in the household or is being paid==1	-0.03			-0.072	-0.039		-0.055		
	-1.96			(5.16)**	(3.98)**		(3.72)**		
Equipment of the dwelling									
Has a toilet==1		0.055							
		(2.73)**							
Shower in the dwelling==1	0.052			0.069			0.126	0.12	
	(3.12)**			(3.99)**			(8.71)**	(6.41)**	
Water deposit in the dwelling==1	0.031	0.037			0.03				
	(2.25)*	(3.84)**			(3.05)**				
Water pump in the dwelling==1	0.078			0.087			0.122		
	(4.66)**			(5.02)**			(6.73)**		
Gas tank in the dwelling==1	0.071	0.092	0.086	0.063	0.09	0.088	0.126	0.224	0.201
	(3.27)**	(6.25)**	(2.82)**	(2.83)**	(5.83)**	(2.81)**	(5.40)**	(12.68)**	(9.74)**
Air conditioning in the dwelling==1	0.181	0.116	0.042	0.158	0.107				
	(3.74)**	(7.96)**	(2.45)*	(3.18)**	(7.18)**				
Heating system in the dwelling==1		0.223	0.187		0.2	0.173			
		(7.40)**	(4.52)**		(6.51)**	(4.45)**			
Water tank in the roof==1		0.031			0.054				
		(3.00)**			(5.19)**				
Underground cistern in the dwelling==1		0.076	0.045		0.076		0.128	0.129	
		(6.83)**	(2.62)**		(6.62)**		(10.08)**	(7.71)**	
Bolier in the dwelling==1		0.027	0.057			0.069	0.165	0.178	
		(2.38)*	(3.59)**			(4.15)**	(12.73)**	(10.71)**	
Sink in the dwelling==1			0.038						
			(2.29)*						
Washbasin in the dwelling==1							0.037		
							(2.61)**		
Household characteristics									
At least one member has a job==1	-0.126	-0.125	-0.037						
	(5.67)**	(9.28)**	(2.04)*						
Number of women	-0.029	-0.069		-0.032					
	(4.00)**	(17.53)**		(4.62)**					
Number of children (0-11 years old)	-0.026		-0.043			-0.047	-0.117		
	(2.13)*		(3.47)**			(3.81)**	(17.95)**		
Number of members between 12 and 64 years old	-0.103		-0.094	-0.158			-0.094		
	(11.69)**		(18.76)**	(17.65)**		(18.82)**			
Number of members of 64 years old or older	-0.114			-0.184			-0.031		
	(7.26)**			(12.12)**			(2.17)*		
Number of members who receive job's income	0.054	0.049	0.108	0.112	0.014	0.108	0.055	0.069	
	(6.89)**	(13.28)**	(19.71)**	(14.39)**	(3.94)**	(19.84)**	(10.37)**	(13.77)**	
Overcrowding index ¹							-0.073		
							(6.56)**		
Age dependency ratio ²	-0.141	-0.041	-0.108	-0.254	-0.081	-0.114			
	(4.82)**	(4.17)**	(3.51)**	(13.43)**	(8.72)**	(3.72)**			
Dwellings with a high value of the age dependency ratio==1 ³				0.154					0.285
				(8.39)**					(22.85)**
Economic dependency ratio ⁴	0.603	1.211	1.132		1.335	1.128			
	(17.78)**	(59.76)**	(38.51)**		(66.39)**	(39.00)**			
Dwellings with a high value of the economic dependency ratio==1 ⁵							0.28		
							(28.41)**		
Equipment and services in the household									
Telephone line==1	0.071	0.038	0.04	0.084	0.052	0.059			
	(4.79)**	(3.74)**	(2.36)*	(5.36)**	(4.95)**	(3.38)**			
At least one member has a mobile phone==1	0.141	0.131	0.095	0.16	0.12	0.096			
	(10.45)**	(14.25)**	(6.06)**	(11.78)**	(12.95)**	(5.99)**			
Cable TV in the household==1	0.115	0.107	0.166	0.106	0.114	0.158			
	(7.51)**	(9.45)**	(11.35)**	(6.79)**	(10.08)**	(10.59)**			
Internet service in the household==1	0.097	0.081		0.075	0.062				
	(3.70)**	(5.18)**		(2.85)**	(3.96)**				
Refrigerator==1		0.071	0.058		0.104	0.084			
		(4.74)**	(3.27)**		(6.82)**	(4.73)**			
Washing machine==1		0.048	0.064	0.045		0.081			
		(5.08)**	(4.34)**	(2.78)**		(5.53)**			
Television==1	0.092	0.05	0.073	0.106	0.074		0.111	0.143	
	(3.24)**	(2.35)*	(3.40)**	(3.71)**	(3.49)**		(4.90)**	(6.18)**	

Continues

Computer==1	0.076 (4.04)**	0.062 (4.83)**	0.098 (7.60)**	0.063 (3.26)**	0.054 (4.21)**	0.087 (6.83)**			
Car or automobile==1	0.13 (8.69)**	0.095 (9.17)**	0.15 (10.37)**	0.129 (8.34)**	0.094 (8.74)**	0.139 (9.29)**	0.187 (11.62)**		
DVD player==1	0.103 (7.56)**	0.048 (5.00)**	0.054 (4.29)**	0.116 (8.21)**	0.055 (5.63)**	0.056 (4.22)**			
Blender machine==1	0.054 (2.84)**	0.031 (2.47)**		0.079 (4.07)**			0.076 (3.52)**		
Toaster==1	0.094 (5.89)**	0.093 (8.11)**	0.081 (5.77)**	0.082 (5.10)**	0.101 (8.68)**	0.082 (6.01)**			
Microwave==1	0.067 (4.92)**	0.072 (7.36)**	0.023 (-1.66)	0.059 (4.21)**	0.081 (8.23)**		0.143 (9.86)**	0.261 (24.85)**	0.246 (18.84)**
Gas or electric stove==1	0.112 (4.61)**	0.117 (6.57)**	0.14 (4.53)**		0.136 (7.67)**	0.162 (5.33)**	0.099 (3.54)**	0.234 (13.20)**	0.267 (9.31)**
Vacuum cleaner==1	0.13 (5.86)**	0.102 (5.59)**	0.17 (8.76)**	0.122 (5.42)**	0.109 (6.06)**	0.156 (8.19)**	0.288 (12.16)**		
Video game console==1	0.081 (4.23)**		0.056 (3.97)**	0.067 (3.42)**		0.049 (3.60)**	0.124 (5.88)**		
Territorial context									
Community size									
Rural communities (less than 15,000 inhabitants)==1				-0.068 (3.39)**	-0.117 (9.03)**	-0.142 (9.37)**	-0.048 (2.02)**		
15,000 to 99,999 inhabitants		0.042 (2.80)**	-0.045 (2.52)**				-0.13 (7.55)**	-0.14 (7.62)**	
2,500 to 14,999 inhabitants		-0.023 (-1.2)	-0.085 (3.92)**				-0.242 (11.37)**	-0.23 (10.53)**	
Less than 2,500 inhabitants		-0.112 (6.37)**	-0.214 (11.47)**				-0.384 (20.66)**	-0.373 (20.90)**	
Percentage of population without social security at the municipality level (2005)	-0.002 (3.79)**	-0.002 (3.13)**							
Percentage of population without sewage service/drainage service at the municipality level (2005)	-0.003 (5.87)**								
Percentage of population without toilet in the dwelling at the municipality level (2005)							-0.003 (4.23)**		
Percentage of population without electricity at the municipality level (2005)	-0.003 (5.87)**								
Infants Mortality Rate (a nivel municipal)					-0.004 (4.16)**				-0.005 (4.93)**
Patrimonial poverty rate at the municipal level (2005)		-0.005 (9.16)**							
Food poverty rate at the municipal level (2005)							-0.008 (11.77)**		
Low educational achievement in standardized tests at the municipality level (2010)		0.182 (3.28)**							
Percentage of households in which at least one person could not eat in one day (2010)			-1.693 (3.87)**			-2.362 (5.49)**			
Percentage of households in which at least one person had only one meal in a day (2010)			0.625 (3.12)**			0.856 (4.48)**			-0.211 (-1.5)
Percentage of dwellings without refrigerator at the municipality level (2010)			-0.004 (9.88)**			-0.004 (9.88)**			-0.004 (9.88)**
Percentage of a social program beneficiaries in each municipality (2008)			-3.255 (5.02)**			-2.176 (3.77)**			-4.471 (6.33)**
Population density 2005								-0.102 (6.31)**	
Constant	6.927 (128.57)**	6.255 (115.45)**	6.347 (122.21)**	7.044 (143.46)**	6.177 (198.37)**	6.308 (135.48)**	7.378 (139.19)**	6.348 (146.98)**	6.514 (41.90)**
<hr/>									
Number of variables	40	45	41	43	41	48	32	32	35
N	20,407	58,500	59,334	20,410	56,990	60,952	20,717	59,487	59,612
R² adjusted	0.623	0.541	0.518	0.616	0.541	0.523	0.562	0.426	0.395

^a Takes into account variables associated to permanent and transient income which maximized the R-squared.

^b Takes into account variables associated to permanent and transient income which maximized the R-squared, selected with step-wise methods.

^c Takes into account variables associated to permanent and transient income which maximized the R-squared and did not have significant changes in their means between 2006, 2008 y 2010.

¹ Ratio of the number of persons with respect to the number of rooms in the dwelling.

² Ratio of the number of members with 0 to 12 and 65 years old or more with respect to the total number of persons in the dwelling.

³ Households with age dependency ratio of 30 percent or greater.

⁴ Ratio of the number of members with a job with respect to the total number of persons in the dwelling.

⁵ Households with economic dependency ratio of 1/3 or greater.

Notes: Estimations made with the Módulo de Condiciones Socioeconómicas of the ENIGH. Heterokedasticity robust t-statistics in brackets: * 5% significance; ** 1% significance.

Source: authors elaboration using the Encuesta Nacional de Ingresos y Gastos de los Hogares and the Módulo de Condiciones Socioeconómicas 2006, 2008 y 2010.

Using coefficients from the 2006 regression, by incorporating random samples of the individual errors for 2008 we obtain the upper limit estimates of per capita income. That is, we estimate the 2006 income levels for those households interviewed in 2008. With this information, we calculate poverty incidence following the two wellbeing lines (MWL, and WL), as well as multidimensional poverty estimates. After this procedure, we estimate the upper limit for the observed mobility (NP to P y P to NP) between 2006 and 2008, which in turn corresponds to the lower limits for the no-change transitions (P to P and NP to NP) between 2006 and 2008. Table 5 shows each one of the estimated models altering a bit Lanjouw’s notation to make it more intuitive.

Table 5- Sketch for income transitions

Mobility	Type of bound estimated	Beta coefficients	Residuals	Households’ income at time <i>b</i> : \hat{y}_{iXa}^{bb} (*)	Multidimensional poverty
2008→2006 (Coefficients from 2006 to estimate 2006 Income with 2008 data)	Upper	y_{i2006} $= \hat{\beta}_{1,2006}x_{i2006}$ $+ \hat{e}_{i2006}$	Random selection of \hat{e}_{i2006} $= \hat{e}_{i2006_aleat}$	$\hat{y}_{i2008}^{2006,U}$	$\hat{y}_{iX2008,W2008}^{\hat{\beta}2006,U}$
	Lower	y_{i2006} $= \hat{\beta}_{1,2006}x_{i2006}$ $+ \hat{e}_{i2006}$	The same residual for 2008 is used $\hat{e}_{i2008} = y_{i2008} - \hat{\beta}_{1,2008}x_{i2008}$	$\hat{y}_{i2008}^{2006,L}$ $= \hat{\beta}_{1,2006}x_{i2008}$ $+ \hat{e}_{i2008}$	$\hat{y}_{iX2008,W2008}^{\hat{\beta}2006,L}$
2010→2008 (Coefficients from 2008 to estimate 2008 Income with 2010 data)	Upper	y_{i2008} $= \hat{\beta}_{1,2008}x_{i2008}$ $+ \hat{e}_{i2008}$	Random selection of \hat{e}_{i2008} $= \hat{e}_{i2008_random}$	$\hat{y}_{i2010}^{2008,U}$ $= \hat{\beta}_{1,2008}x_{i2010}$ $+ \hat{e}_{i2008_random}$	$\hat{y}_{iX2010,W2010}^{\hat{\beta}2008,U}$
	Lower	y_{i2008} $= \hat{\beta}_{1,2008}x_{i2008}$ $+ \hat{e}_{i2008}$	The same residual for 2010 is used $\hat{e}_{i2010} = y_{i2010} - \hat{\beta}_{1,2010}x_{i2010}$	$\hat{y}_{i2010}^{2008,L}$ $= \hat{\beta}_{1,2008}x_{i2010}$ $+ \hat{e}_{i2010}$	$\hat{y}_{iX2010,W2010}^{\hat{\beta}2008,L}$
2008→2010 (Coefficients from 2010 to estimate 2008 Income with 2008 data)	Upper	y_{i2010} $= \hat{\beta}_{1,2010}x_{i2010}$ $+ \hat{e}_{i2010}$	Random selection of \hat{e}_{i2010} $= \hat{e}_{i2010_random}$	$\hat{y}_{i2008}^{2010,U}$ $= \hat{\beta}_{1,2010}x_{i2008}$ $+ \hat{e}_{i2010_random}$	$\hat{y}_{iX2008,W2008}^{\hat{\beta}2010,U}$
	Lower	y_{i2010} $= \hat{\beta}_{1,2010}x_{i2010}$ $+ \hat{e}_{i2010}$	The same residual for 2008 is used $\hat{e}_{i2008} = y_{i2008} - \hat{\beta}_{1,2008}x_{i2008}$	$\hat{y}_{i2008}^{2010,L}$ $= \hat{\beta}_{1,2010}x_{i2008}$ $+ \hat{e}_{i2008}$	$\hat{y}_{iX2008,W2008}^{\hat{\beta}2010,L}$

(*) For multidimensional poverty, Access to social rights for \hat{y}_{iXa}^{bb} estimates were considered fixed at their level for year "a": for 2006-2008 transitions, those of 2008 (first panel), for 2008-2010 transitions, those of 2010 (second panel); for 2010-2008 transitions, those for 2008 (third panel of Table 5).

Source: Own.

For the lower limit estimates of mobility, we assumed that the error correlation between periods is 1. We model this by obtaining the residuals from 2006, which are added to the linear prediction of the income level that those households interviewed in 2008 would had have in 2006. This procedure gives the lower limit of the observed mobility (NP to P and P to NP) between 2006 and 2008, which corresponds in turn to the upper limits of the no-change transitions (P to P and NP to NP) between 2006 and 2008.

Transitions for years 2008 and 2010 were estimated in a similar way, anchoring the analysis in 2010 data ($\hat{y}_{ix2010,W2010}^{\hat{\beta}2008,U}$ y $\hat{y}_{ix2010,W2010}^{\hat{\beta}2008,L}$) or in 2008 data ($\hat{y}_{ix2008,W2008}^{\hat{\beta}2010,U}$ *and* $\hat{y}_{ix2008,W2008}^{\hat{\beta}2010,L}$).

