# Shelter from the Storm:

# Upgrading Housing Infrastructure in Latin America's Slums


Ryan Cooper
J-PAL

Sebastian Galiani*
Washington University in St Louis

Paul Gertler
UC Berkeley

Sebastian Martinez
World Bank

Adam Ross
World Bank

Raimundo Undurraga
J-PAL


October 2011 - Work in progress - Please do not circulate and do not cite


**Abstract**

This paper provides rigorous empirical evidence as to the causal effects of upgrading slum dwellings on the living conditions of the extreme poor. In particular, we study the impact of providing better houses in situ to slum dwellers in El Salvador and Uruguay. We experimentally evaluate the impact of *Un Techo Para Mi País*, a youth-led program which provides basic prefabricated houses to extreme poor populations in Latin America, on several outcomes of interest. The main objective of the program is to improve household well-being. Our findings show that better houses have a positive effect on housing conditions, general well being, and dwellers' perception of security. However, there are no significant effects at all on the possession of assets, labor outcomes and health. Overall, our results suggest that this limited house improvement, though increase the welfare of the poor, is not a sufficient condition for the wide improvement of living conditions in slums.



*We are grateful to Andres Drenik, Fernando Callorda and Ivan Torre for skillful research assistance. We acknowledge financial support from ESRC and The World Bank. Sebastian Galiani also acknowledges financial support from the Weidenbaum Center.

# 1 Introduction

The 1948 UN Universal Declaration of Human Rights identified adequate housing along with food and clothing as the basic requirements for achieving a minimum standard of living.[1] Despite this, almost one billion people primarily in the developing world, live in urban slums without proper housing.[2] This in part because migration has shifted the locus of global poverty to the cities, a process now recognized as the urbanization of poverty' (United Nations, 2003).

Rural to urban migration is not necessarily bad because the poor come to large cities to take advantage of opportunities not available in their previous areas of residence. For instance, as Glaeser (2011) points notes, "Rio de Janero's slums are densely packed because life in a favela beats stultifying rural poverty. Rio has long offered more economic opportunity, public services, and amenities than the desolate areas of Brazil's hinterland." Nonetheless, the urban poor in developing countries face enormous challenges in their daily lives. Many live in crowded and unhealthy slums or in more remote peri-urban areas with limited access to jobs and social services (UN-Habitat, 2003).

One major concern is the poor quality of housing these urban slums. Large numbers of Slum dwellers live in houses with dirt floors and have poor quality roofs and walls (typically constructed out of waste materials such as cardboard, tin and plastic) that provide inadequate protection against inclement weather. And large numbers of slum dwellers have inadequate access to public service such as water, sanitation and electricity (UN-Habitat, 2003).

Adequate housing may provide a number of benefits to slum dwellers. First, it protects them from the ravages of the environment. Roofs and walls shelter household members from rain and cold. Water, sanitation and non-dirt floors protect against parasitic infestations and infections. In addition, housing provides security and a defense against crime, a major problem in slums (United Nations, 2003). This might allow the household to accumulate assets, as well as free

[1] United Nations, Universal Declaration of Human Rights, Article 25 (1948).

[2] Following previous work, we define a slum as an overcrowded settlement, which has poor houses, inadequate access to safe water and sanitation, and insecurity of tenure (UN-Habitat, 2003).

time from protecting assets in order to engage in more productive activities (Field, 2007). Moreover, a proper house can induce a sense of dignity and pride that compliments other benefits, improving life satisfaction.

This paper provides some of the first rigorous empirical evidence as to the causal effects of upgrading slum dwellings on the living conditions of the extreme poor. We examine the impact of extremely cheap but sturdy houses constructed by *Un Techo Para Mi País* (UTPMP), a youth-led NGO that provides basic pre-fabricated houses to extremely poor populations in Latin America. The main objective of the program is to improve household well-being. UTPMP targets the poorest informal settlements and the households within these settlements that live in sub-standard housing. The UTPMP budget and personnel constraints limit the number of housing units that can be upgraded at any one time. Under these constraints, and also aiming to be able to evaluate rigorously the impact of the program, UTPMP opted to select beneficiaries through a lottery system in El Salvador and Uruguay, giving all eligible households in a pre-determined geographical neighborhood an equal opportunity to receive the housing upgrade in a given year. In this paper we exploit this experimental variability to assess the effects of upgrading slums through improving the houses of the poor on their living conditions. The UTPMP houses are made of wood (Uruguay) or aluminum (El Salvador). A typical house is $18m^2$ (6*3) in size and is built by teams of youth volunteers along with the household recipient. The UTPMP dwelling offers significant improvements in shelter in terms of flooring, roof, and walls than existing houses. Its sturdy nature means that it can be locked and thereby provides a more location. Though these houses constitute a substantial improvement in the houses of the targeted poor population, it should be borne in mind that their facilities do not have water and sanitation nor bathroom or kitchen or amenities such as plumbing, drinking water, or gas. Our findings show that better houses have a positive effect on housing conditions, general well being in terms of satisfaction with quality of life, and the dwellers' sense of security. However, there are no significant effects at all on the possession of assets, labor outcomes or on health. Overall, our results suggest that this limited house improvement, though increase the welfare of the poor, is not a sufficient condition for the wide improvement of living conditions in slums.

