

Mexican households' expenditure behavior

1. Introduction

Mexico is a country characterized, among others, by its economic inequality; the income share of the highest 10% accounts for 34.6% of the country's total income, while the lowest 10% accounts for only 1.6%. The socioeconomic disparities are reflected in households' expenditure patterns that show the marginalization of the poorest class from spending in leisure, communication or health. We thus believe that a better understanding of expenditure patterns could aid public policy making in areas that promote social and economic development.

The objective of this work is to study the distribution of households' expenses across income deciles and the relationship of the patterns with demographic variables. Information on expenditure behavior comes from the Mexican Survey of Household Income and Expenditures (ENIGH) conducted by the Mexican Institute of Geography and Statistics (INEGI).

From the beginning of this work it was intuitive that income would play an important role. Nevertheless, literature on the subject further strengthen this hypothesis, Jääskelä and Windsor (2011) explain how the share on expenditures varies as a function of income; in particular the authors explain a relationship known as Engel's law: *"the share of expenditure on necessities, such as food, decreases with increasing spending capacity (see, for instance, Lewbel (2008)). The corollary of this law is that the share of expenditure on discretionary items (which includes things like the theatre and sports lessons) rises with increasing spending capacity"*. Moreover, the same article stresses on the importance of including demographic variables in the study of expenditure shares, they compare the fit of regression models showing considerable increases on the explanatory power of the model that includes demographics.

In Jääskelä and Windsor (2011) demographics serve mainly as control variables when the objective is to study the effect of income and prices; however, analyzing the relationship between demographics and expenditure patterns is also important for understanding household economies. In this respect Deaton and Paxson (1988) investigate the effect of larger households, they observe that bringing together previously separated adults with independent income increases the options available for spending due to a substitution effect toward the shared goods, which become cheaper for members of the larger household, following Deaton and Paxson (1988) hypothesis we expect that households with more sources of income will allocate a lower proportion of their expenses in shared categories (e.g. housing).

Based on the literature, the analyses in this work incorporate a set of demographic and economic variables through linear regression. The independent variable is the household share of expenses on a category - food, health, education, leisure, clothing, communications, transportation, and, housing - and the predictors are the demographic and economic variables. The inclusion of the predictors was further supported by the exploratory data analyses, for example, Figure 1. shows the mean share of expenditure in each category computed by income decile.

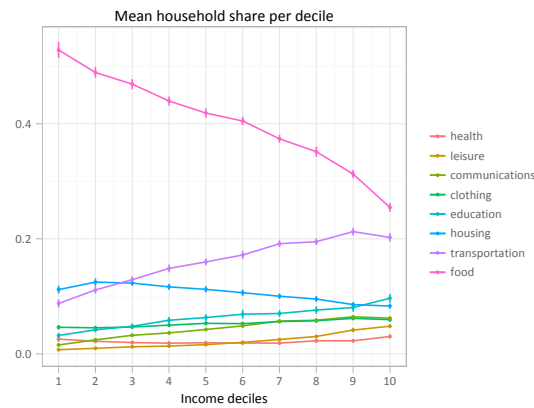


Figure 1. Mean household shares: The horizontal axis shows income decile categories and the vertical axis shows the mean share for each category with 95% Confidence Intervals (computed using TSL).

2. Methods

2.1 Data source and sample

ENIGH is a nationally representative survey of Mexican households, the survey, undertaken every two years, is designed to provide a comprehensive overview of Mexican households income and expenditures in terms of amount, origin, and distribution. The study uses a stratified clustered sample design, where the strata divide Mexican households according to characteristics of the locality to which the household belongs: 1) socioeconomic features of the inhabitants, 2) population size, and 3) Federal State where the locality is situated (including Mexico City). In addition, INEGI incorporates sampling weights that account for the probability of selection of each primary sampling unit (PSU), adjusts for non-response and post stratification -based on the 2010 Mexican Census.

The data collection period for ENIGH 2010 covered from August 21st, to November 18th, the sample consisted of 30,169 dwelling units with a non-response rate of 10%, composed by 2.8% non-response of the interviewed, 6.3% uninhabited units, and 0.9% dwellings out of the sample frame. ENIGH collects data using two methods: a *diary* and direct interviews. For a week, participants fill the *diary* with the household's daily expenses, every day the interviewer supervises the process. Interviews take place during the same period with the purpose of collecting information on items that are infrequently bought, non-regular sources of income, and demographics, for the interviewing facet every resident 12 years old or older is personally questioned.

2.2 Methods and variables

The statistical method we use is linear regression, for each item share we will produce a regression analysis; hence we classify our variables in dependent and covariates. The variables analyzed in this work were exempt of missing values; however, the linear regression was performed as an unconditional analysis on the domain of households with positive expenses, this adds to 27,614 interviewed households out of 27,655.

Dependent variables

We define the shares in each item as the total house expenditure in the field divided by the total expenses; all the variables involved are measured for a three-month period.

1. Food.

2. Housing.
3. Leisure.
4. Health.
5. Education.
6. Telecommunications.
7. Clothing.
8. Transportation.

Covariates

Initially the number of demographic variables considered included education of head of the household, rent paid for house (if applied), and other socioeconomic variables; however, the preliminary analyses showed strong correlation among the predictors, thus we chose to reduce the covariates to avoid multicollinearity. For each dependent variable we will study its relation with the following features:

1. Income decile: income decile of the household, computed from the quarter incomes per household collected in this same survey.
2. Marginalization index: measure of deficiencies in the locality, it is categorical variable with 5 levels that vary from very low to very high.
3. Size: population size in the locality, it is a categorical variable with levels 1 = 100,000 or more, 2 = 15,000 to 99,999, 3 = 2,500 to 14,999, 4 = less than 2,500.
4. Geographic area: code of the state to which the PSU belongs.
5. Age of household head: categorical variable with levels: 1 = 25 or less, 2 = 25 to 40, 3 = 41 to 55, 4 = 56 to 70, 5 = 71 to 85, 6 = 86 or more.
6. Underage: number of household members 11 years old or younger.
7. Adults: number of household members 12 years old or older.
8. Persons income: number of household members that perceive an income.
9. Type of home: categorical variable that describes the type of household, levels: 1 = single-personal, 2 = nuclear, 3 = extended, 4 = compounded, 5 = co-residence.