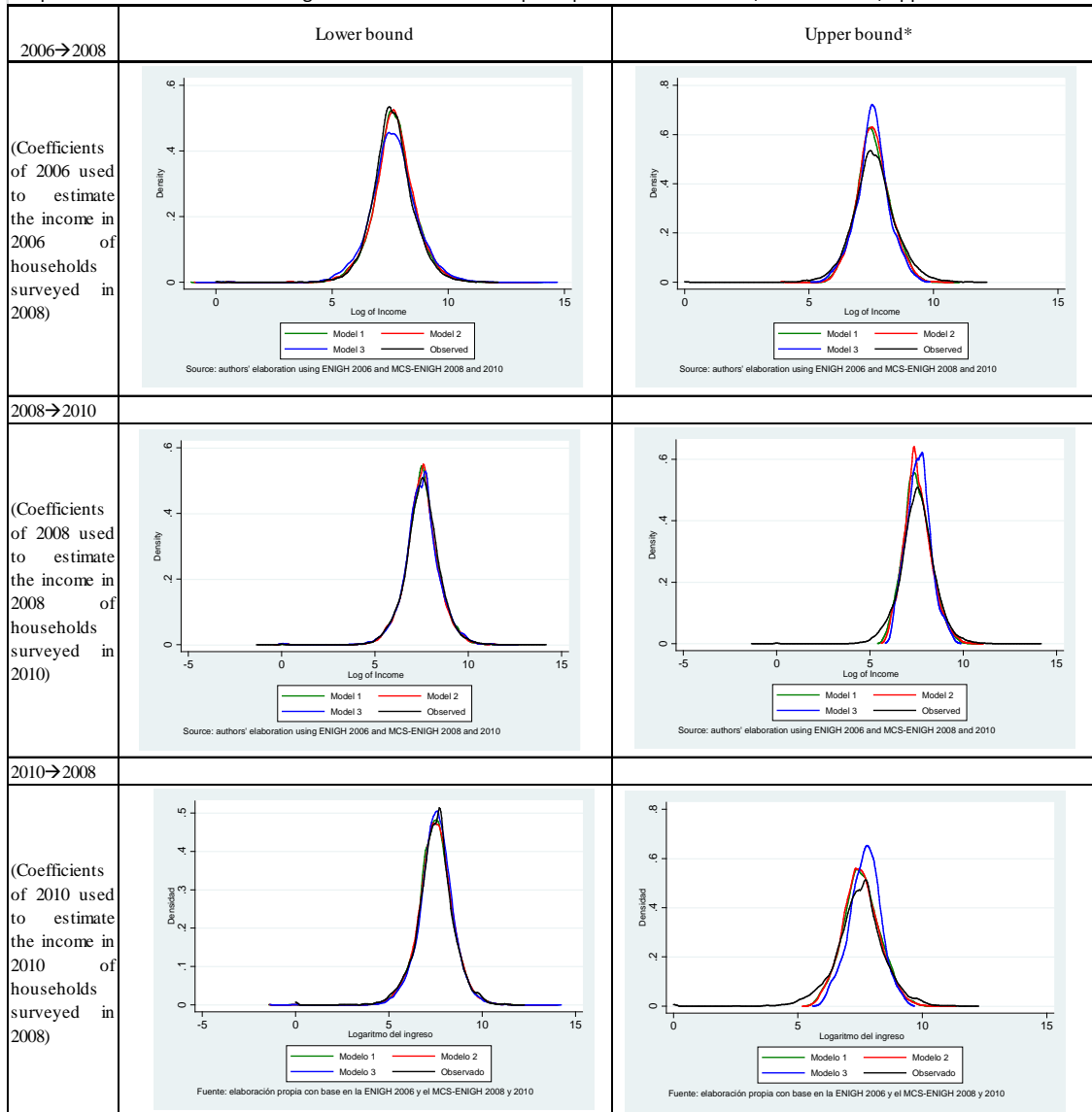
For $\hat{y}_{ix2010,W2010}^{\hat{\beta}2008,U}$ (upper limits for transitions) we used random samples from the 2008 model which were added to the linear projection of the counterfactual income that households of 2010 would have had in 2008. For lower limits ($\hat{y}_{ix2010,W2010}^{\hat{\beta}2008,L}$), to the linear projection we added the 2008 households' residuals (assuming correlation equals to 1 between both years). We estimated $\hat{y}_{ix2008,W2008}^{\hat{\beta}2010,U}$ y $\hat{y}_{ix2008,W2008}^{\hat{\beta}2010,L}$, following similar procedures. With base on the estimated income that a given households from period "a" had in period "b", identified as \hat{y}_{ixab} in Table 5, to assess multidimensional poverty we considered as fixed the lack of access to social rights in year "a" in each estimation. Thus, to estimate 2006-2008 transitions, lack of access to social rights was that of 2008 (first block of rows in Table 5). For 2010-2008 transitions, lack of access to social rights was that of 2010 (second block of rows in Table 5). Finally, for 2008-2010 transitions, lack of access to social rights was that of (third block of rows in Table 5).

7.-Results

7. 1 Poverty incidence and poverty dynamics

As indicated above, we estimate three different income models, which turned out in similar results. Graph 4 shows log of income distribution for the three years and their upper and lower limit estimates.

Graph 2. Kernel densities of the logarithm of the estimated per capita real income 2006,2008 and 2010, upper and lower bounds of mobility.



*Average of the 100 replications.

Source: author's elaboration using ENIGH 2006 and MCS-ENIGH 2008 and 2010.

Table 6 shows a comparison of poverty incidence (following both lines, WL and MWL) according to the three models. It can be seen that Model 1 estimates are somehow closer to the observed values. To easy exposition, we only present in the text results coming from this model. Results from the other two are presented in the Annex.

Table 6 Percentage of the population with income below the economic wellbeing thresholds, observed and estimated. Upper and lower bounds of social mobility. 2006-2008, 2008-2010 and 2010-2008.										
		2006-2008			2008-2010			2010-2008		
		Percentage 2006 ¹ (Observed)	Estimated percentage (2008 sample)		Percentage 2008 ¹ (Observed)	Estimated percentage (2010 sample)		Percentage 2010 ¹ (Observed)	Estimated percentage (2008 sample)	
			Lower bound	Upper bound ²		Lower bound	Upper bound ²		Lower bound	Upper bound ²
Model 1										
Economic Wellbeing	Percentage	44.0	41.1	41.3	47.5	49.4	47.2	52.7	50.1	48.7
	SE	0.3448	0.5634	0.3639	0.5465	0.8239	0.5372	1.1899	0.5380	0.3618
Minimum wellbeing	Percentage	11.0	10.5	11.1	14.2	14.8	15.9	19.2	15.9	17.5
	SE	0.2172	0.4084	0.2827	0.4488	0.5621	0.5694	0.6648	0.4769	0.2995
Model 2										
Economic Wellbeing	Percentage	44.0	40.3	40.4	47.5	48.8	44.4	52.7	49.5	48.9
	SE	0.3448	0.5505	0.3532	0.5465	0.8134	0.3365	1.1899	0.5383	0.3702
Minimum wellbeing	Percentage	11.0	10.7	10.4	14.2	14.5	13.3	19.2	16.4	17.0
	SE	0.2172	0.4171	0.2481	0.4488	0.5675	0.3087	0.6648	0.4719	0.2734
Model 3										
Economic Wellbeing	Percentage	44.0	44.1	40.9	47.5	48.7	42.7	52.7	47.5	42.6
	SE	0.3448	0.5708	0.3812	0.5465	1.1423	0.3966	1.1899	0.5540	0.3887
Minimum wellbeing	Percentage	11.0	14.0	11.1	14.2	14.6	12.9	19.2	14.1	13.7
	SE	0.2172	0.4637	0.2773	0.4488	0.5688	0.2926	0.6648	0.4464	0.3273

¹ Estimates based on the available information and the methodology employed by CONEVAL for 2008 and 2010.

² Upper bound estimates are obtained using a random selection of the target year residuals for each household in the base year, for example from 2006 residuals to 2008 households.

Notes: Standard errors shown in percentages. Observed percentages differ from those of CONEVAL due to: 1) price adjustment to keep fixed 2008 prices and 2) missing values of the variables used in the regression models (approximately 1.5 percent in 2006, 1.7 in 2008 and 3.1 in 2010).

Source: author's elaboration using the Encuesta Nacional de Ingresos y Gastos de los Hogares 2006, 2008 and 2010.

Table 7 shows poverty incidence as well as multidimensional poverty estimates for years 2008 and 2010. As indicated above, we anchored our estimates for social rights deprivation in a given year and analyze the impact of income changes over all households' type. Thus, for instance, column 7 of Table 7 shows the lower limit of poverty incidence after considering the imputed income for 2008 to those households with lack of access to at least one social right in 2010 (first row in the table), or with deprivation in at least 3 social rights (third row in the table). These percentages were 45.3 % and 9.6% respectively. By the same token, the last column in the table shows the upper limit of poverty incidence, after taking the imputed income for year 2010 for those 2008 households with lack of access to at least one social right in 2008 (first row) or with lack of access to at least three social rights in 2008 (third row) (42.5 % and 10.4% respectively). As it can be seen, although estimated poverty incidence levels are close to those observed levels, sometimes show important differences. For instance, for 2008 the ratio is 97% for poverty (42/43.4) whereas it is 92% (9.2/10) for extreme poverty.

Table 7
Multidimensional poverty and Extreme multidimensional poverty rates, observed and estimated. Upper and lower bounds of mobility. 2006-2008, 2008-2010 y 2010-2008.

		2006-2008*			2008-2010**			2010-2008*		
		Percentage 2006 ¹ (Observed)	Estimated percentage (2008 sample)		Percentage 2008 ¹ (Observed)	Estimated percentage (2010 sample)		Percentage 2010 ¹ (Observed)	Estimated percentage (2008 sample)	
			Lower bound	Upper bound ²		Lower bound	Upper bound ²		Lower bound	Upper bound ²
Model 1										
Poverty	Percentage	ND	38.0	37.1	43.4	45.3	42.0	47.7	44.9	42.5
	SE		0.5646	0.3380	0.5579	0.8690	0.5404	1.1060	0.5491	0.3081
Extreme poverty	Percentage	ND	7.6	7.4	10.0	9.6	9.2	12.1	10.7	10.4
	SE		0.3694	0.1930	0.4100	0.4530	0.1994	0.5213	0.4247	0.2295

¹ Estimates based on the available information and the methodology employed by CONEVAL for 2008 and 2010.

² Upper bound estimates are obtained using a random selection of the target year residuals for each household in the base year, for example from 2006 residuals to 2008 households.

(*) Estimates assume 2010 social deprivations fixed. (**) Estimates assume 2008 social deprivations fixed.

Notes: Standard errors shown in percentages. Observed percentages differ from those of CONEVAL due to: 1) price adjustment to keep fixed 2008 prices and 2) missing values of the variables used in the regression models (approximately 1.5 percent in 2006, 1.7 in 2008 and 3.1 in 2010).

Source: author's elaboration using the Encuesta Nacional de Ingresos y Gastos de los Hogares 2006, 2008 and 2010.

Table 8 shows the transition matrixes for years 2006-2008, 2008-2010 and 2010-2008. Following the upper limit estimates, it can be seen that about 75% of the population was found to be in the no-change situation: inTpp (population in chronic poverty) between 27.2% and 32.2%) or in Tnn (population in the no-poverty status in both years), between 42.3% and 47.1%). In turn, the remaining 25% of the population were either in a process of leaving poverty (Tpn, 9.9% and 12%) or in a process of entering poverty (Tnp, 11.9% and 15%).

It is possible to refine the analysis by identifying main characteristics for the population in the different trajectories. The full set of results is presented in Table A2.1 from the Appendix. To easy exposition main results are presented in Graph 3 (for the 2008→2006 transitions), Graph 4 (for the 2010→2008 transitions), and Graph 5 (for the 2008→2010 transitions). The graphs show that, even though lack of access to social rights are bigger in all cases for the population in chronic poverty, percentages are markedly different when comparing the population out of poverty in all years with the remaining three categories. This is another indication of how polarized the Mexican society is. The greater distances can be observed in access to social security (negative distance of 44 percentage points between the population out-of-poverty and the average of the other three categories), while housing quality and access to housing services seem to be the social rights with the smaller relative distances between these two groups (negative distance of about 20 percentage points). All these differences were statistically significant.

Table 8

Estimated transition matrices out and into multidimensional poverty. Upper and lower bounds of mobility. 2006-2008, 2008-2010 and 2010-2008.

		2006-2008*		2008-2010**		2010-2008*	
		Estimated percentage (2008 sample)		Estimated percentage (2010 sample)		Estimated percentage (2008 sample)	
		Lower bound	Upper bound ^d	Lower bound	Upper bound ^d	Lower bound	Upper bound ^d
Model 1							
Poor, Poor ¹	Percentage	35.8	27.2	42.5	32.2	40.8	30.4
	SE	0.5662	0.2690	1.0305	0.2871	0.5617	0.2344
Poor, Non-poor ²	Percentage	2.2	9.9	2.8	9.9	4.1	12.0
	SE	0.1707	0.2166	1.4773	0.4660	0.2083	0.2045
Non-poor, Poor ³	Percentage	7.1	15.8	5.0	15.7	1.6	11.9
	SE	0.2250	0.2690	0.2365	0.2871	0.1011	0.2343
Non-poor, Non-poor ⁴	Percentage	54.9	47.1	49.7	42.3	53.5	45.6
	SE	0.5564	0.2166	0.8206	0.4660	0.5506	0.2045

¹ Population in multidimensional poverty both at the base year and at the estimated year, also called "Chronically poor".

² Population in multidimensional poverty at the base year, but non-poor at the estimated year, also called "Ascending".

³ Population not in multidimensional poverty at the base year, but poor at the estimated year, also called "Descending".

⁴ Population not in multidimensional poverty neither at the base year nor at the estimated year, also called "Sustainable non-poor".

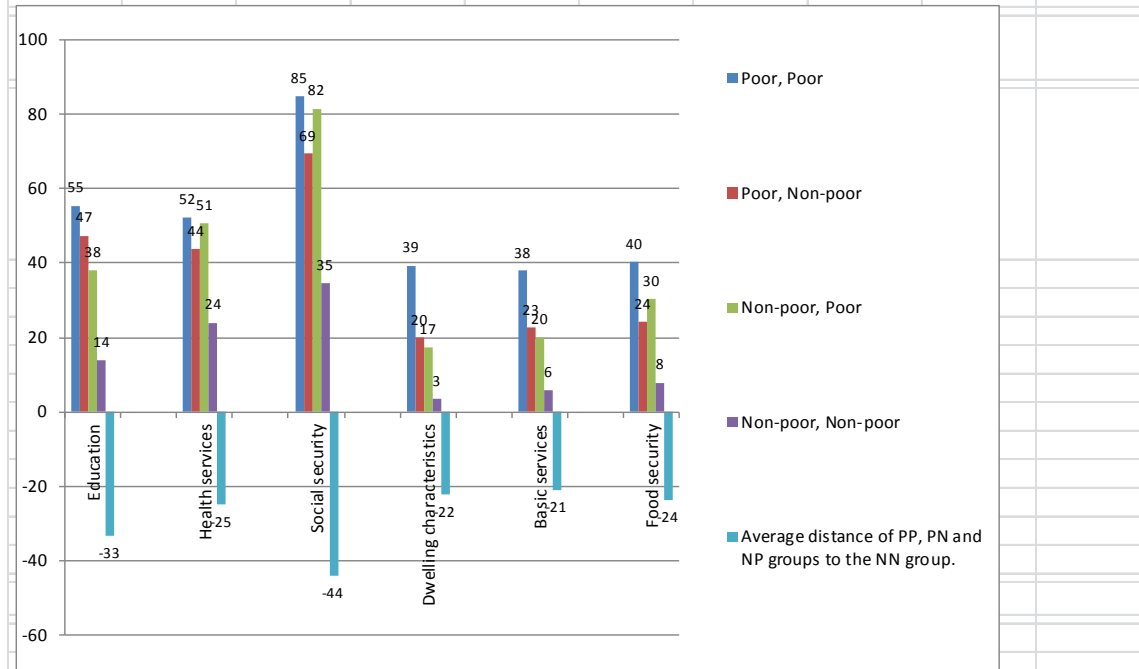
^a Upper bound estimates are obtained using a random selection of the target year residuals for each household in the base year, for example from 2006 residuals to 2008 households.

(*) Estimates assume 2010 social deprivations fixed. (**) Estimates assume 2008 social deprivations fixed.

Notes: Standard errors shown in percentages.

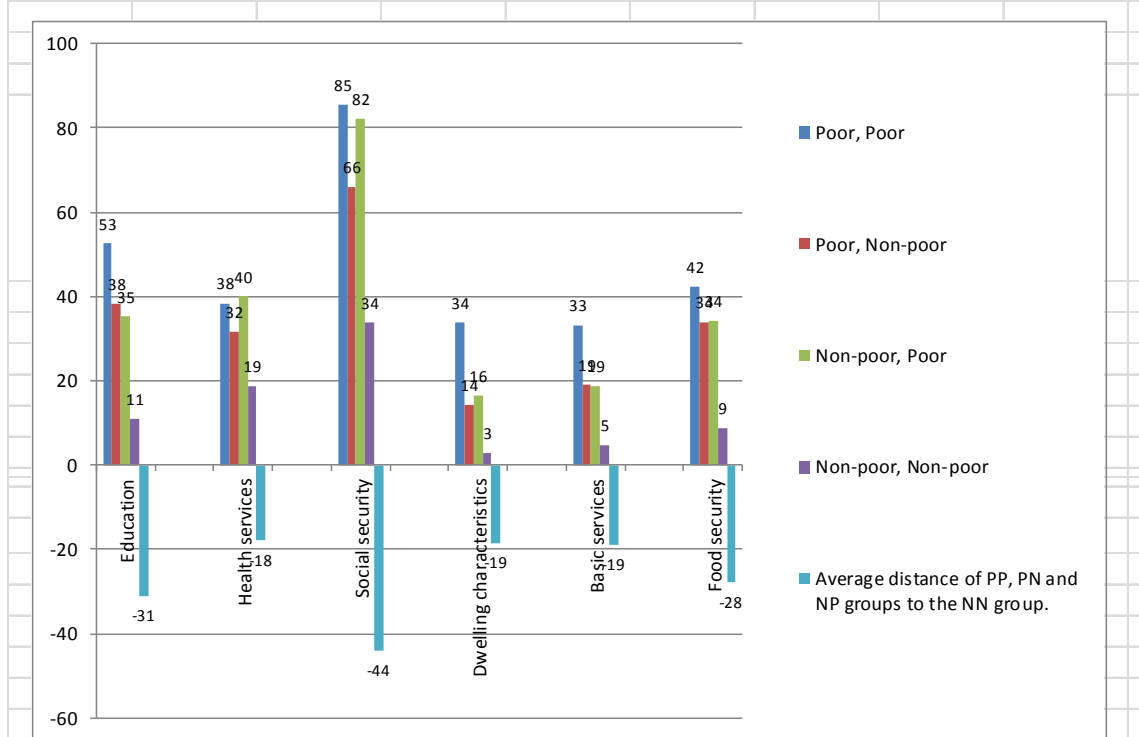
Source: author's elaboration using the Encuesta Nacional de Ingresos y Gastos de los Hogares 2006, 2008 and 2010.