Our findings contribute to a small literature on the causal effects of housing. To the best of our knowledge, this study constitutes the first randomized experiment to assess the impact of up-

grading housing infrastructure in slums in the developing world.[3] Katz et al. (2001) randomly offered vouchers to poor dwellers in the US to reallocate to lower-poverty areas. Those offered vouchers experienced improvements in multiple measures of well-being relative to a control group, including safety, health, and behavioral problems among boys. There were no significant short-run impacts of vouchers on the employment, earnings, or welfare receipt of household heads. Kling et al. (2005), exploiting this same experiment, found that the offer to relocate reduced arrests among youth for violent crimes, reduced arrests of female youth for property crimes, but increased problem behaviors and property crime arrests of male youth. Cattaneo et al. (2009), exploiting a natural experiment, determine that replacing dirt floors with cement floors in urban Mexico has a positive impact of child health. They also find that this intervention significantly improves adult welfare, as measured by increased satisfaction with their housing and quality of life, as well as by reducing the rates of depression and perceived stress. Finally, Devoto et al. (2011) study the effects of randomly facilitating access to credit to finance piped water adoption in urban Morocco. Though they do not find significant health effects among the beneficiaries, something they attribute to the quality of the water already available in the population studied, they also find that self-reported well-being improved substantially among households in the treated group.

The rest of the paper is organized as follows. In section 2 we describe the intervention. Section 3 presents the experimental design while section 4 displays a descriptive analysis of the data taking into account the differences between slum inhabitants and the overall poor population. In Section 5 we introduce the econometric methods used in this study while in section 6 we present our empirical results. Finally, section 7 concludes with some policy lessons.

[3]There are a large number of cross-sectional observational studies that show strong associations between poor housing and indicators of poor health (see Thomson et al., 2001 for a review). Such studies find that common features of substandard housing, including lack of drinking water, poor waste disposal and insufficient food storage, is associated with the prevalence of infectious diseases and respiratory infections. However, since this body of evidence is observational, it remains open to criticism.

## 2 Program

*Un Techo Para Mi País* is a youth-led program which provides basic pre-fabricated houses to extreme poor populations in Latin America. The main objective of the program is to improve household well-being. UTPMP targets the poorest informal settlements and the households within these settlements that live in sub-standard housing (typically homes made of waste materials such as cardboard, tin and plastic, with dirt floors and lacking basic services such as water and sewage).

UTPMP began operations fourteen years ago in Chile, and currently works in eighteen additional Latin American countries including Argentina, Bolivia, Brazil, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay and Venezuela. UTPMP has helped build over 78,000 houses and worked with more than 400,000 volunteers in 19 countries throughout the continent. A key aspect of this success has been the involvement of various sectors of society – private sector, media and university students – with the ultimate goal of alleviating extreme poverty in Latin America.

Every year more than 20,000 committed youths throughout Latin American volunteer with UTPMP. While their work primarily involves the building of transitional homes, over 3,500 permanent volunteers also commit at least one day a week to community organization and participating in social inclusion programs. This second phase of the intervention aims at developing skills through the implementation of social inclusion programs. A third phase of the project consists in working for sustainable neighborhoods. On this, UTPMP acts as a Social Housing Development Entity, helping families in the process of preparing, applying and receiving a permanent house in a new neighborhood. This is pursued by coordinating the activities of the different stakeholders involved in these projects: technical organizations (architects, engineers), government, community, and legal authorities. In this paper we only evaluate the impact of the first step of the program: the building of transitional houses. Methodologically, in order to evaluate only the impact of transitional houses, all settlements in our sample frame did not receive the second and third phase of the intervention during the period of the study.

The intervention model used by UTMP is designed to serve "irregular settlements" in Latin America and the Caribbean. An "irregular settlement" refers to a community comprised of families that inhabit plots which they do not own. Settlements are typically located in dangerous geographic locations (cliffs, slopes, etc) and are plagued by a host of precarious living conditions including: irregular access to basic services (water, electricity and sanitation), significant levels of ground and water contamination, and crowding. The housing units typical of informal settlements are no better than their environment as these are mostly simple units built of discarded materials over dirt floors.

The UTPMP's housing offer is simple- a one room house (6m by 3m) made of pre fabricated pinewood panels, insulated from humidity and insects, and tin roof. In order to reduce dampness, prevent floods and plagues, the floor is built over 15 piles raising it between 30 to 80 centimeters from the ground. Units are modular, portable, constructed with simple tools, and put into place by volunteers working in squads of 4-8 members.

Regardless that the house provided is an important improvement to the preexisting housing situation it should be borne in mind that its facilities are limited, not including bathroom and kitchen or amenities such as plumbing, drinking water, or gas. Likewise, this house alone does not protect children or families from the risks they face in the dirt floor surroundings of the house since, naturally, families and children only spend a fraction of every day in the UTPMP house.

The cost of each transitional house is around $1,000, of which the beneficiary family contributes 10%. The following images are examples of the UTPMP houses in El Salvador and Uruguay:

The design of the house is meant to be low cost, easy to construct and mobile. The house can be easily disassembled and moved to a new location. The purpose of this is to deal with the fact that most of the households in informal settlements do not have formal title to the land they live on. While some of them have lived there for decades, there is the possibility that they could be forced off the land. UTPMP was concerned that upgrading the value of the land with permanent housing might induce both public and private owners to try to reclaim the land, thereby forcing the residents to move and appropriating the house. However, by making the

Figure 1: El Salvador

Figure 2: Uruguay

housing mobile, there is no such incentive. Naturally, this suggests that a more comprehensive slum upgrading might be preceded by a land titling program (see, among others, Galiani and Schargrodsky, 2010).

## 3 Experimental Design

The UTPMP budget and personnel constraints limit the number of house units that can be upgraded at any one time. Under these constraints, UTPMP opted to select beneficiaries through a lottery system in El Salvador and Uruguay, giving all eligible households in a pre-determined geographical neighborhood an equal opportunity to receive the housing upgrade in a given year. We exploit this experimental variability to assess the effects of upgrading slums through improving the houses of the poor on their living conditions. Thus, we rely on a randomized controlled experiment to evaluate the effect of upgrading houses in slums on a set of outcomes of interest.