For the analysis we need to consider the complex sample design behind the data; the different probabilities of selection of individuals in the ENIGH data set, together with the strata and cluster features of the survey design impede us to consider the observations as independent and identically distributed draws from an infinite population. Therefore, standard linear regression analysis is not adequate; we need to account for the survey design in both the estimation of the regression parameters and in the computation of the standard errors. First, in order to compute unbiased estimates of the parameters we incorporate the sampling weights, this will account for unequal probabilities of selection and nonresponse, and to achieve this we use Weighted Least Squares estimation. Second, the homogeneity within clusters leads to correlation of the residuals, this violation to standard linear regression assumptions affects the estimation of the standard errors of the parameters, we account for this correlation by approximating the variances through Taylor series linearization (TSL).

The software used for the computations is R 3.0.1 with the package Survey, for further information of the package we refer the reader to Lumley (2010). The routines we used included:

svydesign: to define the strata, cluster and weight variables.

svyquantile: to compute income deciles, using Jackknife Repeated Replication.

svyby: to carry out exploratory data analyses, in particular, compute unconditional means of shares by categories of the explanatory covariates. This routine uses Taylor Series Linearization (TSL) for the computation of variances.

svyglm: for the linear regression models, uses TSL for the computation of coefficients' variances.

3. Results

All the regression models include the same predictors; however, it is worth noting that the explanatory power of the predictors varies between the goods/services categories, it is often the case that a significant predictor for one category share is not significant for the others. For this analysis we decided to keep non-significant covariates because our objective is, among others, to highlight this contrast on explanatory power of covariates.

For the analyses of categorical variables we present graphics, this is because we are comparing up to 30 levels of a categorical variable for 8 regression analysis, making -from our point of view- the graphic evaluation easier to understand. The interested reader can find Tables with the complete summary of the regression coefficients on the Appendix.

Our hypotheses are centered on the role of income, hence we begin by showing this coefficients, Figures 2 and 3 show the estimated coefficients for the income deciles together with 95% confidence intervals, both figures plot the same values, and we can distinguish if a variable is significantly different from the baseline category by evaluating if it overlaps with the horizontal line in zero. Figure 2, is meant to show that the magnitude of the effect of decile varies widely between categories, the strongest effect is for food, where an increase in income translates in lower expected share allocated to the item (keeping all other variables constant), similarly for housing. In contrast, Figure 3 shows that although the magnitudes are smaller for categories like communications, housing, and education, there is a clear effect of the income decile; the plots also show that the relationships are not always linear.

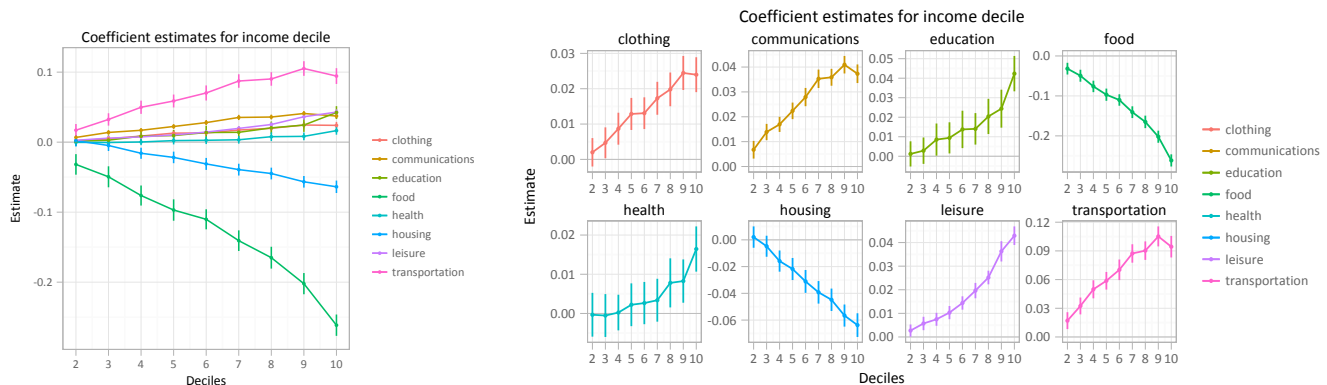


Figure 2, Figure 3. Coefficient estimates for income decile: the horizontal axis shows income deciles and the vertical axis plots the estimated coefficient with 95% confidence intervals.

Figure 4 and Figure 5 display the estimated coefficients and 95% confidence intervals for marginalization index and age category, we note that the magnitude of the effect for this variables is lower than for income decile, in addition there is more overlapping on the confidence intervals. Nevertheless, one can still see trends, in particular for age of the head of the household in transportation and food.

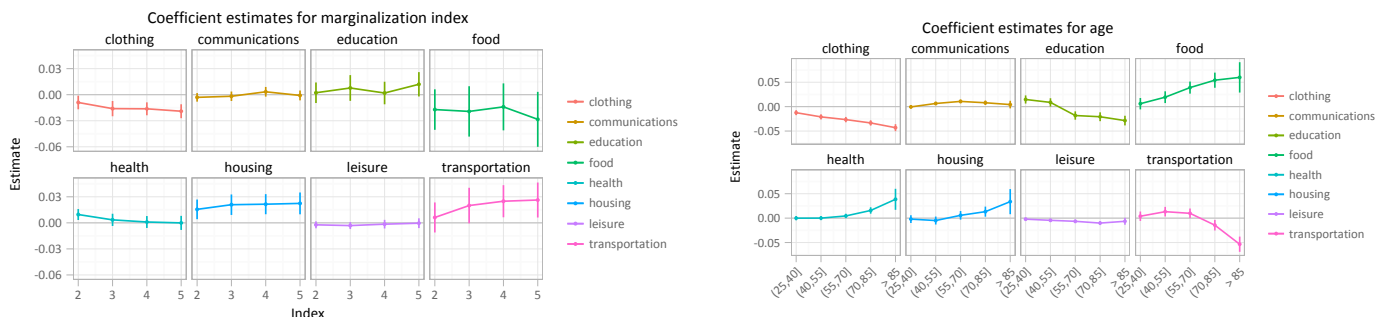


Figure 4, Figure 5. Coefficient estimates for marginalization index and age category: the horizontal axis shows income deciles and the vertical axis plots the estimated coefficient with 95% confidence intervals.