Graph 3. Social deprivations in each of the poverty transition matrix groups. Upper bound of social mobility 2006 to 2008.



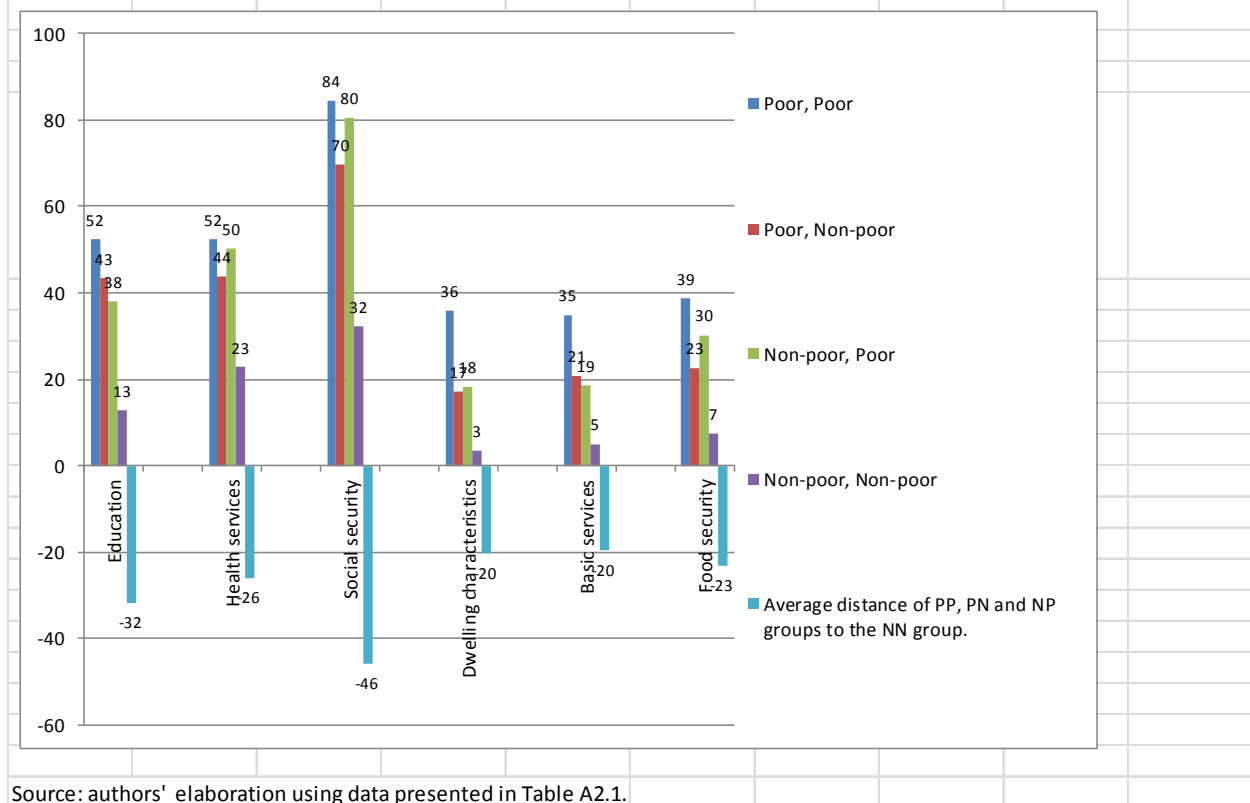
Source: authors' elaboration using data presented in Table A2.1.

Graph 4 Social deprivations in each of the poverty transition matrix groups. Upper bound of social mobility 2010 to 2008.



Source: authors' elaboration using data presented in Table A2.1.

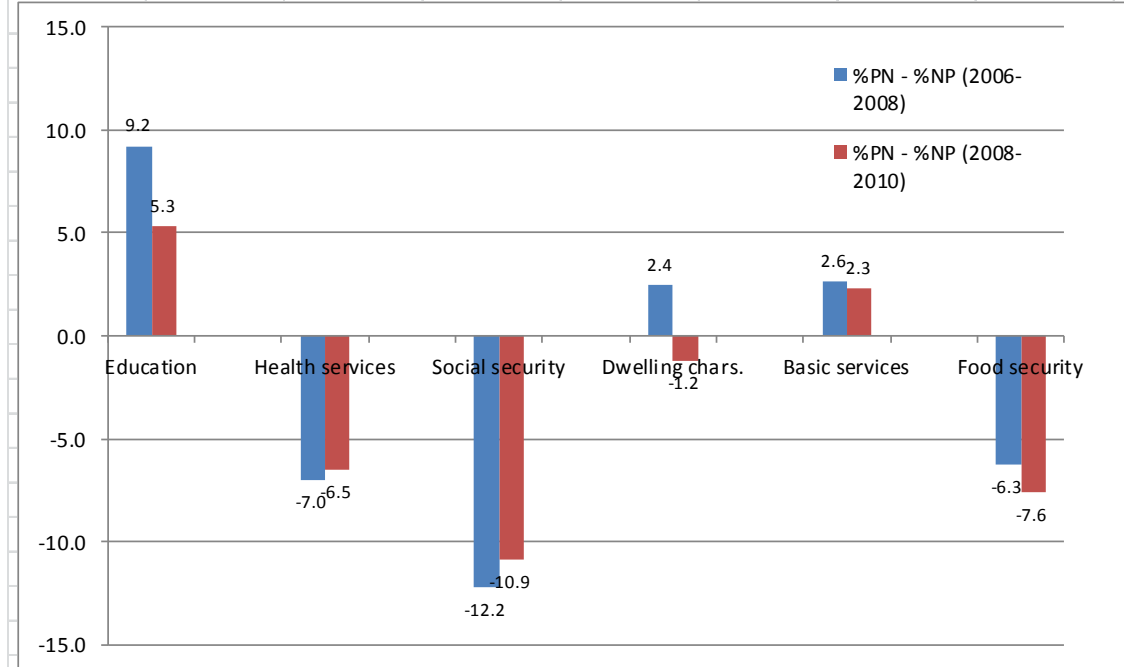
Graph 5. Social deprivations in each of the poverty transition matrix groups. Upper bound of social mobility 2008 to 2010.



Source: authors' elaboration using data presented in Table A2.1.

Moreover, differences of mean access to social rights were statistically different for all groups and variables. To assess main differences between the Tpn and the Tnp groups, Graph 6 shows that while Tpn has less access to education and more access to health, social security and food (between 6.2% and 12.3% according to what year and social rights are being considered) both groups have similar access to rights linked to living conditions.

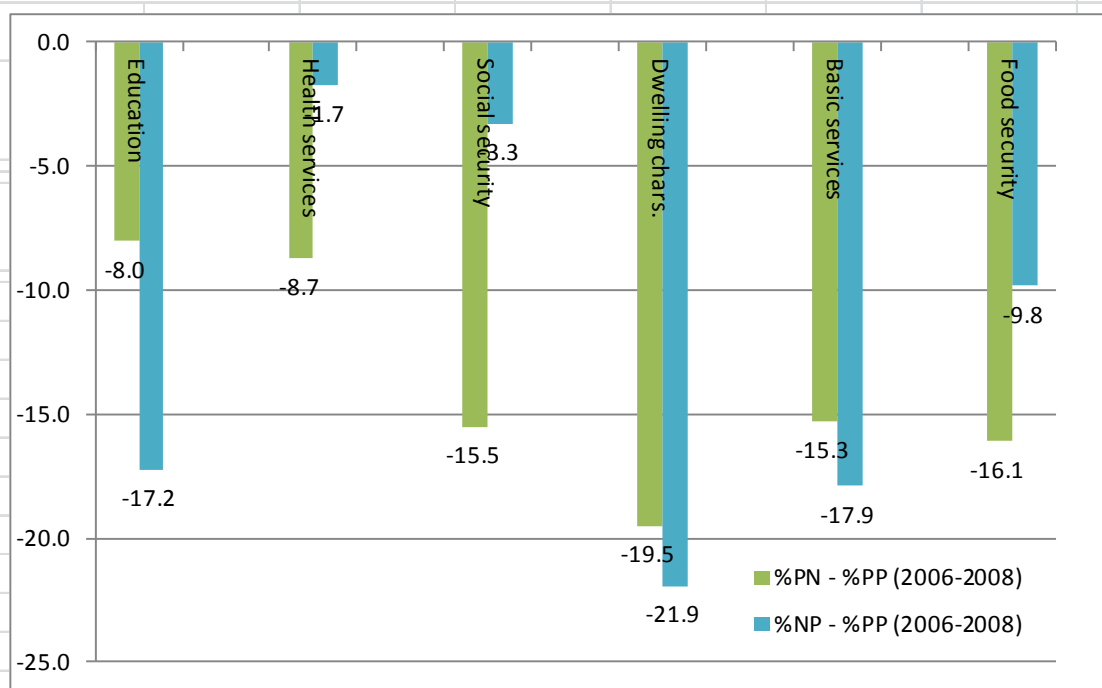
Graph 6. Differences in percentage points of the incidence of each social deprivation between the PN and NP groups. Upper bound of social mobility. 2008 to 2006 and 2008 to 2010.



Source: authors' elaboration using data presented in Table A2.1.

Graph 7 shows for 2006-2008 main differences between Tpn and Tnp groups and Tpp. The clear pattern that emerges is that, in general, Tpn and Tnp groups have different levels of access to social rights than Tpp. Nonetheless, Tnp group has similar lack of access to health and social security than Tpp group. This was also found for 2008-2010 transition.

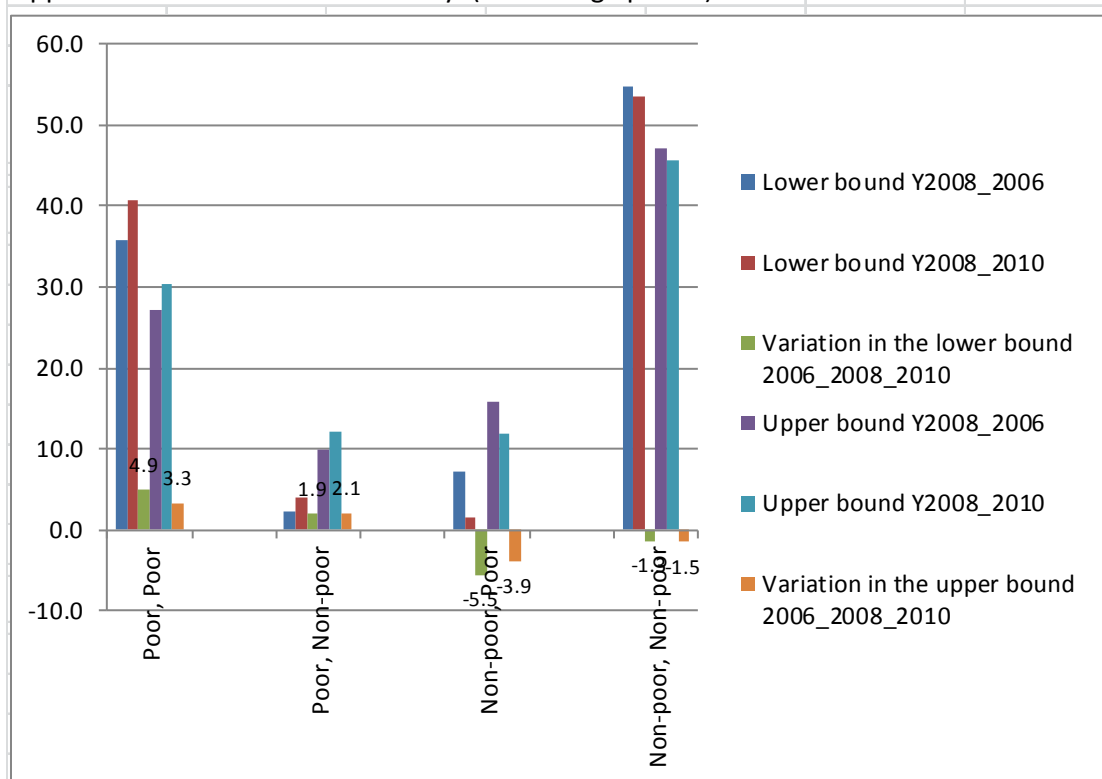
Graph 7. Differences in percentage points in the incidence of each social deprivation between the NP and PN groups and the PP group. Upper bound of social mobility. 2006-2008 and 2008-2010.



Source: authors' elaboration using data presented in Table A2.1.

As a way of a summary for this section, we can say that the Tnn group has very different access to social rights than the other three groups of the populations (Tnp, Tpn, and Tpp). Main differences between Tpn y Tnp are in health, social security and food. Importantly for our analysis, while Tpn group has more favorable indicators than Tpp, the Tnp group is closer to Tpp in the lack of access to health and social security. These facts are consistent with the hypothesis that it is the lack of a minimum safety net what pushes part of the society into poverty after income or health shocks. Moreover, access to health and social security seem to have been key factors for moving out of poverty.

Graph 8. Variations in the incidence of each group of the poverty transition matrix between 2008-2010 and 2006-2008 (social deprivations of 2008 fixed).
Upper and lower bounds of mobility. (Percentage points)



Source: authors' elaboration using data presented in Table 8.

7.2 Main characteristics for each group

Table 9 shows results for the means of key variables for 2006-2008 and 2008-2010 transitions (with access to social rights fixed at their 2008 values). As expected, the majority of means resulted being statistically different when comparing Tnn and Tpp populations. In turn, the table shows that Tpn and Tnp groups have very similar characteristics. It looks like the main difference resides only in the degree of access to health and social security. The table also shows that Tpn and Tnp groups have characteristics that are somehow between those of Tnn and Tpp⁶⁷.

⁶ Tables A2.4, A2.5 y A2.6 in the Appendix show the full set of comparisons.

⁷ Tests for the 2010-2008 transitions that uses social rights access levels of 2010 show similar results.

Table 9

Selected social indicators for each of the transition matrix groups 2006-2008 and 2008-2010. Upper bound of mobility.