As it is well known, there are good reasons to allocate the treatment at random among units in order to identify the average effect of that treatment on the population of interest. The use of a randomized experiment constitutes a solution to the problem of selection bias in an evaluation. Here we have the greatest assurance that the program participants and the control group of program-eligible individuals are, on average, alike in every important sense (including observable and unobservable characteristics), except that one group has received the program and the otherwise probabilistically "identical" group has not.

UTPMP first selected a set of eligible settlements – i.e., communities i) of more than 10 families located in public or private lands, and ii) where one or more basic services (electricity, safe water and sewage system) were not available. In these settlements, UTPMP then conducted a census to identify the eligible households – i.e., those households poor enough to be prioritized. Once the eligible households were chosen, they were randomly assigned to treatment and control groups within settlement. Thus, in this study, we exploit single randomized controlled experiments.

Field work (surveys and buildings) required the coordination of the survey firm work (UNIMER in El Salvador and MORI in Uruguay) and the UTPMP program activities. Since UTPMP did not have the capabilities to treat all settlements at once, the program was rolled over in two phases. In El Salvador, phase I took place between August and December of 2007 while phase II between March and August of 2008. In Uruguay, phase I was held between October and December of 2007 while phase II between July and September of 2008. Since randomization was performed within settlement, baselines surveys were collected before each phase.[4] Baseline surveys were collected approximately one month before the beginning of each phase of implementation of treatment. The follow up surveys was conducted between the end September and October of 2009 in El Salvador and between January and March of 2010 in Uruguay, that is, 25 months after the beginning of phase I and 18 months after the beginning of phase II in El Salvador and 27 months after the beginning of phase I and 17 months after the beginning of phase II in Uruguay. Thus, the follow up surveys were collected between 17 and 27 months after treatment assignment.

All surveys collected include modules on socioeconomic characteristics, work, assets, security health, education and self-report measures of satisfaction. Table 1 details the variables constructed for this study.

[4]However, to obtain truthful information from households and to avoid creating any desirability bias in the treatment group, as stated above, the data collection efforts were separated from the implementation of the program itself and were contracted with a highly respected survey firm in each country.

In Table 2 we present general information about our sample, divided between intention and non-intention to treat groups. In El Salvador, we have 23 settlements distributed through the country while in Uruguay we only have 12 settlements, all of them located in the two most important urban municipalities of the country (Montevideo and Canelones). In both countries, randomly, some settlements were assigned a higher level of intensity of treatment. However, due to the small sample size, we do not exploit this feature of the experimental design in the analysis. In El Salvador, 60 percent of households were offered treatment while in Uruguay 55 percent. Thus, we have 421 households (2,111 individuals) in the intention to treat group and 277 households (1,363 individuals) in the non-intention to treat group in El Salvador, while in Uruguay, the respective numbers are 433 households (1,872 individuals) in the intention to treat group and 346 households (1,454 individuals) in the non-intention to treat group.

In the follow up surveys, we have a small number of households that attrited from our sample. In El Salvador (Uruguay), the proportion of households that attrite from the sample is 4.5 (6.0) percent in the intention to treatment group and 5.8 (7.2) percent in the non-intention to treatment group. In both cases, the difference between experimental groups is not statistically significant at conventional levels. Thus, our final follow up sample is 402 (407) households that were offered treatment and 261 (321) household that were not in El Salvador (Uruguay). Of those households, in El Salvador (Uruguay) 87.6 (94.1) percent of the households in the intention to treatment group complied with treatment assignment while 99.6 (87.2) percent of those in the non-intention to treatment group complied with it. Overall, the compliance rate is quite high and justifies the intention-to-treatment analysis we conduct through the paper. Naturally, due to almost perfect compliance rate in the control group in El Salvador and in the intention to treat group in Uruguay, the difference in compliance rate between both experimental groups is significant in both countries.

Finally, we estimate the number of households that move from the settlements they were residing at the time of the baseline survey. We attempted to track all of them in the follow up survey but could only interview a fraction of them so not all of the movers are treated as attriters in the analysis only those that were not interviewed in the follow up survey. Migration rates are reasonable for this population. In El Salvador (Uruguay), 4.8 (7.4) percent of the households in the intention to treatment group moved to another settlement while 5.8 (8.4) percent of those

in the non-intention to treatment group did it. Though the migration rates are consistently 1 percentage point higher in the intention to treatment group in both countries, the differences are not statistically significant at conventional levels.[5]

### 3.1 Experimental Groups Balance

Under randomization, the outcomes of the intention and non-intention to treatment group should be equal on average under the non-treatment situation. Therefore, it is common practice to test for statistical balance of pre-treatment observable variables in order to assess the success of randomization.

In Tables 3a and 3b we present summary statistics, separately for the intention and non-intention to treatment groups, of a large set of pre-treatment variables grouped as socioeconomic characteristics, housing characteristics, assets, satisfaction with quality of housing and life, security, education and health. We also report robust standard errors and test for the null hypothesis of no difference between the mean values of each variable by experimental group.

Though the experimental group appears extremely well balance in Uruguay, where only one variable displays an statistical difference between groups, El Salvador appears less so since as many as seven variables (out of 36) appear unbalanced at the 10 percent significance level. What it is more, some outcome variables as diarrhea prevalence, hours worked by the head of the household, crime (measured by weather the household was assaulted during the last year) and life satisfaction are unbalanced, though not always in the same direction. Note, however, that the difference in diarrhea prevalence is substantial. It might well be that some of the settlements that randomly received a large proportion of treatments differ is some way from the others, a result possible due to the not so large number of settlements available in each experiment (though this did not occur in Uruguay where settlements could be more homogeneous given their concentration in Montevideo and Canelones), especially since the baseline outcomes were measured at two different point in times. Thus, we re-estimate the difference in means for all the variables in both countries controlling for a settlement dummy variable. This analysis shows

[5] All these results are robust to the use of settlement clustered standard errors.

a pretty balanced design since now in El Salvador only 3 variables are unbalanced at the 10 percent significance level while in Uruguay still only 1 variable appears unbalanced at that level of significance.