We now explore the effect of geographic region, this effect is introduced to the model through the State covariate. Figure 6 shows the estimated coefficients, the color is a function of whether the coefficient for a given state is significantly different from the reference category (State 01, Aguascalientes). We note that geographic region is not helpful for explaining the variability of the expenditure in leisure or clothing, on the other hand, we can identify groups of states with higher expected share of food -keeping all other variables constant- this might be a consequence of more expensive food prices on certain regions, or of different behavior patterns for eating outside or at home.

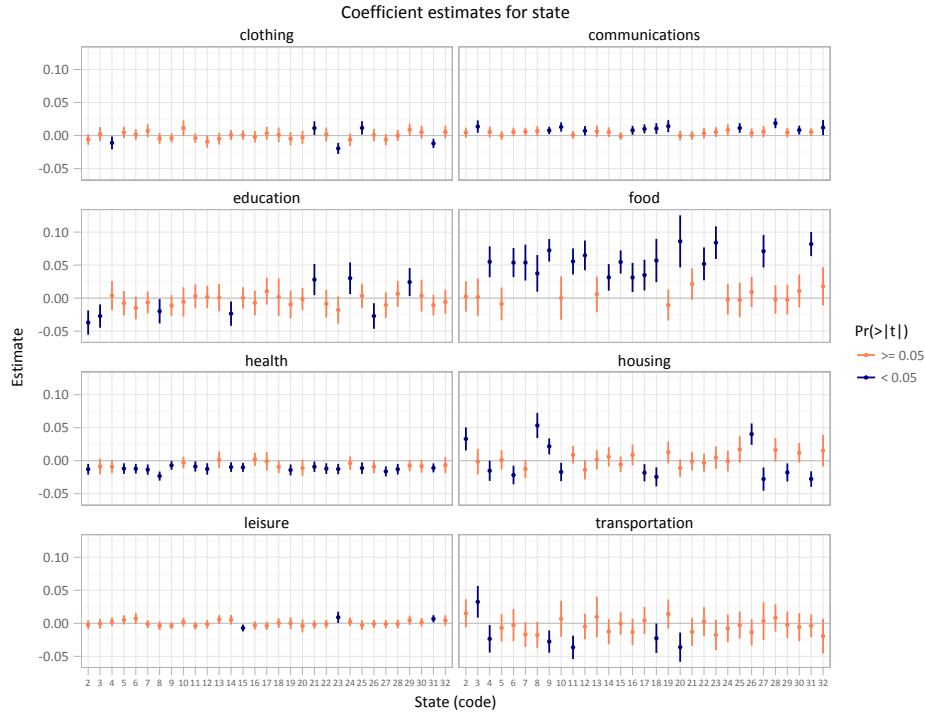


Figure 6. Coefficient estimates for state variable: the horizontal axis shows income deciles and the vertical axis plots the estimated coefficient with 95% confidence intervals.

Coefficient estimates for *type of home* and *size of the locality* can be found on the appendix, the effects of this variables are of low magnitude. *Type of home* is significant for the regression model corresponding to leisure being the expected expenditure share lower for *nuclear* and *extended* households, these consist on direct families on the first case, and direct families together with second-grade relatives in the latter. For *size of the locality*, the major relevance is on housing where, the expected share decreases in direct relationship with the size of the locality.

Table 1 shows the coefficient estimates for the continuous variables: number of members with income (# w/income), number of members *under 12* and members *12 and older*. We note that *under 12* is significant in all the models; for education an additional member under 12 (keeping the rest of the variables constant) translates to an increase on the expected share of 1.2%, while for transportation the effect is a decrease of 1.3%.

	# w/income		# under 12		# 12 and older	
	Est.	Pr(> t)	Est.	Pr(> t)	Est.	Pr(> t)
FOOD	0.001	0.290	0.007	0.000	0.002	0.109
CLOTHING	0.004	0.000	0.002	0.001	0.000	0.345
HOUSING	-0.002	0.013	-0.004	0.000	-0.004	0.000
HEALTH	-0.001	0.214	-0.001	0.024	-0.002	0.000
TRANSPORTATION	-0.003	0.012	-0.013	0.000	0.003	0.000
COMMUNICATIONS	-0.001	0.000	-0.005	0.000	0.000	0.202
EDUCATION	-0.002	0.084	0.012	0.000	0.013	0.000
LEISURE	0.000	0.304	-0.003	0.000	-0.002	0.000

Table 1. Estimates and p-values obtained from the regression models.

The model assumptions of homocedasticity and normal distribution of the residuals were tested using plots, the results from these diagnostics were satisfactory. The interested reader can contact the author to get the graphics.

4. Analysis Approach

As mentioned before, the analyses presented in this work incorporate the complex survey design effects, this is, we take into account that the households were sampled from clusters belonging to different strata, and that the probability of selecting a given household was not constant. In this section we exemplify some implications of undertaking a design based approach with ENIGH.

On a first stage of the study, we computed income deciles that served as predictors in the regression analysis. For this step, the consequence of assuming that the data was collected under Simple Random Sampling (SRS) is a considerable difference in the estimated deciles, the estimates when ignoring the structure of the data do not even fall in the confidence limits for the design based estimates,

decile	Estimate (complex)	Estimate (SRS)	(complex) 95% LB*	(complex) 95% UB*
min	0.000	0.000	0.000	0.000
1	8376.980	7708.806	8043.898	8676.814
2	12215.938	11369.706	11951.089	12602.501
3	15853.079	14813.036	15526.295	16229.276
4	19696.949	18529.152	19339.810	20224.961
5	24196.859	22862.010	23673.369	24717.100
6	29521.384	28135.284	28954.789	30076.444
7	37000.730	35236.694	36174.502	37807.533
8	48130.608	45726.084	47104.923	49315.398
9	69942.994	66759.346	67982.780	71749.587
max	1039580.060	1039580.060	1039580.060	1039580.060

Table 2. Estimates of percentiles for a design and a non-design based approach.

*The complex design variance estimates were computed using JRR.

For the regression models, the estimated coefficients under both approaches were similar -given that we use the correct definition for the deciles. The similarity in the regression coefficients of the designed based and the model based approach could discourage the selection of a design based approach in favor of a *simpler* approach that ignores the complex survey effects; however, it is not always the case

that we get similar results and we thus chose to take into account the mechanisms in the selection of the sample and thus assure unbiased estimates for the regression coefficients.