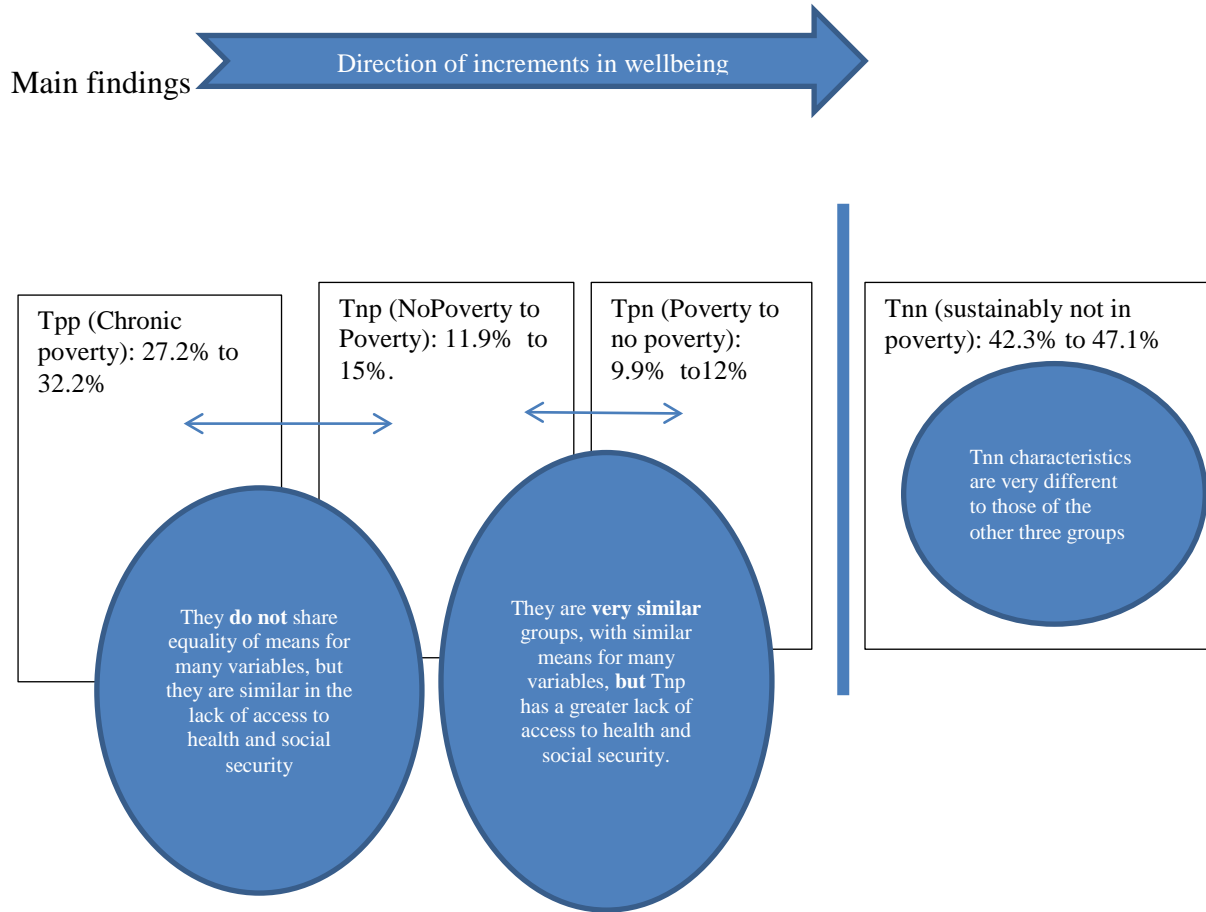
Variable	Transitions 2006-2008				Transitions 2008-2010			
	Tpp	Tpn	Tnp	Tnn	Tpp	Tpn	Tnp	Tnn
Household head's formal schooling years	4.4	5.4	6.1	9.6	4.7	5.9	6.1	9.7
Percentage of the household heads who had a diabetes mellitus detection test in the last 12 months	36.7	44.0	40.7	53.9	37.2	44.7	41.4	54.0
Percentage of the household heads who had their blood pressure measured in the last 12 months	53.1	61.3	58.0	71.7	53.8	62.2	58.6	71.8
Household members have access to health services from IMSS	13.9	28.3	18.5	45.3	14.5	27.8	19.2	45.9
Household members have access to health services from private institutions	20.5	32.1	25.4	36.2	21.0	33.0	24.7	36.0
At least one member of the household speaks or consider him/herself to be part of an indigenous group	25.5	12.5	12.0	4.7	22.9	11.8	11.6	4.7
Number of household members from 0 to 12 years old	2.1	1.3	1.5	0.9	2.1	1.3	1.5	0.9
Percentage of household members from 0 to 12 and from 65 years old or more	66.3	41.3	50.4	31.6	67.3	45.4	46.8	30.8
Number of household members with a job	1.8	2.3	1.7	2.0	1.6	1.9	2.0	2.1
Percentage of households which receive social programs cash transfers	43.3	26.1	29.2	10.5	40.7	24.7	29.7	10.3
Percentage of households with computer	2.7	10.3	11.8	41.1	3.2	12.2	12.4	41.6
Percentage of households with internet access	0.8	3.8	5.0	25.5	1.1	5.8	5.1	25.7
Average number of lightbulbs in the dwelling	4.4	5.6	5.7	8.7	4.4	5.7	5.7	8.7
Percentage of households with a car or automobile	7.3	15.7	18.2	45.2	8.4	16.9	18.3	45.6
Percentage of students with good or excellent results in standardized tests at the municipality level	31.6	34.8	35.9	39.6	31.8	35.2	36.2	39.8
Child mortality rate at the municipal level	21.0	17.1	17.1	13.2	20.7	17.2	16.4	12.9

Source: authors' estimations based on Table A2.4

Note: Results highlighted in dark gray showed no statistically significant difference between all of the transition groups. In light gray are shown these results without statistically significant differences between the Tpn and Tnp groups.

The following figure summarizes main results.

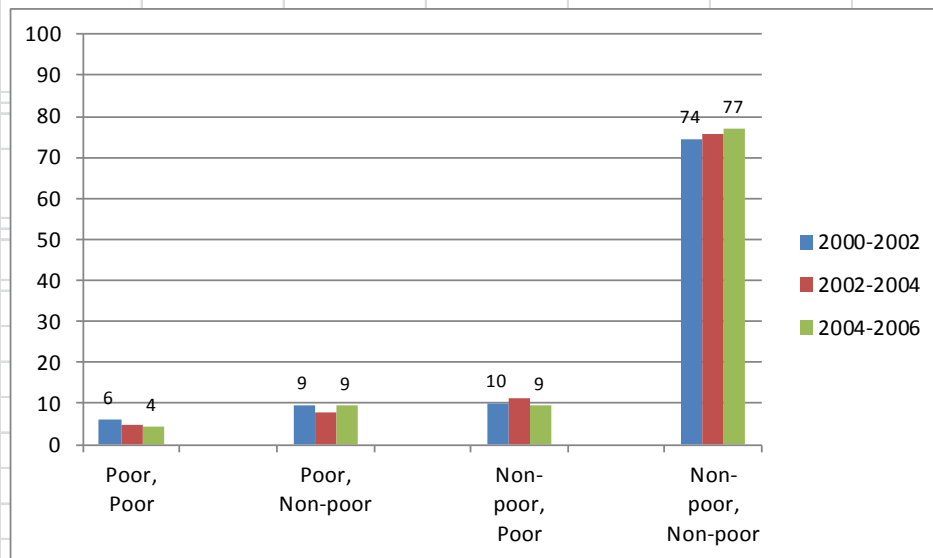
Figure 3. Main findings



8. Robustness analysis.

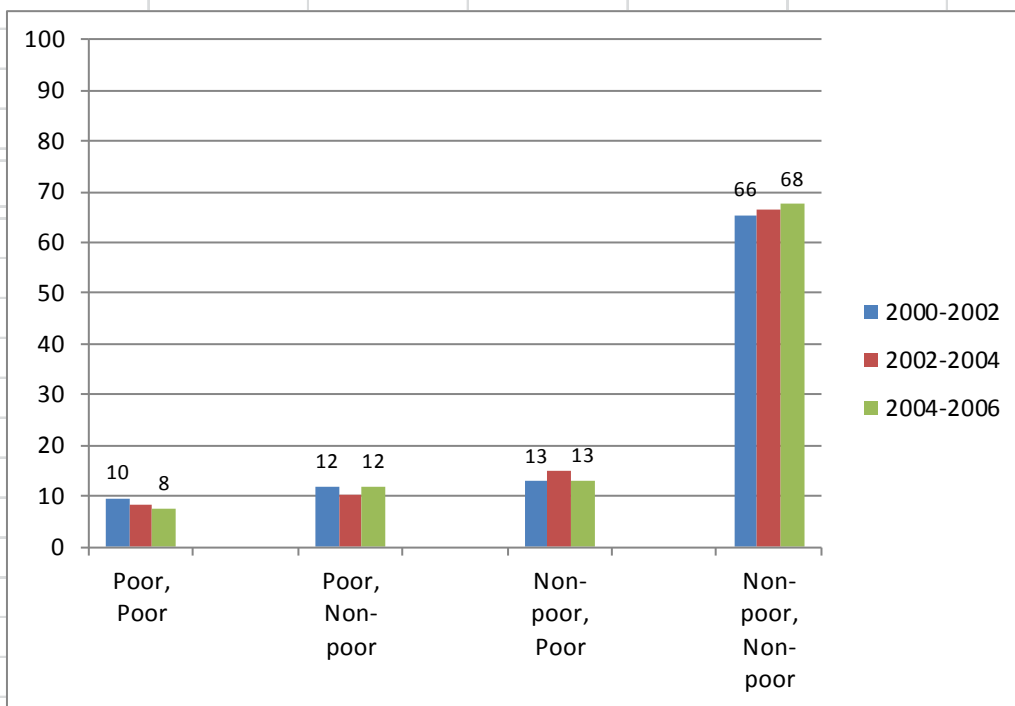
We run similar models for years 2000-2002, 2002-2004, and 2004-2006, but without considering access to social rights due to data limitations. Big jumps in our estimates of different transitions would for sure cast doubts of the complete exercise done for the 2006-2010 period. As can be seen in graphs 11, 12, y 13, this was not the case for the three alternative definitions of FGT0 (food poverty, capacity poverty, patrimony poverty), which allows us to trust our results.

Graph 9. Percentage of the population in each group of the poverty transition matrices 2000-2002, 2002-2004 y 2004-2006. Food poverty.



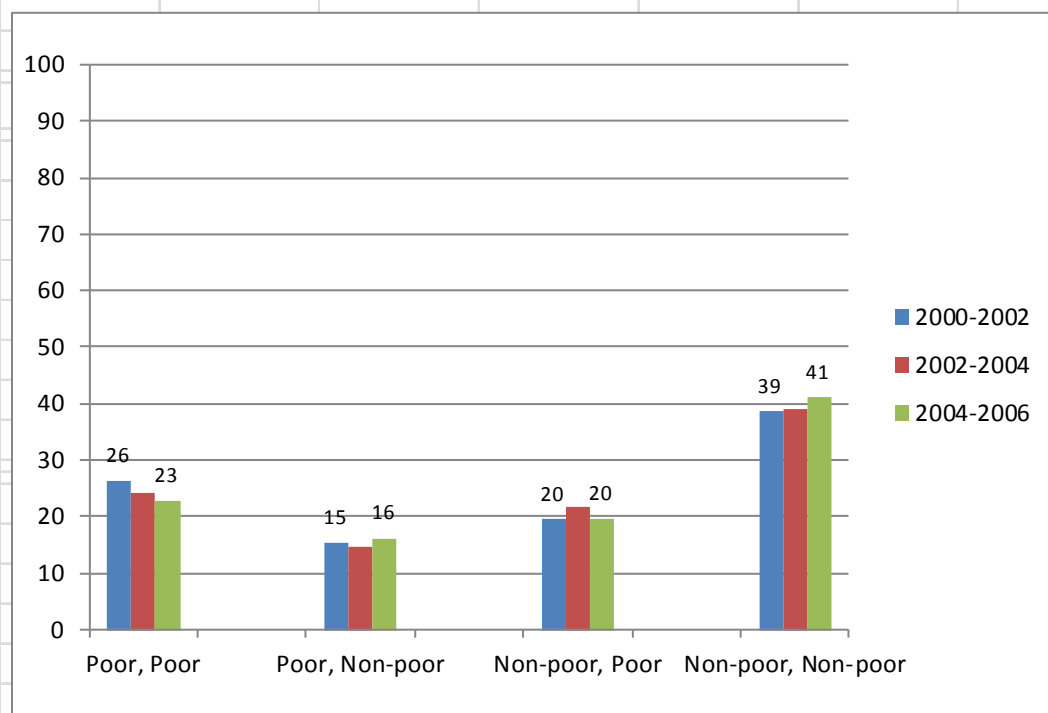
Source: authors' elaboration using data presented in Table A2.7.

Graph 10. Percentage of the population in each group of the poverty transition matrices 2000-2002, 2002-2004 y 2004-2006. Capacity poverty.



Source: authors' elaboration using data presented in Table A2.7.

Graph 11. Percentage of the population in each group of the poverty transition matrices 2000-2002, 2002-2004 y 2004-2006. Patrimonial poverty.



Source: authors' elaboration using data presented in Table A2.7.

9.-Summary and discussion

By analyzing poverty transitions for the case of Mexico, we were able to identify main characteristics of the population in four categories: Tpp, Tpn, Tnp, and Tnn. Our findings include:

For years 2006 and 2008 and years 2008 and 2010, around 75% of the population were found to be in a no-change situation: about 30% in a situation of chronic poverty (Tpp), whereas about 45% in a sustainable non-poverty situation (Tnn). The remaining 25% was divided more or less equally into a group moving out of poverty (Tpn) and a group moving into poverty (Tnp).

Main socio-demographic characteristics of groups Tpp and Tnn were in an statistical as well as in an economics sense, markedly different. On the contrary, Tpn and Tnp groups ended up being very similar, the main difference being their access to health and social security

(significantly higher in the Tpn population). Tnp groups resulted similar to Tpp group only in the lack of access to health and social security. Although we do not show this in our research, these results are in line with the hypothesis that links the absence of access to a minimum safety net in term of health and social security what pushes people into poverty, even after being able of escaping from it.

Results were robust to different specifications used. Social policy can diminish vulnerability to poverty by providing a minimum level of a safety net in terms of access to health and social security.

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Annex 1: Thresholds for multidimensional poverty indicators

CONEVAL's definitions are as follows⁸:

Educational gap

For people aged three to fifteen years old. When they lack mandatory basic education and are not attending a formal educational center.

For people born before 1982. If they do not meet the minimum mandatory basic education level that prevailed at the time they should have attended elementary school.

For people born from 1982 onwards. If they have not completed the minimum current mandatory basic education requirement (secondary school).

Access to health services

A person is considered to be deprived of access to health services when she is not enrolled in or entitled to receive medical services from any institution offering them, including the Seguro Popular, from any social security public institute or from private medical services.

Access to social security

The population deprived of access to social security is defined using the following criteria:

For those who are economically active, it is considered that they are not deprived in this dimension if, through their job, they enjoy the benefits established in the law.

For non-paid workers and for self-employed, given the voluntary nature of enrollment in the system, they are considered to have access to social security when they receive medical services as a job benefit or when they are actually voluntarily enrolled and when, in addition, they bear a retirement investment plan.

For the general population, people are considered to have access when they benefit from a retirement program or pension or when one of their relatives has access to social security.

⁸ CONEVAL, Multidimensional poverty measures. http://www.coneval.gob.mx/Paginas/principal_EN.aspx, consulted on October 12th, 2013

In the case of people in retirement ages (sixty five years or older), people are considered to have access to social security if they benefit from a social pension program for senior citizens.

The population not meeting any of the above criteria is considered deprived due to access to social security.

Quality and spaces of the dwelling

If the dwelling has dirt floor.

If the roof of the dwelling is made of cardboard sheets or waste.

If the walls of the dwelling are made of mud or daub and wattle; reed, bamboo or palm tree; cardboard, metal or asbestos sheets; or waste.

The ratio of people per room is greater than 2.5 (overcrowding).

Access to basic services in the dwelling

Water is obtained from a well, river, lake, stream, or truck; or, piped water is carried from another dwelling or gotten at a public faucet or hydrant.

There is no drainage service, or the drainage is connected to pipes leading to a river, lake, sea, ravine or crack.

There is no electricity.

Wood or coal with no chimney are used for cooking or heating food inside the dwelling.

Access to food

The scale recognizes four possible levels of food insecurity: severe food insecurity, moderate food insecurity, mild food insecurity and food security. For poverty measurement purposes, CONEVAL considers that a person is deprived due to lack of access to food when she presents moderate or severe food insecurity.

Annex 2: Additional tables.

Table A2.1 Percentage of the population with each social deprivation in each of the poverty transition matrix groups. Upper and lower bounds of mobility, 2006-2008, 2008-2010 and 2010-2008. Model 1.

Social deprivation		2006-2008				2008-2010				2010-2008			
		Estimated percentage (2008 sample)				Estimated percentage (2010 sample)				Estimated percentage (2008 sample)			
		Poor, Poor ¹	Poor, Non-poor ²	Non-poor, Poor ³	Non-poor, Non-poor ⁴	Poor, Poor ¹	Poor, Non-poor ²	Non-poor, Poor ³	Non-poor, Non-poor ⁴	Poor, Poor ¹	Poor, Non-poor ²	Non-poor, Poor ³	Non-poor, Non-poor ⁴
Upper bound^a													
Education	Percentage	55.4	47.4	38.1	13.8	52.5	38.3	35.3	10.9	52.3	43.3	38.0	12.8
	SE	0.4971	1.0980	0.7654	0.2680	0.5229	2.1712	1.0316	0.2706	0.4149	0.7382	1.0439	0.2119
Health services	Percentage	52.4	43.6	50.6	24.0	38.4	31.6	40.0	18.8	52.2	43.8	50.3	22.7
	SE	0.4430	0.8988	0.7579	0.2024	0.3900	1.8604	0.7923	0.3234	0.3629	0.8211	0.9312	0.2444
Social security	Percentage	84.8	69.3	81.5	34.5	85.4	66.1	82.2	33.8	84.4	69.6	80.5	32.3
	SE	0.3526	0.8573	0.6006	0.2482	0.3191	3.2127	0.6462	0.5709	0.2780	0.7557	0.7015	0.2667
Dwelling characteristics	Percentage	39.4	19.9	17.4	3.5	33.7	14.4	16.4	2.9	35.9	17.1	18.4	3.4
	SE	0.4070	0.7467	0.6872	0.1602	0.3769	0.9751	0.7412	0.1760	0.3817	0.5001	0.9428	0.1349
Basic services	Percentage	37.8	22.5	19.9	5.9	33.3	19.0	18.8	4.7	34.9	20.8	18.5	5.0
	SE	0.4010	0.7722	0.6713	0.1695	0.3828	1.1635	0.7650	0.1796	0.3538	0.6406	0.8547	0.1711
Food security	Percentage	40.1	24.0	30.3	7.9	42.2	33.9	34.1	8.8	38.7	22.6	30.2	7.5
	SE	0.4404	0.6826	0.7438	0.1582	0.3769	3.2691	0.7826	0.9649	0.3181	0.6735	0.8086	0.1780
Lower bound													
Education	Percentage	50.7	51.9	40.7	18.4	47.2	19.1	37.8	15.3	48.5	43.2	44.1	17.3
	SE	0.8911	3.6647	1.4947	0.4470	0.9459	11.1373	2.0915	0.5282	0.8219	2.3775	3.0697	0.4519
Health services	Percentage	52.7	46.3	46.7	26.7	39.3	15.8	39.4	21.1	52.1	44.2	42.2	25.8
	SE	1.0303	4.0350	1.6598	0.5254	0.9311	8.9786	2.3202	0.7229	0.9802	2.5408	3.1300	0.5349
Social security	Percentage	84.8	68.2	77.7	39.5	84.8	45.6	78.7	38.9	83.7	72.1	74.0	37.6
	SE	0.6085	3.6996	1.3063	0.5843	0.5419	9.7811	1.8034	0.7714	0.5846	2.2627	2.7412	0.6054
Dwelling characteristics	Percentage	33.8	21.2	18.7	5.7	29.3	9.8	16.3	4.8	31.1	16.9	26.4	5.5
	SE	0.9506	3.1004	1.2796	0.2980	0.9381	6.4541	1.5825	0.3255	0.8517	1.8700	2.7180	0.2966
Basic services	Percentage	33.5	19.5	20.1	8.4	28.5	6.2	22.7	6.9	30.8	22.1	18.7	7.3
	SE	1.2497	2.9520	1.3000	0.4495	1.1404	3.8206	1.8409	0.5165	1.1340	2.1397	2.4027	0.4165
Food security	Percentage	38.5	27.8	26.5	10.0	40.8	68.7	31.1	10.6	36.5	25.7	33.3	9.5
	SE	0.9314	3.4006	1.3653	0.3421	0.9432	17.6859	2.0086	0.5706	0.8600	2.1278	3.1040	0.3487

^a Upper bound estimates are obtained using a random selection of the target year residuals for each household in the base year, for example from 2006 residuals to 2008 households.