### 3.2 Baseline Housing Differences Between Experiments

An important strength of this study is to conduct the evaluation of the same intervention in two different populations (and environments). Certainly, Uruguay is much richer than El Salvador. The PPP Gross National Income (GNI) per capita in 2007 was 11,020 US dollars in Uruguay and only 5,640 US dollars in El Salvador. This income difference is present in our sample as well.

Importantly for the interpretation of our results is the comparison of the baseline housing characteristics. In Table 4 we highlight a set of eleven baseline housing characteristics in both countries and test for the null hypothesis of no difference between the mean values of each variable by country. We reject the null hypothesis in all cases at the five percent level. Consistently, baseline housing was substantially better in Uruguay than in El Salvador. For example, in Uruguay only 36.4 percent of households had low quality floors while in El Salvador, 85.4 percent of them were classified as such. In Uruguay, most households had electricity and water connection inside the land on which the house is built (95.9% and 91.5% respectively) while in El Salvador, only 39.1 percent of households had electricity and 21.5 percent of them had water inside the land occupied.

## 4 Slums and Labor Markets

The geographical distribution of poverty is an issue of utmost concern when analyzing the dynamics of slums. First of all, what forces draw the poor to urban areas? Above all, they come for jobs. Urban density makes trade possible; it enables markets. The world's most important market is the labor market, in which one person rents his human capital to people with financial capital. The way in which poor settle themselves in cities is not irrelevant: socio-geographical segregation is one of the most striking features of any modern city – and it is particularly characteristic of big urban areas in developing countries.

One of the most thoroughly studied examples of socio-geographical segregations has been the American cities. The fight against the terrible segregation that remains in those cities is so difficult, in part, because there are economic forces that pull the rich and poor apart. There is a hidden logic behind the concentrated poverty that results from the propensity of the poor to live at the physical center of American cities. That tendency reflects, in part, the power of transportation to shape cities. All forms of travel involve two types of cost: money and time. The cash cost of commuting is the same for rich and poor, but rich people with higher wages give up more income when they spend more time commuting and less time working. As a result the rich are generally willing to pay more for faster trips to work. Yet in most American cities, there are also reversals where the poor live closer to the center than the rich. When a single transportation mode, like driving or taking the subway, dominates, then the rich live closer to the city center and the poor live further away. But when there are multiple modes of transport, then the poor often live closer in order to gain access to public transport. Transportation is not the only force pulling the poor to the center of American cities. Above all, prosperous parents suburbanize to get access to better schools. Central areas are often historic, and as a result they usually have older homes that have depreciated in quality and in price.

Conventional neo-classical explanations for the emergence of slums attribute that to the fact that poor outbid the rich for the kind of housing that impoverished neighborhoods provide. In this sense, poor are more willing to pay than the rich for tracts of land – either in polluted or floodable areas or in slopes, ridges and other complicated geographical environments – that are close to the employment opportunities in the city center. The lack of good public transportation enhances this dynamic since it increases the cost in time and effort to physically reach the labor market. In fact, one of the reasons mentioned by Banerjee et al. (2008) to explain the rise of unemployment in South Africa after the end of the Apartheid in 1994 is the high search cost that the black population faces when looking for a job – racial geographical segregation, which has been highly persistent, confined blacks to areas far away from the urban center which are highly isolated due to the unavailability of good public transportation. The end of the Apartheid resulted in an increase of the labor supply amongst black population that, in light of the high search costs, could not find a match on the labor demand side.

What the theory predicts, then, is that slum dwellers may have a strong preference for being close to the labor market so strong that it may offset any kind of disadvantage that living in an irregular settlement may cause. In this sense, our study provides useful information about the specific characteristics of the slum dwellers and allows for a comparison with the rest of the poor population. In table 5 we compare some of this data with information for poor and non-poor population from national household surveys of Uruguay and El Salvador. In the case of Uruguay, the national survey allows us to distinguish between slum poor and non-slum poor, whilst in El Salvador the information for slum dwellers comes exclusively from our baseline survey. The salient aspects of the comparison are the following: in general, housing and the possession of assets is worse in slum dwellers than in the average national poor. For instance, while 39% of the poor of El Salvador have dirty floors in their houses, that same figure among slum inhabitants is about 94%. In Uruguay, 24% of the non-slum poor households have dirty floors whilst 40% of the slum poor households have them. Rates for water connection, access to toilet and sewage, possession of refrigerators and TV sets are significantly higher for the average poor household of El Salvador than for slum dwellers in that same country. In Uruguay the differences are smaller – in part because the average levels are much higher than in El Salvador- but still statistically significant. However, slum inhabitants perform better in measures related to the labor market: first of all, their income is significantly higher than that of the total poor population. In El Salvador, slum dwellers included in our baseline survey earn on average 64 USD per month per capita whilst the average poor earn 45 USD being the former 42% more than the latter. In Uruguay, slum poor earn an impressive 56% more than non-slum poor. Interestingly, whilst in Uruguay the difference in earnings happens both among men and women, in El Salvador it is only slum women who earn more than the average poor women; slum men and average poor men earn almost the same. Secondly, the employment rates are higher for slum poor than non-slum poor in Uruguay. In El Salvador the differences are not statistically significant. However, self employment is more extended among slum inhabitants than among the average poor population of El Salvador.