To exemplify the effect of the design in the variance estimation we present the design effects table associated to the estimation of the mean share of expenditure per decile, (the means and its confidence intervals are plotted in Figure 1). The design effects in Table 3 present variations from 1.180 to 4.398, i.e. the losses in precision due to the complex design of the sample are not constant, for differences within variable this is a consequence of the cluster design that has variations across regions with different income structure. The differences across variables but within decile are consequence of differences in the *rate of homogeneity* associated to each variable.

DEFF	FOOD	CLOTHING	HOUSING	HEALTH	TRANSPORT.	COMMUN.	EDUCATION	LEISURE
decile 1	4.398	2.440	2.504	3.659	3.083	2.319	2.799	4.109
decile 2	2.395	2.308	2.090	2.132	2.459	2.777	2.141	2.763
decile 3	2.218	2.170	1.694	2.093	2.065	2.052	2.196	2.639
decile 4	1.755	1.928	1.947	1.974	2.387	1.896	2.345	2.092
decile 5	2.159	2.119	2.346	1.668	1.891	1.999	2.290	1.757
decile 6	1.763	2.111	2.310	1.608	2.756	2.818	3.174	1.756
decile 7	1.704	2.115	2.013	1.180	1.852	1.850	1.917	2.156
decile 8	2.581	2.565	2.392	2.768	1.770	1.834	2.104	1.828
decile 9	1.969	2.090	1.815	1.500	2.212	1.957	2.310	3.481
decile 10	2.093	2.299	1.817	1.649	2.231	2.107	1.841	1.915
average	2.304	2.214	2.093	2.023	2.271	2.161	2.312	2.450

Table 3. Design effects corresponding to the estimated mean shares per deciles (unconditional analysis of deciles).

To sum up, the design is an important feature to consider on the ENIGH survey, ignoring the characteristics of the sample can lead to mistakes in the definition of income deciles and to underestimating the variance in the computation of summary statistics.

5. Conclusions

On this work we studied the expenditure patterns of Mexican households in the goods/services categories: food, clothing, education, housing, transportation, communications, leisure, and, health; we found that the set of variables that contributes to explain the variability in the patterns varies for every category and also the magnitude of the explanatory power. Nevertheless, income class is a significant predictor across categories, we encountered that the category with differences of higher magnitude as a function of income is *food*, the pattern found for food coincides with the literature, Deaton and Paxson (1988) note that in several countries the income elasticity of food is negative, this is an important for Mexico where malnutrition is widespread because as income increases instead of increasing the quality of the food households tend to allocate the money in other categories. Moreover as income increases the shares in food and housing decrease overcoming increases in all the other categories.

The model also accounts for the effect of demographics, results show that age of the household head is significant predictor for clothing, education, food, health, and transportation. In addition, we observe geographic trends for the expenditure in food; some states have higher expected share in food than others.

The present work has limitations, for example, to further study the trend in food consumption as income increases one could analyze the variations of the shares in subcategories like meat, fish, and vegetables. This information is included in ENIGH, and one can even complement with information of how many meals/ how much money is spent in eating outside of the house. More in depth information is also available for the other categories, hence this work can serve as an introduction to the study of expenditure patterns in Mexican households.

References

Steven G. Heeringa, Brady T. West, Kiyoshi Taniguchi, Patricia A. Berglund. ***Applied Survey Data Analysis***, Chapman & Hall/CRC, 2010.

Thomas Lumley. ***Complex Surveys: a guide to analysis using R***, Wiley, 2010.

Wen S. Chern, Kimiko Ishibashi, Kiyoshi Taniguchi, Yuki Tokoyama, ***Analysis of the food consumption of Japanese households***, FAO Economic and Social Development, 2003.

Jarkko Jääskelä, Callan Windsor. ***Insights from the Household Expenditure Survey***, Reserve Bank of Australia, 2011.

John Gibson, Kathleen Beegle, Joachim De Weerd, Jed Friedman. ***What Does Variation in Survey Design Reveal about the Nature of Measurement Errors in Household Consumption?*** The World Bank Development Research Group Poverty and Inequality Team, 2013.

Angus Deaton, Christina Paxson. ***Economies of Scale, Household Size, and the Demand for Food***, Journal of Political Economy, 1998, vol. 106, no. 5.

FOOD

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	0.453	0.021	21.945	0.000
Size of locality (reference 100,000 and more)				
15,000 to 99,999	0.004	0.005	0.784	0.433
2,500 to 14,999	0.014	0.009	1.588	0.112
less than 2,500	0.005	0.007	0.801	0.423
State (reference state01)				
state02	0.000	0.012	0.017	0.986
state03	-0.003	0.015	-0.202	0.840
state04	0.054	0.012	4.362	0.000
state05	-0.010	0.013	-0.780	0.435
state06	0.052	0.011	4.661	0.000
state07	0.056	0.014	3.941	0.000
state08	0.037	0.014	2.597	0.009
state09	0.071	0.009	7.949	0.000
state10	-0.001	0.017	-0.083	0.934
state11	0.055	0.010	5.375	0.000
state12	0.066	0.012	5.522	0.000
state13	0.004	0.014	0.326	0.745
state14	0.029	0.011	2.736	0.006
state15	0.053	0.009	5.816	0.000
state16	0.032	0.011	2.850	0.004
state17	0.031	0.012	2.620	0.009
state18	0.056	0.017	3.367	0.001
state19	-0.012	0.012	-0.971	0.332
state20	0.086	0.021	4.089	0.000
state21	0.021	0.012	1.660	0.097
state22	0.048	0.013	3.822	0.000
state23	0.084	0.013	6.531	0.000
state24	-0.001	0.012	-0.042	0.966
state25	-0.004	0.014	-0.313	0.754
state26	0.007	0.012	0.577	0.564
state27	0.069	0.013	5.517	0.000
state28	-0.003	0.011	-0.230	0.818
state29	-0.008	0.012	-0.675	0.500
state30	0.010	0.013	0.794	0.427
state31	0.080	0.009	8.458	0.000
state32	0.017	0.015	1.118	0.264
Marginalization (reference very high)				
High	-0.017	0.012	-1.440	0.150
Middle	-0.019	0.015	-1.301	0.193
Low	-0.014	0.014	-1.017	0.309
Very low	-0.028	0.016	-1.758	0.079
# underage	0.007	0.001	5.551	0.000
# adults	0.002	0.001	1.603	0.109
Age of household head (reference 25 or less)				
26 to 40	0.006	0.006	1.013	0.311
41 to 55	0.019	0.006	3.156	0.002
56 to 70	0.039	0.006	6.186	0.000
71 to 85	0.054	0.008	6.857	0.000
86 or more	0.060	0.016	3.782	0.000
Income decile (reference 1st decile)				
decile 2	-0.032	0.007	-4.251	0.000
decile 3	-0.049	0.008	-6.475	0.000
decile 4	-0.076	0.007	-10.444	0.000
decile 5	-0.097	0.008	-12.453	0.000
decile 6	-0.110	0.007	-15.081	0.000
decile 7	-0.141	0.007	-18.764	0.000
decile 8	-0.165	0.008	-20.739	0.000
decile 9	-0.202	0.008	-26.167	0.000
decile 10	-0.261	0.008	-33.651	0.000
Type of home (reference single-personal)				
nuclear	0.013	0.007	1.963	0.050
extended	0.016	0.008	2.163	0.031
compound	-0.013	0.016	-0.824	0.410
co-residen	-0.023	0.017	-1.327	0.185
# p. income	0.001	0.001	1.059	0.290