¹ Population in multidimensional poverty both at the base year and at the estimated year, also called "Chronically poor".

² Population in multidimensional poverty at the base year, but non-poor at the estimated year, also called "Ascending".

³ Population not in multidimensional poverty at the base year, but poor at the estimated year, also called "Descending".

⁴ Population not in multidimensional poverty neither at the base year nor at the estimated year, also called "Sustainable non-poor".

Notes: Standard errors shown in percentages.

Source: author's elaboration using the Encuesta Nacional de Ingresos y Gastos de los Hogares 2006, 2008 and 2010.

Table A2.2 Percentage of the population with each social deprivation in each of the poverty transition matrix groups. Upper and lower bounds of mobility. 2006-2008, 2008-2010 and 2010-2008. Model 2.

Social deprivation		2006-2008				2008-2010				2010-2008			
		Estimated percentage (2008 sample)				Estimated percentage (2010 sample)				Estimated percentage (2008 sample)			
		Poor, Poor ¹	Poor, Non-poor ²	Non-poor, Poor ³	Non-poor, Non-poor ⁴	Poor, Poor ¹	Poor, Non-poor ²	Non-poor, Poor ³	Non-poor, Non-poor ⁴	Poor, Poor ¹	Poor, Non-poor ²	Non-poor, Poor ³	Non-poor, Non-poor ⁴
Upper bound^a													
Education	Percentage	55.3	48.7	39.5	14.8	51.0	45.1	35.8	11.5	52.7	45.4	40.4	14.3
	SE	0.4873	1.0316	0.7373	0.2546	0.5061	1.0390	0.8320	0.2576	0.3953	0.9135	0.9865	0.3011
Health services	Percentage	53.1	44.7	49.4	23.4	37.6	34.4	39.4	18.0	52.7	44.6	50.4	22.6
	SE	0.5119	1.0873	0.8040	0.2546	0.4576	0.9243	0.8178	0.2141	0.3724	0.9428	0.9303	0.2785
Social security	Percentage	85.3	68.9	82.4	34.7	83.3	70.1	80.5	32.7	85.3	69.8	82.0	33.0
	SE	0.3538	0.9170	0.5755	0.2434	0.4012	0.9546	0.7116	0.2615	0.2690	0.8540	0.6719	0.2814
Dwelling characteristics	Percentage	38.9	20.1	17.4	3.6	32.0	16.9	17.2	3.1	35.5	16.8	18.8	3.7
	SE	0.4971	0.7918	0.7190	0.1770	0.4722	0.7802	0.8338	0.1749	0.3883	0.5757	0.9297	0.1777
Basic services	Percentage	38.3	24.4	21.7	6.5	28.2	18.6	16.5	4.3	35.8	22.4	20.9	6.2
	SE	0.4920	0.8831	0.7779	0.2023	0.4037	0.9709	0.6753	0.2031	0.3689	0.7663	0.9529	0.2215
Food security	Percentage	37.6	24.6	30.3	7.8	42.6	25.6	34.4	8.2	37.1	22.7	29.4	7.6
	SE	0.4367	0.7670	0.6960	0.1716	0.5110	0.9888	0.9206	0.2264	0.3860	0.6679	0.9629	0.1859
Lower bound													
Education	Percentage	50.2	52.6	40.8	17.1	47.0	27.1	39.3	15.0	48.2	40.9	50.3	17.5
	SE	0.9116	3.0555	1.4201	0.4314	0.9529	6.2235	2.1450	0.6800	0.8236	2.4359	2.6906	0.4498
Health services	Percentage	53.7	46.0	43.9	26.0	39.2	28.6	40.4	20.5	52.2	45.2	41.3	25.8
	SE	1.0811	3.0394	1.5173	0.5284	0.9240	6.6237	2.1143	0.8201	0.9789	2.4712	2.8530	0.5438
Social security	Percentage	84.4	63.0	79.1	38.7	84.8	74.3	79.2	37.8	83.9	69.9	72.9	37.9
	SE	0.6454	3.0365	1.1213	0.5960	0.5474	6.0157	1.7013	1.2030	0.5829	2.2635	2.6622	0.6062
Dwelling characteristics	Percentage	34.2	18.7	18.2	5.5	29.3	11.5	15.9	4.8	31.3	16.1	23.9	5.5
	SE	0.9643	2.3393	1.1106	0.2893	0.9437	3.0928	1.6034	0.3909	0.8580	1.9235	2.3777	0.2997
Basic services	Percentage	32.5	16.5	21.8	7.8	28.8	14.4	19.2	6.6	30.8	18.5	20.1	7.6
	SE	1.2440	2.2391	1.2905	0.4337	1.1418	4.0503	1.6923	0.5142	1.1393	1.9641	2.2343	0.4255
Food security	Percentage	38.3	26.7	28.9	9.7	41.1	45.3	28.6	12.4	36.7	26.1	30.1	9.5
	SE	0.9640	2.5458	1.3105	0.3467	0.9572	11.9100	2.0517	2.0737	0.8613	2.1643	2.7994	0.3531

^aUpper bound estimates are obtained using a random selection of the target year residuals for each household in the base year, for example from 2006 residuals to 2008 households.

¹Population in multidimensional poverty both at the base year and at the estimated year, also called "Chronically poor".

²Population in multidimensional poverty at the base year, but non-poor at the estimated year, also called "Ascending".

³Population not in multidimensional poverty at the base year, but poor at the estimated year, also called "Descending".

⁴Population not in multidimensional poverty neither at the base year nor at the estimated year, also called "Sustainable non-poor".

Notes: Standard errors shown in percentages.

Source: author's elaboration using the Encuesta Nacional de Ingresos y Gastos de los Hogares 2006, 2008 and 2010.

Table A2.3 Percentage of the population with each social deprivation in each of the poverty transition matrix groups. Upper and lower bounds of mobility. 2006-2008, 2008-2010 and 2010-2008. Model 3.

Social deprivation		2006-2008				2008-2010				2010-2008			
		Estimated percentage (2008 sample)				Estimated percentage (2010 sample)				Estimated percentage (2008 sample)			
		Poor, Poor ¹	Poor, Non-poor ²	Non-poor, Poor ³	Non-poor, Non-poor ⁴	Poor, Poor ¹	Poor, Non-poor ²	Non-poor, Poor ³	Non-poor, Non-poor ⁴	Poor, Poor ¹	Poor, Non-poor ²	Non-poor, Poor ³	Non-poor, Non-poor ⁴
Upper bound^a													
Education	Percentage	56.9	49.9	37.7	14.1	51.3	41.7	38.8	12.3	52.7	41.9	42.7	15.0
	SE	0.5377	0.8277	0.8380	0.2552	0.5686	0.9530	0.7477	0.2605	0.5430	0.9942	0.7684	0.2980
Health services	Percentage	52.6	43.3	51.2	23.6	37.7	36.3	37.9	17.6	52.6	45.3	50.8	22.4
	SE	0.5031	0.9376	0.7448	0.2272	0.5299	0.9409	0.7017	0.2476	0.4823	0.8550	0.6849	0.2519
Social security	Percentage	85.7	68.5	82.3	34.4	84.1	72.3	80.4	32.3	86.1	70.4	81.0	32.7
	SE	0.3698	0.9057	0.5487	0.2647	0.3765	0.8759	0.4976	0.2984	0.3795	0.8077	0.5435	0.2569
Dwelling characteristics	Percentage	40.3	19.9	16.5	3.3	32.6	15.7	18.3	3.0	37.2	17.1	20.6	3.7
	SE	0.5095	0.6739	0.7037	0.1631	0.4683	0.7881	0.6162	0.1936	0.5103	0.6895	0.6992	0.1819
Basic services	Percentage	38.5	22.7	21.1	6.6	30.7	20.3	17.0	4.5	37.9	23.9	19.4	5.2
	SE	0.4527	0.7934	0.7038	0.1980	0.4263	0.8088	0.5461	0.1997	0.5239	0.7808	0.7637	0.2124
Food security	Percentage	38.1	23.8	30.1	7.8	41.8	24.7	35.4	7.7	37.8	22.4	30.7	7.9
	SE	0.5031	0.7336	0.7481	0.1836	0.5304	0.8719	0.7141	0.2316	0.5305	0.7641	0.7535	0.2063
Lower bound													
Education	Percentage	51.6	55.7	34.8	17.3	47.3	53.6	34.6	14.6	48.0	35.1	53.3	18.7
	SE	0.8529	2.4900	1.5355	0.4447	0.9479	6.1481	2.0652	0.7415	0.8186	2.5527	3.1203	0.4679
Health services	Percentage	52.5	40.3	50.4	26.7	39.3	26.5	39.5	20.7	52.3	46.5	49.3	26.4
	SE	1.0271	2.5805	1.8732	0.5338	0.9055	4.6518	2.3554	0.9059	0.9761	2.6871	3.0285	0.5462
Social security	Percentage	84.5	65.6	79.6	39.0	84.7	62.1	79.4	38.7	84.0	71.4	74.6	38.9
	SE	0.5777	2.4092	1.3938	0.5942	0.5574	7.1485	1.6733	0.8452	0.5731	2.4962	2.5736	0.5997
Dwelling characteristics	Percentage	33.9	23.4	16.9	5.1	29.1	27.5	15.7	4.6	31.5	23.0	20.3	5.5
	SE	0.9350	2.3488	1.2588	0.2704	0.9339	7.8374	1.6123	0.3608	0.8501	2.3630	2.7436	0.2955
Basic services	Percentage	31.9	15.5	25.2	8.3	28.4	12.6	21.8	6.8	30.7	29.0	16.9	7.4
	SE	1.2279	2.1012	1.6085	0.4595	1.1435	3.0821	1.9431	0.5604	1.1175	2.6342	2.6404	0.4204
Food security	Percentage	37.8	28.5	30.0	9.5	40.9	34.4	28.6	13.2	37.1	25.3	24.7	10.1
	SE	0.9117	2.3132	1.5661	0.3318	0.9535	5.3540	2.1926	2.7072	0.8624	2.3898	2.3979	0.3658

^aUpper bound estimates are obtained using a random selection of the target year residuals for each household in the base year, for example from 2006 residuals to 2008 households.

¹Population in multidimensional poverty both at the base year and at the estimated year, also called "Chronically poor".

²Population in multidimensional poverty at the base year, but non-poor at the estimated year, also called "Ascending".

³Population not in multidimensional poverty at the base year, but poor at the estimated year, also called "Descending".

⁴Population not in multidimensional poverty neither at the base year nor at the estimated year, also called "Sustainable non-poor".

Notes: Standard errors shown in percentages.

Source: author's elaboration using the Encuesta Nacional de Ingresos y Gastos de los Hogares 2006, 2008 and 2010.

Table A2.3 Percentage of the population with each social deprivation in each of the poverty transition matrix groups. Upper and lower bounds of mobility, 2006-2008, 2008-2010 and 2010-2008. Model 3.

Social deprivation		2006-2008				2008-2010				2010-2008			
		Estimated percentage (2008 sample)				Estimated percentage (2010 sample)				Estimated percentage (2008 sample)			
		Poor, Poor ¹	Poor, Non-poor ²	Non-poor, Poor ³	Non-poor, Non-poor ⁴	Poor, Poor ¹	Poor, Non-poor ²	Non-poor, Poor ³	Non-poor, Non-poor ⁴	Poor, Poor ¹	Poor, Non-poor ²	Non-poor, Poor ³	Non-poor, Non-poor ⁴
Upper bound^a													
Education	Percentage	56.9	49.9	37.7	14.1	51.3	41.7	38.8	12.3	52.7	41.9	42.7	15.0
	SE	0.5377	0.8277	0.8380	0.2552	0.5686	0.9530	0.7477	0.2605	0.5430	0.9942	0.7684	0.2980
Health services	Percentage	52.6	43.3	51.2	23.6	37.7	36.3	37.9	17.6	52.6	45.3	50.8	22.4
	SE	0.5031	0.9376	0.7448	0.2272	0.5299	0.9409	0.7017	0.2476	0.4823	0.8550	0.6849	0.2519
Social security	Percentage	85.7	68.5	82.3	34.4	84.1	72.3	80.4	32.3	86.1	70.4	81.0	32.7
	SE	0.3698	0.9057	0.5487	0.2647	0.3765	0.8759	0.4976	0.2984	0.3795	0.8077	0.5435	0.2569
Dwelling characteristics	Percentage	40.3	19.9	16.5	3.3	32.6	15.7	18.3	3.0	37.2	17.1	20.6	3.7
	SE	0.5095	0.6739	0.7037	0.1631	0.4683	0.7881	0.6162	0.1936	0.5103	0.6895	0.6992	0.1819
Basic services	Percentage	38.5	22.7	21.1	6.6	30.7	20.3	17.0	4.5	37.9	23.9	19.4	5.2
	SE	0.4527	0.7934	0.7038	0.1980	0.4263	0.8088	0.5461	0.1997	0.5239	0.7808	0.7637	0.2124
Food security	Percentage	38.1	23.8	30.1	7.8	41.8	24.7	35.4	7.7	37.8	22.4	30.7	7.9
	SE	0.5031	0.7336	0.7481	0.1836	0.5304	0.8719	0.7141	0.2316	0.5305	0.7641	0.7535	0.2063
Lower bound													
Education	Percentage	51.6	55.7	34.8	17.3	47.3	53.6	34.6	14.6	48.0	35.1	53.3	18.7
	SE	0.8529	2.4900	1.5355	0.4447	0.9479	6.1481	2.0652	0.7415	0.8186	2.5527	3.1203	0.4679
Health services	Percentage	52.5	40.3	50.4	26.7	39.3	26.5	39.5	20.7	52.3	46.5	49.3	26.4
	SE	1.0271	2.5805	1.8732	0.5338	0.9055	4.6518	2.3554	0.9059	0.9761	2.6871	3.0285	0.5462
Social security	Percentage	84.5	65.6	79.6	39.0	84.7	62.1	79.4	38.7	84.0	71.4	74.6	38.9
	SE	0.5777	2.4092	1.3938	0.5942	0.5574	7.1485	1.6733	0.8452	0.5731	2.4962	2.5736	0.5997
Dwelling characteristics	Percentage	33.9	23.4	16.9	5.1	29.1	27.5	15.7	4.6	31.5	23.0	20.3	5.5
	SE	0.9350	2.3488	1.2588	0.2704	0.9339	7.8374	1.6123	0.3608	0.8501	2.3630	2.7436	0.2955
Basic services	Percentage	31.9	15.5	25.2	8.3	28.4	12.6	21.8	6.8	30.7	29.0	16.9	7.4
	SE	1.2279	2.1012	1.6085	0.4595	1.1435	3.0821	1.9431	0.5604	1.1175	2.6342	2.6404	0.4204
Food security	Percentage	37.8	28.5	30.0	9.5	40.9	34.4	28.6	13.2	37.1	25.3	24.7	10.1
	SE	0.9117	2.3132	1.5661	0.3318	0.9535	5.3540	2.1926	2.7072	0.8624	2.3898	2.3979	0.3658

^aUpper bound estimates are obtained using a random selection of the target year residuals for each household in the base year, for example from 2006 residuals to 2008 households.

¹Population in multidimensional poverty both at the base year and at the estimated year, also called "Chronically poor".

²Population in multidimensional poverty at the base year, but non-poor at the estimated year, also called "Ascending".

³Population not in multidimensional poverty at the base year, but poor at the estimated year, also called "Descending".

⁴Population not in multidimensional poverty neither at the base year nor at the estimated year, also called "Sustainable non-poor".