The big picture that emerges from this comparison lends some credibility to the hypothesis that slum inhabitants are more willing to trade off living conditions for a better access to labor market than non-slum poor population. There appears to be, thus, an intrinsic "selection" among the poor those who prefer a good access to labor market in cities tend to gather in

slums, on average closer to productive activity than other parts of the urban conglomerates, whilst those who are less willing to do so live in better environments, although at significant cost in terms of income. Understanding these differences is key to the design of policies that try to improve the living conditions of urban poor.

# 5 Methods

Once treatment status has been shown to be exogenous, estimation of average treatment effects is straightforward. As we have shown in section 3, once we control for settlement fixed effects, randomization of treatment status was very successful. Additionally, compliance with intention to treatment is approximately 90 percent in both countries. Therefore, we report estimates of the average intention to treatment effect for the outcomes of interest in our study. Given the high compliance rate, these parameters are likely to be very close to the average treatment effects. Operationally, we analyze the effect of the program on variable $Y$ by estimating the following regression model:

$$Y_{ij} = \alpha + \gamma Intention\,to\,Treat_{ij} + \beta X_{ij} + \mu_j + \varepsilon_{ij} \tag{1}$$

where $i$ indexes households or individuals, $j$ indexes settlements, $Y$ is any of the outcomes under study, and $\gamma$ is the parameter of interest, which captures the total causal effect of the program (a dummy variable that equals 1 for the households or individuals that experimentally were allocated to treatment, and 0 otherwise) on the outcome under consideration.[6] $X$ is a vector of pre-treatment characteristics, $\mu$ is a settlement fixed effect, and $\varepsilon$ is the error term. Given that randomization was conducted within settlement, after controlling by settlement fixed effect, we can assume that the error terms are not clustered. Thus, we report only robust standard errors

[6]Some of the variables under study are Limited Dependent Variables (LDV). The problem of causal inference with LDV is not fundamentally different from the problem of causal inference with continuous outcomes. If there are no covariates or the covariates are sparse and discrete, linear models (and associated estimation techniques like 2SLS) are no less appropriate for LDV than for other types of dependent variables. This is certainly the case in a randomized control trial where controls are only included to improve efficiency, but their omission would not bias the estimates of the parameters of interest.

in all the analysis in the empirical section.[7]

Finally, note that it is also common practice to report difference in differences estimates of program effects when some outcome variables are unbalanced at baseline. As we illustrate in the next section using health outcomes, this is potentially problematic since it might just reflect a regression to the mean, especially if randomization was successful and hence, there were no underlying systematic motives to account for those baseline differences.

# 6 Empirical Results

We subsequently study the effect of the *Un Techo* program on several outcome variables of interest including satisfaction with the house and life satisfaction, security, assets, labor supply, and child health. We begin by demonstrating that offering the benefits provided by Un Techo had an impact in terms of the quality of housing. This is a necessary condition for this intervention to have any impact on the outcomes studied.

We report the results of an intention-to-treat analysis for the *Un Techo* program on the outcomes of interest. We estimate this parameter by regressing the dependent variable on a dummy variable indicating whether or not the household was offered this benefit and a large set of control variables. For each dependent variable, we estimate two different linear regression specifications. Model 1 estimates the treatment effect on the response variables studied without including any control variables. Model 2 adds a set of pre-treatment sociodemographic control variables detailed in the notes to the tables.

## 6.1 Housing

The main intervention of the *Un Techo* program is on housing and we expect, thus, that treated households will exhibit a significant improvement in the quality of the house they live in with respect to the control group. It could also be that, by having a better house, treated households

[7]Nevertheless, all the results in the next section are robust to re-estimate the standard errors by clustering the errors at the settlement level.

perceive incentives to self-improve their house by investing on it.

In Table 6 we present the results for the effects of the program on housing. As expected, the program substantially improves the quality of floors, walls and roofs as well as the share of rooms with window in the house. This is exactly what the program does. Since houses where worse off in El Salvador than in Uruguay to start with, the absolute effects are consistently larger in the first case compared to the second one. However, the effect, measured in relation to the baseline level, tends to be larger in Uruguay than in El Salvador. In all cases the effects are large both in absolute as well as relative terms. *Un Techo* substantially improves housing in these dimensions.

In El Salvador, we do find a significant reduction in the likelihood that a family uses the kitchen also as a place to sleep. However, the program has no other effect on housing. Families do not improve their houses as a response to the improvement on them induced by the program. In particular, there are no effects on access to water, electricity or sanitation.

As a general remark, then, we find that the *Un Techo* program has the expected positive effect on the quality of housing but it is restricted only to that dimension. There is no further housing improvement done by the treated households. This may well happen because of the transitional nature of the houses provided by the program. Lastly, it should be mentioned that all the results we find are robust to the estimation of clustered standard errors.

## 6.2 Satisfaction with house and quality of life

An important aim of the *Un Techo* program is not only providing good quality houses to slum dwellers, but also giving them a sense of dignity in their lives. Living in a better house can be a source of satisfaction, dignity and pride per se, aside from other dimensions such as health, education or labor outcomes. The studies of Cattaneo et al. (2009) and Devoto et al. (2011) mentioned previously show how programs directed to the improvement of housing conditions resulted in increased satisfaction and better mental well being.

Table 7 presents the program effects on self-reported measures of satisfaction with the house as well with an overall self-reported measure of quality of life. In both countries, all measures

substantially increase. Families are happier with their houses and with their lives.

The gains are substantially larger in El Salvador than in Uruguay, which is consistent with the fact that the houses improve more in the former case than in the latter one. For instance, the index that measures satisfaction with the quality of floors is slightly less than 300% higher in households in the treatment group with respect to the control group in El Salvador, whilst in Uruguay the index is around 50% higher in intention to treat households than in control group households. Similarly, satisfaction with quality of life is 150% higher in intention to treat households in El Salvador, whilst in Uruguay the same figure is around 40%.