CLOTHING

	Estimate	Std. Error	t val.	Pr(> t)
(Intercept)	0.060	0.006	9.859	0.000
Size of locality (reference 100,000 and more)				
15,000 to 99,999	0.002	0.002	1.493	0.136
2,500 to 14,999	0.006	0.002	2.399	0.017
less than 2,500	0.011	0.002	4.794	0.000
State (reference state01)				
state02	-0.006	0.004	-1.609	0.108
state03	0.001	0.005	0.109	0.913
state04	-0.009	0.005	-1.957	0.050
state05	0.005	0.004	1.213	0.225
state06	0.002	0.004	0.477	0.633
state07	0.010	0.005	2.036	0.042
state08	-0.004	0.004	-0.982	0.326
state09	-0.002	0.003	-0.652	0.514
state10	0.010	0.006	1.743	0.081
state11	-0.004	0.003	-1.107	0.268
state12	-0.006	0.005	-1.369	0.171
state13	-0.004	0.004	-0.915	0.360
state14	0.001	0.004	0.277	0.782
state15	0.001	0.003	0.340	0.734
state16	-0.001	0.004	-0.152	0.880
state17	0.004	0.004	0.887	0.375
state18	0.002	0.005	0.363	0.717
state19	-0.004	0.005	-0.821	0.412
state20	-0.002	0.005	-0.490	0.624
state21	0.013	0.005	2.623	0.009
state22	0.001	0.005	0.142	0.887
state23	-0.018	0.004	-4.644	0.000
state24	-0.004	0.005	-0.946	0.344
state25	0.012	0.005	2.424	0.015
state26	0.000	0.005	0.065	0.948
state27	-0.006	0.004	-1.396	0.163
state28	0.001	0.004	0.210	0.834
state29	0.008	0.004	1.710	0.087
state30	0.007	0.005	1.396	0.163
state31	-0.010	0.003	-3.166	0.002
state32	0.005	0.005	1.184	0.236
Marginalization (reference very high)				
High	-0.009	0.004	-2.244	0.025
Middle	-0.016	0.004	-3.583	0.000
Low	-0.016	0.004	-4.282	0.000
Very low	-0.019	0.004	-4.662	0.000
# underage	0.002	0.000	3.304	0.001
# adults	0.000	0.001	0.945	0.345
Age of household head (reference 25 or less)				
26 to 40	-0.012	0.003	-4.805	0.000
41 to 55	-0.021	0.003	-7.790	0.000
56 to 70	-0.027	0.003	-9.544	0.000
71 to 85	-0.033	0.003	-12.043	0.000
86 or more	-0.043	0.004	-11.717	0.000
Income decile (reference 1st decile)				
decile 2	0.002	0.002	0.979	0.328
decile 3	0.005	0.002	2.103	0.036
decile 4	0.009	0.002	3.767	0.000
decile 5	0.013	0.002	5.561	0.000
decile 6	0.013	0.002	5.714	0.000
decile 7	0.017	0.002	7.275	0.000
decile 8	0.020	0.002	8.142	0.000
decile 9	0.024	0.002	9.962	0.000
decile 10	0.024	0.003	9.517	0.000
Type of home (reference single-personal)				
nuclear	0.001	0.002	0.325	0.745
extended	-0.001	0.002	-0.554	0.579
compound	-0.002	0.006	-0.267	0.789
co-residen	0.003	0.009	0.287	0.774
# p. income	0.004	0.001	7.909	0.000