Notes: Standard errors shown in percentages.

Source: author's elaboration using the Encuesta Nacional de Ingresos y Gastos de los Hogares 2006, 2008 and 2010.

Table A2.4 Selected social indicators for each of the transition matrix groups. Upper and lower bounds of social mobility, 2006-2008, 2008-2010 and 2010-2008. Model 1.

Social indicators		2006-2008				2008-2010				2010-2008			
		Estimated percentage (2008 sample)				Estimated percentage (2010 sample)				Estimated percentage (2008 sample)			
		Poor, Poor ¹	Poor, Non-poor ²	Non-poor, Poor ¹	Non-poor, Non-poor ⁴	Poor, Poor ¹	Poor, Non-poor ²	Non-poor, Poor ¹	Non-poor, Non-poor ⁴	Poor, Poor ¹	Poor, Non-poor ²	Non-poor, Poor ¹	Non-poor, Non-poor ⁴
Upper bound³													
Household head's formal schooling years	Percentage	4.4	5.4	6.1	9.6	4.7	6.1	6.4	10.1	4.7	5.9	6.1	9.7
	SE	0.0757	0.1328	0.0781	0.0591	0.0849	0.1893	0.0815	0.1050	0.0749	0.1330	0.0860	0.0604
Percentage of the household heads who had a diabetes mellitus detection test in the last 12 months	Percentage	36.7	44.0	40.7	53.9	36.6	41.8	40.8	52.6	37.2	44.7	41.4	54.0
	SE	1.0640	1.6782	1.0372	0.6138	1.1005	4.2054	1.0518	1.0737	1.0565	1.5959	1.1180	0.6292
Percentage of the household heads who had their blood pressure measured in the last 12 months	Percentage	53.1	61.3	58.0	71.7	52.6	66.4	57.4	71.2	53.8	62.2	58.6	71.8
	SE	1.1494	1.6415	1.0429	0.5274	1.1381	4.9266	1.0515	0.9818	1.1105	1.5628	1.1223	0.5426
Household members have access to health services from IMSS	Percentage	13.9	28.3	18.5	45.3	11.6	20.6	16.9	41.4	14.5	27.8	19.2	45.9
	SE	0.7965	1.5451	0.8236	0.6419	0.6763	8.9925	0.8264	1.1477	0.7802	1.4760	0.9219	0.6514
Household members have access to health services from private institutions	Percentage	20.5	32.1	25.4	36.2	14.2	22.6	19.9	31.1	21.0	33.0	24.7	36.0
	SE	1.0153	1.6478	0.9813	0.6090	0.8318	3.0378	0.9158	1.0111	0.9996	1.5336	1.0389	0.6226
At least one member of the household speaks or consider him/herself to be part of an indigenous group	Percentage	25.5	12.5	12.0	4.7	24.7	11.9	13.2	4.6	22.9	11.8	11.6	4.7
	SE	1.6654	1.1726	0.8359	0.2788	1.8843	2.3368	0.9613	0.3466	1.5164	1.0855	0.8221	0.2797
Number of household members from 0 to 12 years old	Percentage	2.1	1.3	1.5	0.9	2.0	1.4	1.4	0.9	2.1	1.3	1.5	0.9
	SE	4.2993	4.6944	2.9123	1.2602	5.0945	17.6728	3.4944	3.2654	4.0840	4.3251	3.2140	1.3524
Percentage of household members from 0 to 12 and from 65 years old or more	Percentage	66.3	41.3	50.4	31.6	66.6	42.3	45.7	30.9	67.5	45.4	46.8	30.8
	SE	1.2117	1.6943	1.0004	0.4743	1.3972	1.7731	1.0228	0.6405	1.2080	1.6952	1.0372	0.4757
Number of household members with a job	Percentage	1.8	2.3	1.7	2.0	1.5	1.8	1.9	1.9	1.6	1.9	2.0	2.1
	SE	4.2702	5.9523	2.4749	1.6655	3.6052	12.8815	3.3694	2.4186	3.9812	4.8293	3.1077	1.7837
Percentage of households which receive social programs cash transfers	Percentage	43.3	26.1	29.2	10.5	51.3	28.1	33.9	12.6	40.7	24.7	29.7	10.3
	SE	1.2817	1.5180	0.9949	0.4102	1.3028	4.1494	1.0506	0.5734	1.2692	1.4654	1.0000	0.4146
Percentage of households with computer	Percentage	2.7	10.3	11.8	41.1	3.7	11.3	14.9	45.4	3.2	12.2	12.4	41.6
	SE	0.3543	1.1669	0.7284	0.5905	0.3412	1.9558	0.7154	1.3762	0.3747	1.1192	0.7999	0.6055
Percentage of households with internet access	Percentage	0.8	3.8	5.0	25.5	2.2	6.9	9.6	34.8	1.1	5.8	5.1	25.7
	SE	0.1922	0.6693	0.4632	0.5240	0.2652	1.3306	0.5907	1.1049	0.2076	0.7498	0.5096	0.5348
Average number of lightbulbs in the dwelling	Percentage	4.4	5.6	5.7	8.7	4.4	5.8	5.9	9.1	4.4	5.7	5.7	8.7
	SE	0.0678	0.1130	0.0751	0.0834	0.0665	0.2541	0.0803	0.1741	0.0695	0.1048	0.0803	0.0858
Percentage of households with a car or automobile	Percentage	7.3	15.7	18.2	45.2	6.3	15.7	16.4	44.1	8.4	16.9	18.3	45.6
	SE	0.6312	1.2908	0.8280	0.6048	0.4906	2.2290	0.7696	1.2281	0.6510	1.2255	0.8948	0.6214
Percentage of students with good or excellent results in standardized tests at the municipality level	Percentage	31.6	34.8	35.9	39.6	31.0	34.9	35.1	39.4	31.8	35.2	36.2	39.8
	SE	0.4253	0.4311	0.2579	0.1666	0.5414	0.4934	0.3419	0.2169	0.4224	0.4005	0.2630	0.1725
Child mortality rate at the municipal level	Percentage	21.0	17.1	17.2	21.1	16.8	16.8	13.2	21.1	16.8	17.2	16.4	12.9
	SE	0.4050	0.3825	0.2466	0.1241	0.4745	0.8512	0.2537	0.1504	0.4186	0.4023	0.2243	0.1208
Lower bound													
Household head's formal schooling years	Percentage	4.8	4.7	5.9	9.1	5.2	7.2	6.3	9.6	5.2	5.0	5.8	9.2
	SE	0.0749	0.0934	0.0820	0.0580	0.0751	1.1469	0.1062	0.1157	0.0667	0.5807	0.1258	0.0581
Percentage of the household heads who had a diabetes mellitus detection test in the last 12 months	Percentage	37.3	32.5	40.5	52.7	37.1	23.7	42.7	51.4	37.9	38.7	44.1	52.9
	SE	1.0046	9.2261	1.1137	0.5822	1.0229	19.0483	1.2251	1.1506	0.8893	6.4817	1.5652	0.5898
Percentage of the household heads who had their blood pressure measured in the last 12 months	Percentage	53.8	71.1	57.8	70.3	53.6	50.2	58.0	70.8	54.8	49.5	60.8	70.7
	SE	1.0841	9.1699	1.1336	0.5059	1.0551	28.3882	1.1969	1.2629	0.9456	6.7829	1.5450	0.5154
Household members have access to health services from IMSS	Percentage	12.4	30.0	22.1	43.1	10.9	0.0	21.4	40.5	15.1	28.2	22.9	43.5
	SE	0.7212	9.3830	0.9329	0.6079	0.5928	1.0705	1.5904	0.6512	6.4464	1.4732	0.6160	0.6160
Household members have access to health services from private institutions	Percentage	19.9	26.6	27.6	35.8	15.2	77.3	20.3	29.7	21.7	20.4	26.5	35.7
	SE	0.9587	9.9985	1.0471	0.5790	0.8106	18.3446	1.0561	1.1589	0.8588	5.0385	1.5077	0.5891
At least one member of the household speaks or consider him/herself to be part of an indigenous group	Percentage	23.5	22.5	12.5	5.7	21.1	0.0	12.6	5.5	19.9	15.5	10.1	5.6
	SE	1.5325	9.4252	0.8552	0.2964	1.5528	0.8933	0.4308	1.2398	5.1578	0.9267	0.9267	0.2923
Number of household members from 0 to 12 years old	Percentage	2.0	1.7	1.5	1.0	1.9	1.7	1.4	1.0	1.9	1.7	1.3	0.9
	SE	0.0401	0.2810	0.0309	0.0130	0.0407	0.7581	0.0365	0.0447	0.0332	0.1819	0.0390	0.0132
Percentage of household members from 0 to 12 and from 65 years old or more	Percentage	61.0	17.5	55.8	33.0	61.2	80.5	47.4	32.3	61.6	39.2	45.4	32.8
	SE	1.0861	2.7585	1.1509	0.4749	1.2032	39.3237	1.4357	0.6390	0.9700	4.3052	1.4666	0.4780
Number of household members with a job	Percentage	1.9	5.7	1.5	2.0	1.6	1.2	1.9	1.9	1.7	2.7	1.9	2.1
	SE	0.0393	0.4360	0.0198	0.0158	0.0316	0.1688	0.0378	0.0188	0.0315	0.1662	0.0374	0.0169
Percentage of households which receive social programs cash transfers	Percentage	41.9	13.3	28.9	12.6	48.8	62.9	28.9	14.1	36.7	29.2	33.6	12.1
	SE	1.2556	6.7344	1.0253	0.4345	1.1434	24.5908	1.1178	0.7098	1.0712	7.0093	1.5831	0.4333
Percentage of households with computer	Percentage	4.8	16.6	10.2	37.1	6.1	0.0	14.8	41.4	5.9	11.9	12.4	37.7
	SE	0.4296	8.1692	0.7071	0.5501	0.4074	0.8551	1.7089	0.4472	3.6876	1.1151	0.5627	0.810
Percentage of households with internet access	Percentage	1.8	1.7	4.2	22.7	3.8	0.0	9.6	31.5	2.3	9.2	4.7	23.1
	SE	0.2550	1.0870	0.4643	0.4721	0.3250	0.7068	1.3356	0.2481	3.1938	0.7686	0.4810	0.810
Average number of lightbulbs in the dwelling	Percentage	4.7	8.1	5.4	8.3	4.7	4.4	5.9	8.7	4.8	6.3	5.6	8.3
	SE	0.0703	0.7279	0.0700	0.0752	0.0639	0.8930	0.0931	0.1609	0.0611	0.4948	0.1122	0.0767
Percentage of households with a car or automobile	Percentage	10.1	22.6	15.9	41.4	8.7	18.2	15.6	40.5	11.5	19.7	17.4	41.8
	SE	0.6628	9.5709	0.8262	0.5688	0.5395	17.7719	0.8488	1.4822	0.5990	5.5662	1.2322	0.5766
Percentage of students with good or excellent results in standardized tests at the municipality level	Percentage	32.3	35.4	35.6	39.0	32.2	36.1	35.1	38.9	33.1	33.1	36.5	39.2
	SE	0.3989	2.0320	0.2735	0.1685	0.4479	0.6082	0.4058	0.2361	0.3509	1.7948	0.3395	0.1715
Child mortality rate at the municipal level	Percentage	20.3	14.3	17.4	13.7	19.7	13.5	17.1	13.5	19.5	21.4	16.1	13.4
	SE	0.3856	0.8842	0.2464	0.1331	0.4021	1.7382	0.3171	0.1736	0.3532	2.0458	0.2391	0.1282

¹ Upper bound estimates are obtained using a random selection of the target year results for each household in the base year, for example from 2006 results to 2008 households.

² Population in multidimensional poverty both at the base year and at the estimated year, also called "Chronically poor".

³ Population in multidimensional poverty at the base year, but not poor at the estimated year, also called "Ascending".

⁴ Population not in multidimensional poverty at the base year, but poor at the estimated year, also called "Descending".

⁵ Population not in multidimensional poverty neither at the base year nor at the estimated year, also called "Sustainable non-poor".

Notes: Standard errors shown in percentages.

Source: author's elaboration using the Encuesta Nacional de Ingresos y Gastos de los Hogares 2006, 2008 and 2010.

Table A2.5 Selected social indicators for each of the transition matrix groups. Upper and lower bounds of social mobility, 2006-2008, 2008-2010 and 2010-2008. Model 2.