What our results show is that, like the interventions analyzed by Cattaneo et al. (2009) and Devoto et al. (2011), improvement in housing conditions has a clear positive effect on the happiness and mental well being of poor slum dwellers. This is a dimension of social policy that it is often underestimated but that can be crucial to the "life experience" of poor people and, thus, should be taken into account whenever analyzing the outcome of housing programs like *Un Techo*.

### 6.3 Security

Security is one of the most important worries of urban slum dwellers. Information from our baseline survey of El Salvador analyzed extensively in Cooper et al. (2009) shows that 49% of the head of households felt frequently, a lot of times or always insecure and 59% felt insecure when leaving their homes alone. In this sense, it could be argued that providing a better house could potentially reduce the feeling of insecurity.

In Table 8 we present the results concerning several measures of security related to housing. We report the effect of the program on whether it feels safe inside the house during the last year, whether it is safe to leave the house alone during the last year, whether it is safe to leave the kids alone in the house during the last year and whether the house was stolen during the last year. Our estimations show that in El Salvador all self-reported measures of security increase substantially – the increase in the index for security inside the house is around 30% and is about 90% in the index that measures whether it is safe to leave the kids alone – while no effect is detected in Uruguay. We do not find an effect of the program on crime however – there are

no reported changes in the frequency of robbing the houses during the last year in either El Salvador or Uruguay.

### 6.4 Possession of assets

There are different ways in which housing conditions can affect the possession of assets. First of all, if a better house provides security to those who live in it, then it will also provide more security to the assets inside it. Thus, dwellers can invest more in buying assets since they will have a lower risk of being lost because of a robbery or because of the collapse of a bad quality ceiling or a floor. On the other hand, having a good house can also improve the use of assets and, thus, stimulate their acquisition.

Table 9 analyses the performance of different variables corresponding to the possession of assets. We estimate the effect of the program on possession of TV, Fan, Kitchen or Gas Stove and Refrigerator. The results show, however, that there is no effect of the program in the possession of any of the assets mentioned before.[8]

### 6.5 Labor outcomes

Given the fact that, as shown in section 4, slum dwellers in both El Salvador and Uruguay exhibit better outcomes in the labor market than the rest of the poor population of those countries, it is interesting to see whether changes in housing can enhance that differential performance. Better housing can provide a safer environment for the reproduction of human capital and, thus, can have an effect on labor outcomes.

In Table 10 we present the results of our analysis with respect to labor outcomes. We estimate whether a better house, directly or indirectly, could stimulate labor supply and earnings – in particular, the income per capita of the household, the size of the household and whether either the head or the spouse work more. As it can be seen, we do not detect significant effects on

[8]Controlling also for the possession of land property rights does not change these results.

any of these outcomes. Thus we can conclude that better housing, at least in the way that it is provided by the *Un Techo* program, has no effect on the labor outcomes of households.

### 6.6 Health

The reasons for which better housing can improve the health of those who live in them are clear. For instance, dirt floors usually represent a big threat to child health. In the study carried out by Cattaneo et al. (2009) concerning the replacement of dirt floors for cement floors, the authors found a statistically significant reduction in the incidence of parasitic infections, diarrhea and the prevalence of anemia. Another source of improvements in health concerns the reduction in indoor air pollution. Duflo et al. (2008) have shown that improper ventilation of houses and the use of precarious kitchen stoves can have significantly negative effects on respiratory – and even general – health. The houses provided by the *Un Techo* program provide a better ventilation than most of the slum dwellings and, thus, it is possible that they may have a positive effect on health.

The results on Table 11, however, are discouraging in this sense. We estimate whether the better houses improve child health using as indicators diarrhea and respiratory disease prevalence and do not find any significant effect in either El Salvador or Uruguay.[9]

## 7 Conclusion

This paper studies the impact of providing better houses in situ to slum dwellers in El Salvador and Uruguay. First of all we find that, as expected, the quality of housing greatly improves after the intervention. Secondly, satisfaction with housing and with the quality of life increases drastically, in particular in El Salvador were the pre-treatment conditions were worse than in Uruguay. Lastly, we find that, apart from improvements in the quality of housing and general satisfaction, the provision of better houses has virtually no other effect. Perceptions of security

[9]It is worth noting that in El Salvador, where these two variables show quite larger values in the baseline for the treated households, a typical difference-in-difference estimator is likely to provide biased estimates of the causal effects of the program as a result of regression to the mean of these outcome variables. Indeed, in the case of respiratory diseases, the estimated effect would be almost 10 times larger, with a P-value = 0.158 while in the case of diarrhea the estimated effect would be 4 times larger, with a P-value = 0.014.

only change for good in El Salvador, whilst there is no change in Uruguay. In both countries better housing has no effect either in the possession of assets or in labor outcomes, and child health is also unaffected by the intervention.

These findings contribute to the debate on slum upgrading. What emerges from our analysis is that the provision of the kind of house upgrade *in situ* we studied in this paper has limited effects on the living conditions of slum dwellers. A quick conclusion from this fact would be to discard *in situ* upgrading and opt for policies of geographical relocation. This could be potentially wrong: Cattaneo et al (2006) analyzed the performance of the Mexican program "Iniciamos Tu Casa" which consisted in providing new houses to poor inhabitants – these houses were located far from the city center. A year after the program had started, the authors found that a large fraction of the participants had abandoned the houses; moreover, those who remained in them mentioned that, although housing conditions were better, the new neighborhoods had poor access to public goods and general infrastructure. *In situ* upgrading, thus, still remains a valid policy choice. This is also consistent with the evidence presented in Baker et al. (2006) for Mumbai. These authors, use a residential location model to assess the welfare of a in situ slum upgrade program and a slum reallocation program and conclude that, at least for those households reallocated further away, the disbenefits of changes in commute distance wipe out the housing benefits of the program and would be better off with the more limited house improvement provided by the in situ intervention.