HOUSING

	Estimate	St. Error	t value	Pr(> t)
(Intercept)	0.153	0.010	15.202	0.000
Size of locality (reference 100,000 and more)				
15,000 to 99,999	-0.013	0.003	-4.647	0.000
2,500 to 14,999	-0.031	0.004	-8.111	0.000
less than 2,500	-0.049	0.004	-13.463	0.000
State (reference state01)				
state02	0.034	0.009	4.004	0.000
state03	0.007	0.010	0.699	0.485
state04	-0.025	0.007	-3.471	0.001
state05	0.000	0.007	-0.006	0.995
state06	-0.023	0.007	-3.498	0.000
state07	-0.025	0.007	-3.711	0.000
state08	0.050	0.009	5.572	0.000
state09	0.015	0.006	2.509	0.012
state10	-0.010	0.007	-1.561	0.119
state11	0.009	0.006	1.431	0.152
state12	-0.027	0.007	-4.002	0.000
state13	-0.003	0.007	-0.390	0.696
state14	0.006	0.007	0.841	0.400
state15	-0.007	0.006	-1.212	0.226
state16	0.003	0.007	0.412	0.680
state17	-0.020	0.006	-3.078	0.002
state18	-0.027	0.007	-3.865	0.000
state19	0.009	0.008	1.156	0.248
state20	-0.013	0.007	-1.883	0.060
state21	-0.008	0.006	-1.231	0.218
state22	0.002	0.007	0.292	0.770
state23	-0.002	0.008	-0.295	0.768
state24	-0.009	0.008	-1.202	0.230
state25	0.017	0.008	1.985	0.047
state26	0.043	0.009	5.042	0.000
state27	-0.030	0.008	-3.847	0.000
state28	0.013	0.008	1.677	0.094
state29	-0.011	0.007	-1.673	0.094
state30	0.005	0.007	0.733	0.464
state31	-0.035	0.005	-6.409	0.000
state32	0.015	0.011	1.330	0.184
Marginalization index (reference very high)				
High	0.016	0.006	2.693	0.007
Middle	0.021	0.006	3.475	0.001
Low	0.021	0.006	3.643	0.000
Very low	0.022	0.006	3.497	0.000
# underage	-0.004	0.001	-5.277	0.000
# adults	-0.004	0.001	-5.704	0.000
Age of household head (reference 25 or less)				
26 to 40	-0.002	0.004	-0.504	0.614
41 to 55	-0.005	0.004	-1.192	0.233
56 to 70	0.006	0.004	1.271	0.204
71 to 85	0.013	0.005	2.526	0.012
86 or more	0.034	0.013	2.575	0.010
Income decile (reference 1st decile)				
decile 2	0.002	0.004	0.508	0.611
decile 3	-0.005	0.004	-1.194	0.233
decile 4	-0.016	0.004	-3.931	0.000
decile 5	-0.022	0.004	-5.183	0.000
decile 6	-0.031	0.004	-7.135	0.000
decile 7	-0.039	0.004	-9.133	0.000
decile 8	-0.045	0.004	-10.493	0.000
decile 9	-0.057	0.004	-13.433	0.000
decile 10	-0.064	0.005	-14.107	0.000
Type of home (reference single-personal)				
nuclear	-0.009	0.004	-2.266	0.024
extended	-0.001	0.005	-0.239	0.811
compound	0.035	0.019	1.861	0.063
co-residen	0.028	0.014	1.944	0.052
# persons				
income	-0.002	0.001	-2.488	0.013

HEALTH

	Estimate	St. Error	t value	Pr(> t)
(Intercept)	0.026	0.006	4.382	0.000
Size of locality (reference 100,000 and more)				
15,000 to 99,999	0.001	0.001	0.716	0.474
2,500 to 14,999	0.004	0.003	1.468	0.142
less than 2,500	0.007	0.002	3.105	0.002
State (reference state01)				
state02	-0.013	0.004	-3.014	0.003
state03	-0.009	0.006	-1.459	0.145
state04	-0.007	0.005	-1.422	0.155
state05	-0.012	0.004	-2.765	0.006
state06	-0.012	0.004	-3.037	0.002
state07	-0.012	0.004	-2.789	0.005
state08	-0.023	0.004	-6.142	0.000
state09	-0.006	0.004	-1.588	0.112
state10	-0.004	0.005	-0.777	0.437
state11	-0.008	0.004	-2.056	0.040
state12	-0.010	0.005	-2.260	0.024
state13	0.002	0.006	0.350	0.727
state14	-0.009	0.004	-2.418	0.016
state15	-0.010	0.004	-2.709	0.007
state16	0.003	0.005	0.563	0.574
state17	0.000	0.007	-0.052	0.959
state18	-0.009	0.005	-1.796	0.073
state19	-0.013	0.004	-3.047	0.002
state20	-0.011	0.006	-1.737	0.083
state21	-0.008	0.004	-1.907	0.057
state22	-0.012	0.004	-2.990	0.003
state23	-0.011	0.004	-2.779	0.005
state24	-0.003	0.005	-0.479	0.632
state25	-0.011	0.005	-2.397	0.017
state26	-0.009	0.005	-1.919	0.055
state27	-0.016	0.004	-3.925	0.000
state28	-0.012	0.004	-2.856	0.004
state29	-0.008	0.005	-1.791	0.073
state30	-0.007	0.005	-1.356	0.175
state31	-0.010	0.004	-2.647	0.008
state32	-0.007	0.006	-1.017	0.309
Marginalization index (reference very high)				
High	0.010	0.003	2.982	0.003
Middle	0.003	0.004	0.957	0.338
Low	0.001	0.003	0.278	0.781
Very low	0.000	0.004	-0.012	0.990
# underage	-0.001	0.000	-2.258	0.024
# adults	-0.002	0.000	-5.503	0.000
Age of household head (reference 25 or less)				
26 to 40	0.000	0.002	-0.051	0.959
41 to 55	0.000	0.002	0.007	0.995
56 to 70	0.004	0.002	1.948	0.051
71 to 85	0.016	0.003	4.669	0.000
86 or more	0.039	0.011	3.515	0.000
Income decile (reference 1st decile)				
decile 2	0.000	0.003	-0.115	0.908
decile 3	-0.001	0.003	-0.190	0.849
decile 4	0.000	0.002	0.101	0.920
decile 5	0.002	0.003	0.797	0.425
decile 6	0.003	0.003	0.965	0.335
decile 7	0.003	0.003	1.212	0.226
decile 8	0.008	0.003	2.445	0.015
decile 9	0.008	0.003	2.935	0.003
decile 10	0.016	0.003	5.589	0.000
Type of home (reference single-personal)				
nuclear	0.003	0.002	1.345	0.179
extended	0.007	0.003	2.821	0.005
compound	0.013	0.008	1.570	0.117
co-residen	-0.010	0.003	-2.895	0.004
# persons				
income	-0.001	0.000	-1.242	0.214