Social indicators		2006-2008				2008-2010				2010-2008			
		Estimated percentage (2008 sample)				Estimated percentage (2010 sample)				Estimated percentage (2008 sample)			
		Poor, Poor ¹	Poor, Non-poor ²	Non-poor, Poor ³	Non-poor, Non-poor ⁴	Poor, Poor ¹	Poor, Non-poor ²	Non-poor, Poor ³	Non-poor, Non-poor ⁴	Poor, Poor ¹	Poor, Non-poor ²	Non-poor, Poor ³	Non-poor, Non-poor ⁴
Upper bound^a													
Household head's formal schooling years	Percentage	4.5	5.3	6.0	9.6	4.9	5.8	6.4	10.0	4.7	5.7	5.9	9.6
	SE	0.0800	0.1355	0.0863	0.0679	0.0917	0.1729	0.0925	0.0734	0.0751	0.1322	0.0950	0.0686
Percentage of the household heads who had a diabetes mellitus detection test in the last 12 months	Percentage	35.9	43.5	40.1	54.1	37.4	45.6	41.9	53.5	44.6	40.3	53.8	53.8
	SE	1.1778	1.7305	1.1037	0.6527	1.0786	1.8865	1.0669	0.7069	1.1144	1.6205	1.1558	0.6550
Percentage of the household heads who had their blood pressure measured in the last 12 months	Percentage	53.7	61.2	58.8	71.7	54.1	62.5	58.7	71.0	53.5	61.7	59.3	71.6
	SE	1.2420	1.7213	1.1166	0.5570	1.1162	1.9643	1.0749	0.6594	1.1771	1.5808	1.2012	0.5626
Household members have access to health services from IMSS	Percentage	12.9	27.6	17.7	44.1	14.2	24.7	18.6	44.1	13.3	26.9	17.3	44.1
	SE	0.7520	1.5901	0.8141	0.6722	0.7579	1.6497	0.8842	0.7616	0.6991	1.4379	0.8514	0.6772
Household members have access to health services from private institutions	Percentage	23.4	34.6	26.3	36.3	16.0	26.0	20.7	29.9	23.4	35.8	26.6	36.3
	SE	1.2639	1.8565	1.1215	0.6397	1.0089	1.8960	1.0472	0.7155	1.1372	1.7373	1.2042	0.6438
At least one member of the household speaks or consider him/herself to be part of an indigenous group	Percentage	22.8	11.1	12.6	4.8	18.9	9.5	11.7	4.5	21.9	10.2	12.7	5.0
	SE	1.8043	1.1736	1.0551	0.3394	1.5261	1.1996	0.9822	0.3655	1.7001	1.0469	1.0868	0.3481
Number of household members from 0 to 12 years old	Percentage	2.1	3.5	1.4	0.9	1.9	1.1	1.4	0.9	2.1	1.5	1.4	0.9
	SE	4.1627	4.5916	2.8505	1.3777	4.0390	5.0166	3.3538	1.6026	3.8499	4.0804	3.0594	1.4093
Percentage of household members from 0 to 12 and from 65 years old or more	Percentage	65.6	40.5	49.3	31.8	65.0	40.9	44.7	30.3	44.3	45.4	31.1	31.1
	SE	1.3469	1.6616	1.0859	0.5165	1.4096	1.7451	1.0045	0.5512	1.2766	1.6648	1.0611	0.5067
Number of household members with a job	Percentage	1.8	2.4	1.7	2.0	1.5	1.6	1.9	2.0	1.6	1.9	1.9	2.1
	SE	3.8278	6.1409	2.4967	1.7213	2.9448	5.3140	3.4827	1.8972	3.2833	4.9566	3.0501	1.8277
Percentage of households which receive social programs cash transfers	Percentage	42.6	25.1	34.1	11.4	47.7	33.1	33.2	41.8	24.9	34.1	34.1	11.4
	SE	1.3790	1.6068	1.2173	0.4889	1.3177	1.9847	1.0872	0.5290	1.3041	1.5162	1.2828	0.4915
Percentage of households with computer	Percentage	2.8	9.8	11.2	40.1	4.3	13.9	15.8	46.7	3.3	11.4	11.1	40.1
	SE	0.3708	1.0309	0.7532	0.6530	0.4341	1.2896	0.8299	0.7587	0.3703	1.0338	0.7947	0.6535
Percentage of households with internet access	Percentage	1.0	3.8	5.0	25.2	2.7	8.8	10.0	36.7	1.2	5.5	5.1	24.9
	SE	0.2455	0.6379	0.5337	0.5772	0.3442	1.0825	0.6649	0.7516	0.2472	0.7100	0.5738	0.5737
Average number of lightbulbs in the dwelling	Percentage	4.4	5.7	5.6	8.7	4.5	5.7	6.0	9.1	4.5	5.8	5.7	8.7
	SE	0.0702	0.1221	0.0824	0.0787	0.0992	0.1235	0.0831	0.1001	0.0646	0.1141	0.0894	0.0789
Percentage of households with a car or automobile	Percentage	7.9	17.0	17.8	45.8	7.3	17.3	18.0	45.2	8.8	18.5	17.7	45.8
	SE	0.6758	1.4661	0.8646	0.651	0.5849	1.4865	0.9021	0.7274	0.6680	1.3513	0.9126	0.6427
Percentage of students with good or excellent results in standardized tests at the municipality level	Percentage	32.3	35.9	35.4	39.5	32.6	35.8	35.6	39.6	32.3	35.9	35.5	39.5
	SE	0.4011	0.4265	0.3048	0.2089	0.4702	0.4630	0.4422	0.2021	0.3860	0.4182	0.3080	0.2044
Child mortality rate at the municipal level	Percentage	19.8	16.2	17.0	13.1	18.6	15.7	15.9	12.7	19.6	16.2	16.9	13.1
	SE	0.3001	0.3054	0.2128	0.1128	0.3470	0.3312	0.2263	0.1202	0.2765	0.2865	0.2239	0.1133
Lower bound													
Household head's formal schooling years	Percentage	4.9	4.7	5.9	9.1	5.2	4.2	6.4	9.8	5.2	5.5	5.7	9.1
	SE	0.0820	0.5035	0.0834	0.0683	0.0850	0.9100	0.1047	0.0739	0.0692	0.6121	0.1186	0.0677
Percentage of the household heads who had a diabetes mellitus detection test in the last 12 months	Percentage	37.7	41.4	39.6	52.9	38.5	37.0	41.7	52.6	37.5	51.7	42.0	52.7
	SE	1.1429	6.1081	1.1543	0.6209	0.9814	16.7325	1.2596	0.6679	0.9705	7.9293	1.5407	0.6129
Percentage of the household heads who had their blood pressure measured in the last 12 months	Percentage	56.1	63.1	57.4	70.5	55.7	46.0	57.5	70.0	55.2	72.6	62.2	70.4
	SE	1.2578	6.4130	1.1334	0.5439	1.0000	1.3206	0.6376	1.0450	6.9153	1.5970	1.5519	0.5462
Household members have access to health services from IMSS	Percentage	12.3	37.4	20.6	42.2	13.3	19.3	21.9	41.9	14.5	31.9	19.8	42.3
	SE	0.7303	6.6729	0.9206	0.6339	0.6933	12.0890	0.6643	1.1008	0.6643	7.7552	1.2758	0.6348
Household members have access to health services from private institutions	Percentage	23.2	27.6	26.3	36.0	17.0	44.2	20.7	29.4	23.4	17.6	28.3	36.1
	SE	1.3241	5.4158	1.0671	0.6260	1.1046	21.4492	1.0815	0.8815	5.1041	1.0886	1.5489	0.6265
At least one member of the household speaks or consider him/herself to be part of an indigenous group	Percentage	20.0	12.1	12.4	5.5	17.6	20.6	11.1	5.0	18.3	6.4	11.9	5.6
	SE	1.7928	3.7336	0.9806	0.3608	1.3447	12.4641	1.0872	0.3871	1.4975	3.0663	1.2175	0.3608
Number of household members from 0 to 12 years old	Percentage	1.9	1.6	1.5	0.9	1.8	1.6	1.5	0.9	1.9	2.0	1.3	0.9
	SE	0.0360	0.2317	0.0294	0.0135	0.0314	0.5948	0.0507	0.0154	0.0293	0.2019	0.0416	0.0136
Percentage of household members from 0 to 12 and from 65 years old or more	Percentage	58.7	20.5	55.2	33.3	59.2	66.0	47.5	31.5	60.2	38.3	46.4	33.0
	SE	1.1691	2.7664	1.2964	0.5155	1.0931	31.1257	1.5996	0.5331	1.0221	2.7895	1.7194	0.5151
Number of household members with a job	Percentage	1.9	4.8	1.4	2.0	1.5	1.2	2.0	1.9	1.7	2.9	1.8	2.0
	SE	0.0370	0.2368	0.0201	0.0166	0.0233	0.2711	0.0483	0.0178	0.0296	0.2863	0.0389	0.0172
Percentage of households which receive social programs cash transfers	Percentage	39.9	21.5	35.5	12.8	46.8	86.3	29.2	15.2	37.2	18.5	41.6	12.8
	SE	1.4643	4.9435	1.2674	0.5010	1.1495	8.3029	1.2823	0.5536	1.2176	7.5080	1.8149	0.4952
Percentage of households with computer	Percentage	5.0	13.1	9.7	36.7	6.6	3.0	16.1	43.0	6.0	17.9	10.3	36.6
	SE	0.4993	4.0594	0.7634	0.4611	3.1237	0.9975	0.7201	0.4789	5.4628	1.0666	0.6198	0.4611
Percentage of households with internet access	Percentage	2.3	5.8	4.0	22.8	3.8	0.0	10.8	33.5	2.6	14.4	4.2	22.7
	SE	0.3880	2.4725	0.4520	0.5335	0.3327	#1VALOR!	0.8734	0.3381	0.3381	5.0234	0.5951	0.5308
Average number of lightbulbs in the dwelling	Percentage	4.8	6.9	5.3	8.3	4.8	3.8	6.0	8.7	4.9	7.2	5.4	8.3
	SE	0.0774	0.4349	0.0768	0.0737	0.0599	0.3717	0.0979	0.0927	0.0660	0.3915	0.1161	0.0735
Percentage of households with a car or automobile	Percentage	10.5	13.3	16.2	42.5	9.8	11.5	17.7	42.0	11.8	16.1	16.5	42.5
	SE	0.7407	4.3520	0.8405	0.5992	0.5751	7.9086	1.0743	0.6897	0.6461	5.3931	1.2122	0.5997
Percentage of students with good or excellent results in standardized tests at the municipality level	Percentage	33.2	37.2	35.3	39.2	33.2	36.4	35.7	39.2	33.7	38.0	35.5	39.2
	SE	0.3338	0.8563	0.3415	0.2037	0.4369	1.1257	0.4928	0.2117	0.3115	1.4331	0.4091	0.2035
Child mortality rate at the municipal level	Percentage	19.1	14.0	16.8	13.3	18.2	14.8	15.6	13.0	18.4	13.9	17.1	13.3
	SE	0.2976	0.5802	0.2013	0.1142	0.3162	1.5932	0.2428	0.1230	0.2547	1.0825	0.2504	0.1147

^aUpper bound estimates are obtained using a random selection of the target year residuals for each household in the base year, for example from 2006 residuals to 2008 households.

¹ Population in multidimensional poverty both at the base year and at the estimated year, also called "Chronically poor".

² Population in multidimensional poverty at the base year, but non-poor at the estimated year, also called "Ascending".

³ Population not in multidimensional poverty at the base year, but poor at the estimated year, also called "Descending".

⁴ Population not in multidimensional poverty neither at the base year nor at the estimated year, also called "Sustainable non-poor".

Notes: Standard errors shown in percentages.

Source: author's elaboration using the Encuesta Nacional de Ingresos y Gastos de los Hogares 2006, 2008 and 2010.

Table A2.6 Selected social indicators for each of the transition matrix groups. Upper and lower bounds of social mobility, 2006-2008, 2008-2010 and 2010-2008. Model 3.

Social indicators		2006-2008				2008-2010				2010-2008			
		Estimated percentage (2008 sample)				Estimated percentage (2010 sample)				Estimated percentage (2008 sample)			
		Poor, Poor ¹	Poor, Non-poor ²	Non-poor, Poor ³	Non-poor, Non-poor ⁴	Poor, Poor ¹	Poor, Non-poor ²	Non-poor, Poor ³	Non-poor, Non-poor ⁴	Poor, Poor ¹	Poor, Non-poor ²	Non-poor, Poor ³	Non-poor, Non-poor ⁴
Upper bound^a													
Household head's formal schooling years	Percentage	4.3	5.2	6.1	9.6	4.9	6.2	6.1	9.8	4.7	6.1	5.7	9.5
	SE	0.0789	0.1278	0.0822	0.0683	0.1003	0.1678	0.0833	0.0754	0.0879	0.1558	0.0816	0.0686
Percentage of the household heads who had a diabetes mellitus detection test in the last 12 months	Percentage	35.7	44.2	39.8	53.9	36.8	44.9	41.2	53.4	36.4	44.6	39.8	53.7
	SE	1.2240	1.6696	1.0381	0.6507	1.1276	1.7651	0.9937	0.7019	1.3046	1.7185	1.0327	0.6537
Percentage of the household heads who had their blood pressure measured in the last 12 months	Percentage	54.0	62.0	57.9	71.5	54.0	62.6	58.0	70.9	54.7	62.1	58.0	71.4
	SE	1.2675	1.5969	1.1078	0.5643	1.1871	1.7962	0.9856	0.6728	1.3448	1.6637	1.0856	0.5690
Household members have access to health services from IMSS	Percentage	12.1	27.3	18.0	44.0	13.0	23.2	18.5	43.7	11.5	24.4	18.3	44.5
	SE	0.7225	1.4778	0.8007	0.6687	0.8252	1.5655	0.8253	0.7603	0.7607	1.4724	0.7931	0.6679
Household members have access to health services from private institutions	Percentage	23.1	34.1	26.5	36.5	16.1	26.2	19.9	30.3	22.3	35.6	25.8	36.0
	SE	1.2971	1.7117	1.0521	0.6450	1.0938	1.7231	0.9868	0.7333	1.3386	1.7966	1.0005	0.6437
At least one member of the household speaks or consider him/herself to be part of an indigenous group	Percentage	24.9	11.6	11.2	4.7	20.8	10.3	11.8	4.3	23.6	10.8	12.5	4.9
	SE	1.8859	1.1361	1.0008	0.3397	1.6930	1.1861	0.9507	0.3452	1.9653	1.1050	1.0238	0.3417
Number of household members from 0 to 12 years old	Percentage	2.1	1.3	1.4	0.9	1.9	1.0	1.5	0.9	1.9	1.1	1.6	0.9
	SE	4.1997	4.3203	2.8233	1.3894	4.1139	4.3728	3.2235	1.5884	3.7102	4.0729	3.2996	1.4545
Percentage of household members from 0 to 12 and from 65 years old or more	Percentage	67.5	39.7	48.5	31.9	63.9	37.4	48.8	30.8	65.8	40.7	51.3	32.0
	SE	1.3542	1.5043	1.0423	0.5228	1.4188	1.5125	1.0298	0.5467	1.4608	1.5981	1.0270	0.5302
Number of household members with a job	Percentage	1.8	2.3	1.7	2.0	1.6	1.9	1.8	1.9	1.6	1.9	1.8	2.0
	SE	3.8449	5.5798	2.5387	1.7381	3.1985	4.9636	3.0823	1.8994	3.1167	4.8691	3.2926	1.8483
Percentage of households which receive social programs cash transfers	Percentage	48.1	27.9	29.0	10.9	48.2	30.6	36.1	13.7	46.1	26.5	32.4	11.0
	SE	1.3850	1.5660	1.1216	0.4746	1.4131	1.7704	1.0460	0.5502	1.5161	1.6719	1.1733	0.4712
Percentage of households with computer	Percentage	2.9	12.4	10.3	39.9	4.8	15.7	13.3	46.0	2.9	13.5	9.5	39.6
	SE	0.3798	1.0937	0.7054	0.6565	0.5335	1.2936	0.6775	0.7634	0.4127	1.1672	0.6507	0.6520
Percentage of households with internet access	Percentage	1.0	5.4	4.7	24.9	2.9	10.8	8.6	35.9	1.1	6.6	4.2	24.7
	SE	0.2324	0.7066	0.5160	0.5777	0.4015	1.1121	0.5518	0.7403	0.2943	0.8203	0.4660	0.5734
Average number of lightbulbs in the dwelling	Percentage	4.4	5.8	5.6	8.7	4.5	5.8	5.8	9.1	4.2	5.7	5.5	8.7
	SE	0.0725	0.1154	0.0772	0.0787	0.0807	0.1343	0.0740	0.0972	0.1361	0.0742	0.0781	0.0871
Percentage of households with a car or automobile	Percentage	6.7	15.9	18.5	46.2	7.9	20.7	15.7	44.4	8.2	20.8	16.0	45.1
	SE	0.6205	1.3014	0.8606	0.6383	0.7115	1.5196	0.7625	0.7187	0.7294	1.4700	0.7930	0.6434
Percentage of students with good or excellent results in standardized tests at the municipality level	Percentage	31.5	35.4	35.8	39.5	31.9	35.4	35.4	39.5	31.7	35.4	35.7	39.7
	SE	0.4161	0.4257	0.3838	0.2808	0.5167	0.3845	0.2021	0.4257	0.4473	0.4473	0.2782	0.1995
Child mortality rate at the municipal level	Percentage	20.6	16.7	16.3	13.0	19.4	16.3	16.1	12.9	20.4	16.6	16.5	12.9
	SE	0.3081	0.3182	0.1898	0.1091	0.3637	0.3321	0.2243	0.1246	0.3202	0.3122	0.2101	0.1078
Lower bound													
Household head's formal schooling years	Percentage	4.6	3.8	6.3	9.1	5.2	0.0	6.3	9.5	5.1	5.1	5.6	9.1
	SE	0.0742	0.3294	0.0922	0.0666	0.0953	0.0897	0.0741	0.0759	1.4226	0.0970	0.0970	0.0673
Percentage of the household heads who had a diabetes mellitus detection test in the last 12 months	Percentage	36.7	50.4	39.5	52.5	37.7	0.0	42.7	52.6	37.0	34.3	41.6	52.6
	SE	1.1512	5.6910	1.1639	0.6159	0.9876	0.0754	1.1596	1.0476	18.1507	1.3615	0.6157	0.9876
Percentage of the household heads who had their blood pressure measured in the last 12 months	Percentage	55.3	68.4	57.1	70.2	54.8	0.0	58.8	70.0	55.7	37.7	58.8	70.3
	SE	1.1524	5.4622	1.1618	0.5426	1.0425	0.6456	1.1772	0.6456	1.0985	17.8999	1.4074	0.5434
Household members have access to health services from IMSS	Percentage	12.9	44.3	18.5	41.6	13.3	0.0	21.1	41.8	13.4	6.9	20.5	42.0
	SE	0.6914	6.0629	0.8659	0.6230	0.7092	0.0688	0.9812	0.7208	0.6688	5.2984	1.0744	0.6282
Household members have access to health services from private institutions	Percentage	23.2	29.3	27.4	36.3	16.7	0.0	20.8	29.4	22.8	0.0	28.2	36.0
	SE	1.2687	4.9935	1.1347	0.6228	1.2223	0.9727	0.6971	1.1853	0.6971	1.1853	1.2386	0.6198
At least one member of the household speaks or consider him/herself to be part of an indigenous group	Percentage	22.0	9.9	11.4	5.7	18.5	0.0	10.4	5.0	19.9	4.1	10.6	5.6
	SE	1.6911	3.2139	1.0247	0.3645	1.4140	0.9423	0.3869	1.6474	3.7537	1.0227	0.3597	0.3597
Number of household members from 0 to 12 years old	Percentage	2.1	2.4	1.3	0.9	1.9	0.0	1.4	0.9	1.9	1.6	1.5	1.0
	SE	0.0367	0.1689	0.0265	0.0132	0.0368	0.0322	0.0154	0.0306	0.3978	0.0376	0.0137	0.0137
Percentage of household members from 0 to 12 and from 65 years old or more	Percentage	62.2	44.2	50.9	32.9	60.4	0.0	46.6	31.5	60.4	54.5	50.0	33.1
	SE	1.1466	4.2823	1.2280	0.5031	1.1327	1.4505	0.5277	1.0640	18.2140	1.4254	0.5048	0.5048
Number of household members with a job	Percentage	1.8	4.2	1.6	2.0	1.6	0.0	1.8	1.9	1.6	1.4	2.0	2.0
	SE	0.0357	0.2277	0.0319	0.0167	0.0308	0.0336	0.0178	0.0313	0.2969	0.0340	0.0173	0.0173
Percentage of households which receive social programs cash transfers	Percentage	44.1	23.3	29.2	13.2	45.0	0.0	33.7	15.3	41.1	51.0	31.0	12.9
	SE	1.3673	4.5778	1.2228	0.5908	1.2736	0.0754	1.1554	0.5722	1.3372	19.3900	0.3773	0.4982
Percentage of households with computer	Percentage	5.1	17.9	9.1	36.2	7.2	0.0	14.2	42.9	5.5	8.5	9.7	36.4
	SE	0.4692	4.2349	0.7210	0.6114	0.5710	0.8283	0.7213	0.4886	8.3364	0.8295	0.6142	0.6142
Percentage of households with internet access	Percentage	2.2	4.3	4.0	22.4	4.4	0.0	9.1	33.5	2.1	0.0	5.0	22.5
	SE	0.3360	2.0213	0.5018	0.5213	0.4013	0.7104	0.7121	0.3198	0.6399	0.6399	0.5244	0.5244
Average number of lightbulbs in the dwelling	Percentage	4.8	7.0	5.3	8.3	4.9	0.0	5.7	8.7	4.7	4.5	5.7	8.3
	SE	0.0693	0.2854	0.0826	0.0718	0.0655	0.0891	0.0929	0.0719	1.2031	0.0873	0.0722	0.0722
Percentage of households with a car or automobile	Percentage	8.6	10.3	19.3	42.3	9.6	0.0	17.2	42.0	11.6	12.3	15.6	42.1
	SE	0.6134	3.6624	0.9470	0.5969	0.6593	0.9228	0.6853	0.6906	9.3065	0.9458	0.5960	0.5960
Percentage of students with good or excellent results in standardized tests at the municipality level	Percentage	32.7	37.9	35.2	39.0	33.2	0.0	35.2	39.2	33.1	32.1	36.0	39.1
	SE	0.3396	0.6813	0.3902	0.2073	0.4691	0.4191	0.2106	0.3286	5.0784	0.3642	0.2010	0.2010
Child mortality rate at the municipal level	Percentage	19.5	14.5	16.6	13.5	18.2	0.0	15.9	13.0	19.0	32.0	16.2	13.3
	SE	0.2833	0.7024	0.2028	0.1165	0.3300	0.2163	0.1236	0.2704	10.3402	0.2369	0.1127	0.1127

^aUpper bound estimates are obtained using a random selection of the target year results for each household in the base year, for example from 2006 results to 2008 households.