In this sense, our findings suggest that limited *in situ* improvements in housing is not sufficient for significant changes in living conditions to happen. Providing better houses improves slum dwellers' satisfaction with life, but does not reduce the various ailments they suffer from living in slums. What might be necessary, then, is to carry out wider programs of slum upgrading.

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# Tables

Table 1: Description of Outcome Variables and Sample Sizes in 2008 Follow Up Survey – Uruguay and El Salvador

| Variable | Description | El Salvador | | Uruguay | |
|---|---|---|---|---|---|
| | | Observations Treatment | Observations Control | Observations Treatment | Observations Control |
| Monthly Income Per Capita (USD) | Monthly Income per capita reported by the household (USD). El Salvador: at constant dollars of July of 2007; Uruguay: at constant dollars of July of 2007 | 319 | 211 | 349 | 285 |
| Assets Value Per Capita (USD) | Asset Value per capita reported by the household. El Salvador: at constant dollars of July of 2007; Uruguay: at constant dollars of July of 2007. | 392 | 271 | 401 | 318 |
| Age | Age in month for children below 5 years old | 341 | 233 | 485 | 345 |
| Age Squared | The square of the age in months for children below 5 years old | 341 | 233 | 485 | 345 |
| Head of HH's Age | Age of head of household in years | 397 | 257 | 397 | 302 |
| Gender (1 = Man) | Indicator equal to one if the children below 5 years old is a man | 341 | 233 | 485 | 345 |
| Head of HH's Gender (1=Man) | Indicator equal to one if the head of household is a man | 398 | 258 | 399 | 303 |
| Head of HH's Years of Schooling | Years of Schooling of head of household defined in base of the higher level of education reached | 379 | 248 | 293 | 227 |
| Spouse's Age | Age of the spouse of head of household | 147 | 96 | 92 | 82 |

*... Table 1 continued*

| Variable | Description | El Salvador | | Uruguay | |
|---|---|---|---|---|---|
| | | Observations Treatment | Observations Control | Observations Treatment | Observations Control |
| Spouse's Years of Schooling | Years of Schooling of the spouse of head of household defined in base of the higher level of education reached | 142 | 95 | 65 | 59 |
| Hours worked last week by Head of HH | Number of hours worked by the head of household on main and secondary job during the last week | 246 | 147 | 286 | 199 |
| Hours worked last week by Spouse | Number of hours worked by the spouse of head of household on main and secondary job during the last week | 31 | 20 | 51 | 49 |
| HH Size | Number of household members | 398 | 273 | 407 | 321 |
| Number of Rooms | Number of rooms (observed by the enumerator) | 398 | 273 | 407 | 321 |
| Share of Rooms with Dirty Floors | Proportion of rooms with dirty floor (observed by the enumerator) | 398 | 273 | 407 | 321 |
| Share of Rooms with Low Quality Walls | Proportion of rooms with walls made of weak materials like cardboard, bamboo, asbesto, tire, plastic, adobe, rocks, fiberglass, zinc or metalic sheets (observed by the enumerator) | 398 | 273 | 407 | 321 |

*... Table 1 continued*

| Variable | Description | El Salvador | | Uruguay | |
|---|---|---|---|---|---|
| | | Observations Treatment | Observations Control | Observations Treatment | Observations Control |
| Share of Rooms with Low Quality Roofs. | Proportion of rooms with roofs made of weak materials like cardboard, bamboo, asbesto, tire, plastic, zinc, metalic sheets or tiles (observed by the enumerator) | 398 | 273 | 407 | 321 |
| Share of Rooms with Window | Proportion of rooms with at least 1 window (observed by the enumerator) | 398 | 273 | 407 | 321 |
| Water Connection | Indicator equal to one if the enumerator observes and the household reports having a water connection to the piped water system | 398 | 273 | 403 | 317 |
| House with Own Toilet | Indicator equal to one if the enumerator observes and the household reports having a toilet inside the house | 398 | 273 | 407 | 321 |
| Electricity Connection inside the House | Indicator equal to one if the enumerator observes and the household reports having a connection to the electricity system inside the house | 398 | 273 | 403 | 317 |
| Sink on Room where food is prepared | Indicator equal to one if the enumerator observes and the household reports that there is a sink inside the room where food is prepared | 398 | 273 | 403 | 314 |

*... Table 1 continued*

| Variable | Description | El Salvador | | Uruguay | |
|---|---|---|---|---|---|
| | | Observations Treatment | Observations Control | Observations Treatment | Observations Control |
| Room where food is prepared is also used as Bedroom | Indicator equal to one if the household reports that the room where food is prepared is also used as bedroom | 398 | 273 | 402 | 313 |
| Use Gas Stove or Kerosene to Cook | Indicator equal to one if the household reports the use of gas stove or kerosene to cook | 398 | 273 | 407 | 321 |
| Refrigerator | Indicator equal to one if the enumerator observes and the household reports having a refrigerator | 398 | 273 | 407 | 321 |
| T.V. | Indicator equal to one if the enumerator observes and the household reports having a television | 398 | 273 | 407 | 321 |
| Fan | Indicator equal to one if the enumerator observes and the household reports having a fan | 398 | 273 | 407 | 321 |
| Kitchen or Gas Stove | Indicator equal to one if the enumerator observes and the household reports having a kitchen or gas stove | 398 | 273 | 407 | 321 |
| Satisfaction with Floor Quality | Indicator equal to one if the respondent reports being satisfied or very satisfied with quality of house?s floors | 398 | 273 | 402 | 316 |
| Satisfaction with Wall Quality | Indicator equal to one if respondent reports being satisfied or very satisfied with the quality of house?s walls | 398 | 273 | 402 | 316 |