TRANSPORTATION

	Estimate	St. Error	t value	Pr(> t)
(Intercept)	0.075	0.015	5.081	0.000
Size of locality (reference 100,000 and more)				
15,000 to 99,999	-0.001	0.004	-0.354	0.723
2,500 to 14,999	-0.004	0.005	-0.840	0.401
less than 2,500	0.009	0.004	2.034	0.042
State (reference state01)				
state02	0.016	0.011	1.446	0.148
state03	0.033	0.012	2.689	0.007
state04	-0.022	0.011	-2.086	0.037
state05	-0.006	0.010	-0.610	0.542
state06	-0.002	0.012	-0.173	0.862
state07	-0.015	0.010	-1.542	0.123
state08	-0.017	0.010	-1.723	0.085
state09	-0.027	0.009	-3.155	0.002
state10	0.006	0.014	0.405	0.686
state11	-0.037	0.009	-4.055	0.000
state12	-0.003	0.010	-0.311	0.756
state13	0.011	0.016	0.681	0.496
state14	-0.012	0.010	-1.216	0.224
state15	0.001	0.009	0.079	0.937
state16	-0.012	0.010	-1.133	0.257
state17	0.006	0.010	0.568	0.570
state18	-0.021	0.012	-1.841	0.066
state19	0.015	0.011	1.336	0.182
state20	-0.035	0.011	-3.123	0.002
state21	-0.011	0.011	-0.997	0.319
state22	0.003	0.011	0.237	0.812
state23	-0.017	0.012	-1.416	0.157
state24	-0.007	0.011	-0.641	0.522
state25	-0.003	0.011	-0.282	0.778
state26	-0.013	0.010	-1.285	0.199
state27	0.004	0.014	0.258	0.797
state28	0.009	0.011	0.813	0.417
state29	0.000	0.010	0.046	0.963
state30	-0.004	0.011	-0.401	0.689
state31	-0.001	0.009	-0.163	0.871
state32	-0.019	0.013	-1.486	0.137
Marginalization index (reference very high)				
High	0.006	0.009	0.704	0.482
Middle	0.020	0.010	1.911	0.056
Low	0.025	0.009	2.642	0.008
Very low	0.026	0.010	2.558	0.011
# underage	-0.013	0.001	-12.025	0.000
# adults	0.003	0.001	3.522	0.000
Age of household head (reference 25 or less)				
26 to 40	0.004	0.005	0.792	0.428
41 to 55	0.013	0.005	2.646	0.008
56 to 70	0.010	0.005	1.962	0.050
71 to 85	-0.014	0.006	-2.609	0.009
86 or more	-0.053	0.008	-6.727	0.000
Income decile (reference 1st decile)				
decile 2	0.017	0.005	3.790	0.000
decile 3	0.032	0.004	7.219	0.000
decile 4	0.050	0.005	10.361	0.000
decile 5	0.059	0.005	12.523	0.000
decile 6	0.070	0.005	12.791	0.000
decile 7	0.087	0.005	17.780	0.000
decile 8	0.090	0.005	18.320	0.000
decile 9	0.105	0.005	19.740	0.000
decile 10	0.094	0.006	16.445	0.000
Type of home (reference single-personal)				
nuclear	0.013	0.004	3.085	0.002
extended	0.013	0.005	2.625	0.009
compound	0.000	0.013	0.011	0.991
co-residen	-0.002	0.018	-0.094	0.925
# p. income	-0.003	0.001	-2.501	0.012

COMMUNICATIONS

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	0.022	0.005	4.757	0.000
Size of locality (reference 100,000 and more)				
15,000 to 99,999	-0.003	0.001	-2.529	0.011
2,500 to 14,999	-0.006	0.002	-3.083	0.002
less than 2,500	-0.014	0.002	-8.845	0.000
State (reference state01)				
state02	0.005	0.004	1.065	0.287
state03	0.016	0.005	2.955	0.003
state04	0.002	0.005	0.545	0.586
state05	0.000	0.004	-0.104	0.917
state06	0.005	0.004	1.322	0.186
state07	0.003	0.004	0.757	0.449
state08	0.006	0.004	1.388	0.165
state09	0.006	0.003	1.704	0.089
state10	0.015	0.004	3.680	0.000
state11	0.001	0.003	0.262	0.794
state12	0.004	0.004	0.908	0.364
state13	0.005	0.005	1.125	0.261
state14	0.005	0.004	1.184	0.237
state15	-0.001	0.003	-0.379	0.704
state16	0.006	0.004	1.588	0.112
state17	0.009	0.004	2.297	0.022
state18	0.010	0.005	2.055	0.040
state19	0.013	0.005	2.636	0.008
state20	-0.001	0.004	-0.140	0.889
state21	-0.002	0.004	-0.539	0.590
state22	0.005	0.005	1.061	0.289
state23	0.003	0.004	0.831	0.406
state24	0.006	0.005	1.266	0.205
state25	0.011	0.004	2.986	0.003
state26	0.004	0.004	1.073	0.283
state27	0.005	0.005	1.172	0.241
state28	0.018	0.004	4.241	0.000
state29	0.005	0.004	1.296	0.195
state30	0.006	0.004	1.663	0.096
state31	0.003	0.003	0.900	0.368
state32	0.012	0.006	1.822	0.069
Marginalization index (reference very high)				
High	-0.003	0.003	-1.215	0.224
Middle	-0.002	0.003	-0.646	0.518
Low	0.003	0.003	1.175	0.240
Very low	-0.001	0.003	-0.292	0.770
# underage	-0.005	0.000	-13.860	0.000
# adults	0.000	0.000	-1.275	0.202
Age of household head (reference 25 or less)				
26 to 40	-0.001	0.002	-0.322	0.748
41 to 55	0.006	0.002	3.772	0.000
56 to 70	0.011	0.002	5.690	0.000
71 to 85	0.008	0.002	3.466	0.001
86 or more	0.004	0.004	1.067	0.286
Income decile (reference 1st decile)				
decile 2	0.007	0.002	3.721	0.000
decile 3	0.014	0.002	8.313	0.000
decile 4	0.017	0.002	10.942	0.000
decile 5	0.022	0.002	13.164	0.000
decile 6	0.028	0.002	14.929	0.000
decile 7	0.035	0.002	18.684	0.000
decile 8	0.036	0.002	20.740	0.000
decile 9	0.041	0.002	22.787	0.000
decile 10	0.037	0.002	19.573	0.000
Type of home (reference single-personal)				
nuclear	0.002	0.002	0.838	0.402
extended	0.003	0.002	1.359	0.174
compound	0.001	0.005	0.172	0.863
co-residen	0.003	0.011	0.241	0.810
# p. income	-0.001	0.000	-3.547	0.000