¹ Population in multidimensional poverty both at the base year and at the estimated year, also called "Chronically poor".

² Population in multidimensional poverty at the base year, but non-poor at the estimated year, also called "Ascending".

³ Population in multidimensional poverty at the base year, but poor at the estimated year, also called "Descending".

⁴ Population not in multidimensional poverty neither at the base year nor at the estimated year, also called "Sustainable non-poor".

Notes: Standard errors shown in percentages.

Source: author's elaboration using the Encuesta Nacional de Ingresos y Gastos de los Hogares 2006, 2008 and 2010.

Table A2.7 Poverty transition matrices for the upper and lower bounds. 2000-2002, 2002-2004 and 2004-2006.

		2000-2002		2002-2004		2004-2006	
		Upper bound	Lower bound	Upper bound	Lower bound	Upper bound	Lower bound
Food poverty							
Poor, Poor ¹	Percentage	18.0	6.1	13.5	5.0	12.5	4.3
	SE	0.2966	0.3238	0.2274	0.2367	0.2285	0.1784
Poor, Non-poor ²	Percentage	2.4	9.5	1.0	7.7	2.9	9.4
	SE	0.1172	0.4480	0.0660	0.4082	0.1153	0.3582
Non-poor, Poor ³	Percentage	1.9	10.0	3.9	11.4	1.3	9.4
	SE	0.1063	0.3238	0.1286	0.2367	0.0788	0.1784
Non-poor, Non-poor ⁴	Percentage	77.7	74.4	81.6	75.8	83.4	76.9
	SE	0.3213	0.4480	0.2577	0.4082	0.2577	0.3582
Capabilities poverty							
Poor, Poor ¹	Percentage	24.6	9.6	19.7	8.3	18.8	7.6
	SE	0.3323	0.3859	0.2645	0.2744	0.2705	0.2529
Poor, Non-poor ²	Percentage	3.4	12.0	1.4	10.2	3.9	11.8
	SE	0.1407	0.4991	0.0772	0.4241	0.1345	0.3930
Non-poor, Poor ³	Percentage	2.1	12.9	5.0	15.2	1.8	13.0
	SE	0.1101	0.3859	0.1451	0.2744	0.0930	0.2529
Non-poor, Non-poor ⁴	Percentage	69.9	65.5	73.9	66.3	75.4	67.5
	SE	0.3540	0.4991	0.2920	0.4241	0.2981	0.3930
Patrimonial poverty							
Poor, Poor ¹	Percentage	46.9	26.5	42.1	24.4	40.8	22.9
	SE	0.3851	0.4365	0.3285	0.5553	0.3402	0.3569
Poor, Non-poor ²	Percentage	4.3	15.4	2.7	14.6	5.5	16.2
	SE	0.1567	0.5023	0.1086	0.4773	0.1585	0.3431
Non-poor, Poor ³	Percentage	2.9	19.5	5.1	21.8	1.8	19.7
	SE	0.1302	0.4365	0.1461	0.5553	0.0914	0.3569
Non-poor, Non-poor ⁴	Percentage	45.9	38.6	50.0	39.2	51.8	41.1
	SE	0.3845	0.5023	0.3326	0.4773	0.3458	0.3431

¹ Population in multidimensional poverty both at the base year and at the estimated year, also called "Chronically poor".

² Population in multidimensional poverty at the base year, but non-poor at the estimated year, also called "Ascending".

³ Population not in multidimensional poverty at the base year, but poor at the estimated year, also called "Descending".

⁴ Population not in multidimensional poverty neither at the base year nor at the estimated year, also called "Sustainable non-poor".

Notes: Standard errors shown in percentages.

Source: author's elaboration using the Encuesta Nacional de Ingresos y Gastos de los Hogares 2006, 2008 and 2010.

Table A2.8 Descriptive statistics of household, dwelling and household's head characteristics considered in the regression models for per capita real income 2006, 2008 and 2010.

	2006		2008		2010		Difference 2006-2008				Difference 2008-2010			
	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Z	P(Z)	Mean	SE	Z	P(Z)
Household's head characteristics														
Age (years)	46.10	0.100	47.10	0.059	46.90	0.059	-0.99	0.116	-8.542	0.000	0.20	0.083	2.374	0.018
Age group														
18 to 29 years old	0.11	0.004	0.09	0.002	0.10	0.003	0.02	0.004	4.793	0.000	-0.01	0.003	-2.119	0.034
30 to 44 years old	0.40	0.006	0.39	0.003	0.39	0.005	0.01	0.007	1.700	0.089	0.00	0.006	0.089	0.929
45 to 64 years old	0.36	0.006	0.39	0.003	0.38	0.004	-0.03	0.007	-4.310	0.000	0.01	0.005	1.632	0.103
65 years old or more	0.13	0.004	0.13	0.002	0.13	0.002	0.00	0.004	-0.797	0.425	0.00	0.003	-0.819	0.413
Sex (Man=1)	0.79	0.003	0.79	0.002	0.80	0.002	0.00	0.003	0.292	0.770	-0.02	0.002	-6.685	0.000
Literacy=1	0.90	0.002	0.91	0.001	0.91	0.001	-0.01	0.002	-3.613	0.000	0.00	0.002	-2.317	0.021
Years of formal schooling	7.41	0.034	7.38	0.020	7.69	0.020	0.04	0.040	0.917	0.359	-0.51	0.028	-11.077	0.000
Experience (age - schooling)	38.69	0.116	39.72	0.068	39.20	0.068	-1.03	0.134	-7.681	0.000	0.52	0.096	5.443	0.000
Experience squared	1774.37	10.395	1852.63	6.204	1817.92	6.165	-78.25	12.106	-6.464	0.000	34.70	8.747	3.967	0.000
Highest educational level														
Less than primary school	0.31	0.006	0.31	0.003	0.28	0.003	-0.01	0.006	-0.933	0.351	0.03	0.005	7.234	0.000
Primary school or incomplete secondary school	0.25	0.005	0.24	0.003	0.24	0.005	0.01	0.006	1.307	0.191	0.00	0.006	0.131	0.896
Secondary school or less than high-school	0.25	0.005	0.25	0.003	0.27	0.004	0.00	0.006	-0.387	0.699	-0.02	0.005	-3.492	0.000
Highschool	0.20	0.004	0.20	0.002	0.21	0.003	0.00	0.005	0.081	0.935	-0.02	0.004	-4.615	0.000
Economic status														
Not In the labour force	0.14	0.004	0.17	0.002	0.17	0.003	-0.03	0.005	-6.142	0.000	0.00	0.003	0.781	0.435
Employed or self-employed	0.84	0.004	0.80	0.002	0.79	0.003	0.04	0.005	8.634	0.000	0.01	0.004	2.276	0.023
Unemployed	0.01	0.001	0.02	0.001	0.04	0.001	-0.01	0.002	-8.664	0.000	-0.01	0.002	-6.881	0.000
Occupational category														
Cat. 1	0.03	0.002	0.02	0.001	0.02	0.001	0.01	0.002	4.183	0.000	0.00	0.001	-2.609	0.009
Cat. 2	0.05	0.002	0.04	0.001	0.06	0.002	0.00	0.002	0.942	0.346	-0.02	0.002	-7.835	0.000
Cat. 3	0.07	0.003	0.06	0.001	0.07	0.002	0.01	0.003	2.154	0.031	-0.01	0.002	-2.864	0.004
Cat. 4	0.17	0.004	0.17	0.002	0.17	0.003	0.00	0.005	-0.915	0.360	0.00	0.003	1.425	0.154
Cat. 5	0.12	0.004	0.11	0.002	0.11	0.002	0.01	0.005	1.355	0.176	0.00	0.003	-0.392	0.695
Cat. 6	0.03	0.002	0.03	0.001	0.03	0.001	0.00	0.002	0.316	0.752	0.00	0.002	-0.506	0.613
Cat. 7	0.15	0.004	0.14	0.002	0.12	0.006	0.00	0.005	0.848	0.396	0.02	0.006	3.988	0.000
Cat. 8	0.14	0.004	0.13	0.002	0.13	0.003	0.01	0.005	1.430	0.153	0.01	0.004	1.431	0.152
Cat. 9	0.10	0.003	0.09	0.002	0.09	0.003	0.01	0.004	2.701	0.007	0.00	0.003	-1.420	0.156
Dwelling characteristics														
Number of rooms	4.00	0.012	4.00	0.007	4.02	0.007	0.00	0.014	-0.035	0.972	-0.02	0.010	-2.043	0.041
Overcrowding index	1.56	0.008	1.55	0.004	1.51	0.004	0.01	0.009	1.337	0.181	0.04	0.006	6.713	0.000
Floors material														
Dirt	0.08	0.003	0.07	0.002	0.05	0.002	0.01	0.004	2.367	0.018	0.02	0.002	9.719	0.000
Concrete	0.55	0.006	0.57	0.003	0.56	0.004	-0.02	0.007	-2.659	0.008	0.00	0.005	0.773	0.440
Wood, carpet, marble or others	0.37	0.005	0.37	0.003	0.39	0.004	0.01	0.006	1.438	0.150	-0.03	0.005	-5.219	0.000
Ceilings material														
Garbage, metal or palm-leaves	0.24	0.005	0.22	0.003	0.22	0.003	0.02	0.006	3.133	0.002	0.01	0.004	1.549	0.121
Wood or tiles	0.07	0.003	0.06	0.001	0.05	0.001	0.01	0.003	4.190	0.000	0.01	0.002	4.965	0.000
Concrete or others	0.69	0.006	0.72	0.003	0.73	0.003	-0.03	0.006	-5.106	0.000	-0.02	0.004	-3.725	0.000
Walls material														
Garbage, metal or palm-leaves	0.02	0.001	0.02	0.001	0.02	0.001	0.00	0.002	-0.464	0.643	0.00	0.001	3.286	0.001
Wood or adobe	0.12	0.004	0.14	0.002	0.13	0.002	-0.02	0.004	-5.307	0.000	0.02	0.003	5.584	0.000
Bricks, block or concrete	0.86	0.004	0.83	0.002	0.86	0.002	0.02	0.004	5.181	0.000	-0.02	0.003	-6.416	0.000
Water supply														
Dwell, river, lake or other=1	0.06	0.003	0.09	0.002	0.06	0.002	-0.03	0.003	-7.778	0.000	0.03	0.003	10.178	0.000
Tanker truck=1	0.02	0.002	0.02	0.001	0.02	0.001	0.00	0.002	0.621	0.534	0.00	0.001	-0.980	0.327
Other dwelling=1	0.01	0.001	0.01	0.001	0.01	0.001	0.00	0.001	1.273	0.203	0.00	0.001	0.899	0.369
Public faucet or hydrant=1	0.01	0.002	0.00	0.000	0.00	0.000	0.00	0.002	2.045	0.041	0.00	0.001	0.586	0.558
Public service out of the dwelling but inside the property=1	0.22	0.005	0.20	0.003	0.23	0.003	0.01	0.006	2.449	0.014	-0.03	0.004	-6.526	0.000
Public service inside the dwelling=1	0.68	0.006	0.68	0.003	0.68	0.004	0.00	0.007	0.663	0.507	0.00	0.005	-0.035	0.972
<i>Continue</i>														
Water supply frequency														
No water service	0.09	0.004	0.12	0.002	0.09	0.002	-0.03	0.004	-6.697	0.000	0.03	0.003	9.271	0.000
Daily	0.70	0.006	0.64	0.003	0.65	0.005	0.06	0.007	9.454	0.000	-0.01	0.006	-1.823	0.068
Every other day	0.14	0.004	0.16	0.003	0.14	0.006	-0.02	0.005	-4.312	0.000	0.02	0.006	3.230	0.001
Twice a week or other	0.07	0.003	0.08	0.002	0.11	0.004	-0.01	0.004	-3.031	0.002	-0.04	0.004	-9.345	0.000
Household characteristics														
Equalised household size	4.32	0.013	4.38	0.008	4.28	0.008	-0.06	0.015	-3.702	0.000	0.10	0.011	9.154	0.000
Number of members	4.95	0.016	5.00	0.010	4.87	0.009	-0.05	0.018	-2.688	0.007	0.13	0.013	10.129	0.000
Household belongs to someone in the household or is being paid=1	0.74	0.003	0.74	0.002	0.74	0.002	0.00	0.004	-0.656	0.512	0.00	0.003	0.869	0.385
Number of members from 0 to 11 years old	1.35	0.009	1.33	0.006	1.28	0.005	0.02	0.011	2.262	0.024	0.05	0.008	6.229	0.000
Number of members from 12 to 64 years old	3.37	0.012	3.44	0.007	3.35	0.007	-0.07	0.014	-4.885	0.000	0.10	0.010	9.449	0.000
Number of members from 65 years old or older	0.23	0.004	0.23	0.002	0.24	0.002	0.00	0.004	-1.006	0.315	-0.01	0.003	-2.800	0.005
Age dependency index ²	0.47	0.004	0.44	0.002	0.43	0.002	0.02	0.004	4.677	0.000	0.01	0.003	3.452	0.001
Age dependency index >= 0.30=1	0.48	0.003	0.50	0.002	0.50	0.002	-0.01	0.004	-3.600	0.000	0.00	0.003	-0.224	0.823
Number of members perceiving income	2.50	0.010	2.69	0.006	2.67	0.006	-0.19	0.012	-16.094	0.000	0.02	0.009	2.107	0.035
Number of occupied members	1.91	0.008	1.85	0.005	1.77	0.005	0.06	0.009	6.816	0.000	0.08	0.007	11.588	0.000
Economic dependency index ³	0.41	0.002	0.39	0.001	0.39	0.001	0.02	0.002	11.530	0.000	0.01	0.001	4.093	0.000
Economic dependency index greater or equal to 1/3	0.48	0.003	0.50	0.002	0.50	0.002	-0.01	0.004	-3.702	0.000	0.00	0.003	-0.108	0.914
Household class														
Unipersonal	0.02	0.001	0.02	0.000	0.03	0.001	0.00	0.001	1.886	0.059	0.00	0.001	-4.424	0.000
Nuclear	0.64	0.006	0.64	0.003	0.64	0.005	0.00	0.007	0.221	0.825	0.00	0.006	-0.311	0.756
Extended, composite or others	0.34	0.006	0.34	0.003	0.34	0.005	0.00	0.007	-0.459	0.646	0.01	0.006	0.931	0.352
Household services														
Telephone line	0.52	0.003	0.47	0.002	0.43	0.002	0.05	0.004	11.399	0.000	0.05	0.003	16.108	0.000
Mobile phone	0.50	0.003	0.54	0.002	0.64	0.002	-0.04	0.004	-9.531	0.000	-0.10	0.003	-37.033	0.000
Cable TV	0.20	0.003	0.22	0.002	0.28	0.002	-0.01	0.003	-4.332	0.000	-0.06	0.002	-24.784	0.000
Internet	0.08	0.002	0.13	0.001	0.20	0.002	-0.05	0.002	-22.337	0.000	-0.07	0.002	-30.630	0.000
Dwelling equipment														
Heating	0.01	0.001	0.02	0.001	0.02	0.001	-0.01	0.001	-7.382	0.000	0.00	0.001	-4.104	0.000
Shower	0.62	0.003	0.63	0.002	0.62	0.002	-0.01	0.004	-3.061	0.002	0.01	0.003	2.491	0.013
Sleep in kitchen	0.09	0.002	0.07	0.001	0.07	0.001	0.03	0.002	11.863	0.000	0.00	0.001	-1.034	0.301
Toilet	0.95	0.001	0.94	0.001	0.96	0.001	0.01	0.002	6.362	0.000	-0.02	0.001	-18.102	0.000