EDUCATION

	Estimate	St. Error	t value	Pr(> t)
(Intercept)	-0.006	0.012	-0.486	0.627
Size of locality (reference 100,000 and more)				
15,000 to 99,999	-0.004	0.004	-1.006	0.314
2,500 to 14,999	-0.008	0.006	-1.413	0.158
less than 2,500	-0.013	0.004	-3.018	0.003
State (reference state01)				
state02	-0.036	0.009	-3.970	0.000
state03	-0.024	0.009	-2.728	0.006
state04	0.002	0.011	0.200	0.841
state05	-0.008	0.009	-0.822	0.411
state06	-0.015	0.008	-1.741	0.082
state07	-0.010	0.008	-1.169	0.243
state08	-0.020	0.009	-2.177	0.030
state09	-0.012	0.008	-1.543	0.123
state10	-0.003	0.011	-0.315	0.753
state11	0.003	0.009	0.368	0.713
state12	-0.002	0.009	-0.191	0.848
state13	0.000	0.010	0.018	0.986
state14	-0.023	0.009	-2.492	0.013
state15	0.001	0.008	0.068	0.946
state16	-0.009	0.009	-0.967	0.334
state17	0.011	0.010	1.085	0.278
state18	0.001	0.014	0.074	0.941
state19	-0.010	0.010	-0.942	0.346
state20	-0.002	0.008	-0.202	0.840
state21	0.027	0.012	2.261	0.024
state22	-0.006	0.011	-0.604	0.546
state23	-0.019	0.010	-1.852	0.064
state24	0.028	0.012	2.345	0.019
state25	0.004	0.009	0.449	0.654
state26	-0.026	0.009	-2.733	0.006
state27	-0.010	0.010	-1.075	0.283
state28	0.006	0.010	0.613	0.540
state29	0.026	0.011	2.420	0.016
state30	0.002	0.012	0.203	0.839
state31	-0.012	0.008	-1.516	0.130
state32	-0.005	0.009	-0.607	0.544
Marginalization (reference very high)				
High	0.002	0.006	0.372	0.710
Middle	0.008	0.008	1.023	0.306
Low	0.002	0.007	0.293	0.769
Very low	0.012	0.007	1.677	0.094
# underage	0.012	0.001	11.206	0.000
# adults	0.013	0.001	12.236	0.000
Age of household head (reference 25 or less)				
26 to 40	0.015	0.004	3.450	0.001
41 to 55	0.009	0.004	2.007	0.045
56 to 70	-0.018	0.004	-4.189	0.000
71 to 85	-0.021	0.005	-4.482	0.000
86 or more	-0.029	0.005	-5.665	0.000
Income decile (reference 1st decile)				
decile 2	0.001	0.003	0.363	0.716
decile 3	0.003	0.003	0.828	0.408
decile 4	0.009	0.004	2.035	0.042
decile 5	0.009	0.004	2.315	0.021
decile 6	0.014	0.005	2.814	0.005
decile 7	0.014	0.004	3.414	0.001
decile 8	0.020	0.005	4.433	0.000
decile 9	0.024	0.005	4.911	0.000
decile 10	0.042	0.005	9.161	0.000
Type of home (reference single-personal)				
nuclear	0.015	0.002	6.223	0.000
extended	-0.005	0.004	-1.367	0.172
compound	-0.002	0.012	-0.182	0.856
co-residen	-0.018	0.009	-1.989	0.047
# p. income	-0.002	0.001	-1.727	0.084

LEISURE

	Estimate	St. Error	t value	Pr(> t)
(Intercept)	0.025	0.005	5.077	0.000
Size of locality (reference 100,000 and more)				
15,000 to 99,999	0.001	0.001	1.043	0.297
2,500 to 14,999	0.001	0.002	0.363	0.716
less than 2,500	0.000	0.002	-0.144	0.886
State (reference state01)				
state02	-0.002	0.003	-0.592	0.554
state03	-0.001	0.004	-0.226	0.821
state04	0.002	0.003	0.748	0.455
state05	0.005	0.003	1.471	0.141
state06	0.007	0.004	1.684	0.092
state07	-0.001	0.003	-0.500	0.617
state08	-0.004	0.003	-1.042	0.298
state09	-0.003	0.003	-1.186	0.236
state10	0.002	0.003	0.561	0.575
state11	-0.004	0.003	-1.406	0.160
state12	-0.002	0.003	-0.484	0.629
state13	0.006	0.003	1.681	0.093
state14	0.005	0.004	1.429	0.153
state15	-0.007	0.003	-2.707	0.007
state16	-0.003	0.003	-1.100	0.271
state17	-0.004	0.003	-1.236	0.217
state18	0.000	0.004	0.066	0.948
state19	0.000	0.005	0.033	0.974
state20	-0.004	0.005	-0.845	0.398
state21	-0.002	0.003	-0.651	0.515
state22	-0.001	0.003	-0.362	0.718
state23	0.009	0.004	2.104	0.035
state24	0.002	0.003	0.684	0.494
state25	-0.002	0.004	-0.667	0.505
state26	-0.001	0.003	-0.216	0.829
state27	-0.001	0.003	-0.338	0.735
state28	-0.001	0.003	-0.266	0.790
state29	0.004	0.004	1.174	0.241
state30	0.001	0.003	0.438	0.661
state31	0.007	0.003	2.386	0.017
state32	0.004	0.004	1.085	0.278
Marginalization (reference very high)				
High	-0.002	0.002	-1.121	0.262
Middle	-0.003	0.002	-1.537	0.125
Low	-0.002	0.003	-0.598	0.550
Very low	0.000	0.003	-0.139	0.890
# underage	-0.003	0.000	-9.622	0.000
# adults	-0.002	0.000	-6.016	0.000
Age of household head (reference 25 or less)				
26 to 40	-0.002	0.002	-1.404	0.160
41 to 55	-0.004	0.002	-2.626	0.009
56 to 70	-0.007	0.002	-3.614	0.000
71 to 85	-0.010	0.002	-4.934	0.000
86 or more	-0.007	0.004	-1.803	0.071
Income decile (reference 1st decile)				
decile 2	0.003	0.001	2.053	0.040
decile 3	0.006	0.001	3.946	0.000
decile 4	0.007	0.001	5.356	0.000
decile 5	0.010	0.001	7.246	0.000
decile 6	0.014	0.001	9.976	0.000
decile 7	0.020	0.002	11.848	0.000
decile 8	0.025	0.001	17.094	0.000
decile 9	0.036	0.002	16.559	0.000
decile 10	0.043	0.002	21.408	0.000
Type of home (reference single-personal)				
nuclear	-0.005	0.002	-2.761	0.006
extended	-0.005	0.002	-2.556	0.011
compound	0.005	0.008	0.643	0.520
co-residen	-0.010	0.006	-1.821	0.069
# p. income	0.000	0.000	1.027	0.304