*... Table 1 continued*

| Variable | Description | El Salvador | | Uruguay | |
|---|---|---|---|---|---|
| | | Observations Treatment | Observations Control | Observations Treatment | Observations Control |
| Satisfaction with Roof Quality | Indicator equal to one if respondent reports being satisfied or very satisfied with the quality of house?s roofs | 398 | 273 | 402 | 316 |
| Satisfaction with House Protection against Water when it rains | Indicator equal to one if respondent reports being satisfied or very satisfied with the protection against water when it rains provided by the house | 398 | 273 | 402 | 316 |
| Satisfaction with Quality of Life | Indicator equal to one if respondent reports being satisfied or very satisfied with the quality of life | 338 | 63 | 400 | 315 |
| Safe inside the house during the last 12 months | Indicator equal to one if respondent has never or rarely felt unsafe inside the house during the last 12 months | 398 | 273 | 407 | 321 |
| Safe leaving the house alone during the last 12 months | Indicator equal to one if respondent has never or rarely felt unsafe leaving the house alone during the last 12 months | 398 | 273 | 407 | 321 |
| Safe leaving the kids alone in the house during the last 12 months | Indicator equal to one if respondent feels safe or very safe leaving the kids alone in the house during the last 12 months | 398 | 273 | 407 | 321 |
| The house had been robbed in the last 12 months | Indicator equal to one if respondent reports the house had been robbed during the last 12 months | 398 | 273 | 402 | 315 |

*... Table 1 continued*

| Variable | Description | El Salvador | | Uruguay | |
|---|---|---|---|---|---|
| | | Observations Treatment | Observations Control | Observations Treatment | Observations Control |
| Respiratory Disease during last 4 weeks (< 5 years old) | Indicator equal to one if the mother reports that a child below 5 years old had a respiratory disease in the last four weeks | 334 | 232 | 467 | 337 |
| Diarrhea during last 4 weeks (< 5 years old) | Indicator equal to one if the mother reports that a child below 5 years old had diarrhea in the last four weeks | 334 | 232 | 466 | 335 |

Table 2: General Information[a]

| | El Salvador | | | Uruguay | | |
|---|---|---|---|---|---|---|
| | Observations Treatment | Observations Control | Mean Differences | Observations Treatment | Observations Control | Mean Differences |
| **General Information** | | | | | | |
| No. Households | 421 | 277 | | 433 | 346 | |
| | 60.32% | 39.68% | | 55.58% | 44.42% | |
| No. Individuals | 2,111 | 1,363 | | 1,872 | 1,454 | |
| | 60.77% | 39.23% | | 56.28% | 43.72% | |
| Attriters | 19 | 16 | | 26 | 25 | |
| | 4.51% | 5.78% | | 6.00% | 7.23% | |
| Attrition Rate | 0.045 | 0.058 | −0.013 | 0.060 | 0.072 | −0.012 |
| | (0.012) | (0.016) | (0.017) | (0.011) | (0.010) | (0.013) |
| | (0.010) | (0.014) | (0.016) | (0.011) | (0.013) | (0.017) |
| Final Follow Up Sample | 402 | 261 | | 407 | 321 | |
| Compliers | 352 | 260 | | 383 | 280 | |
| | 87.6% | 99.6% | | 94.1% | 87.2% | |
| Compliance Rate | 0.876 | 0.996 | −0.120 | 0.941 | 0.872 | 0.069 |
| | (0.019) | (0.003) | (0.020)*** | 0.017 | 0.062 | (0.071) |
| | (0.016) | (0.003) | | 0.011 | 0.018 | |
| | | | (0.020)*** | | | (0.021)*** |
| Movers[b] | 20 | 16 | | 32 | 29 | |
| | 4.75% | 5.78% | | 7.39% | 8.38% | |
| Movers Rate | 0.048 | 0.058 | −0.010 | 0.074 | 0.084 | −0.010 |
| | (0.015) | (0.013) | (0.016) | (0.012) | (0.027) | (0.018) |
| | (0.010) | (0.014) | (0.017) | (0.012) | (0.014) | (0.019) |

[a] Reported Results: Number of observations and percentage. For Attrition Rates, Compliance Rates and Movers Rates, the coefficient, clustered standard error (23 clusters for El Salvador and 12 clusters for Uruguay) and standard error are reported in that order. Data Source: 2007 - 2009 UTPMP Panel Data

[b] Movers means households who moved out of original slum between baseline and follow up. Some of them were found and surveyed in follow up, and others were not found and are attritors.

*Significantly at 10% level. **Significantly at 5% level. ***Significantly at 1% level.

Table 3: Differences in Pre-Treatment Means. Treatment vs Control. Baseline Survey.[a]

| Variable | El Salvador | | | Uruguay | | |
|---|---|---|---|---|---|---|
| | Mean Control | Mean Differences | Mean Differences w/settlement dummies | Mean Control | Mean Differences | Mean Differences w/settlement dummies |
| **Income and Assets** | | | | | | |
| Assets Value Per Capita (USD) | 54.404 | −8.632 | 5.937 | 55.464 | −4.840 | −6.209 |
| | (8.271) | (9.968) | (11.994) | (5.064) | (6.540) | (7.249) |
| Monthly Income Per Capita (USD) | 30.987 | −0.715 | −1.728 | 87.834 | −13.873 | −15.627 |
| | (1.923) | (2.396) | (2.895) | (7.311) | (7.309) | (10.789) |
| T.V. (=1) | 0.390 | 0.03 | −0.021 | 0.789 | 0.035 | 0.025 |
| | | (0.037) | (0.043) | (0.021) | (0.028) | (0.029) |
| | (0.029) | | | | | |
| Fan (=1) | 0.047 | −0.01 | 0.005 | 0.257 | 0.025 | 0.023 |
| | (0.012) | (0.015) | (0.022) | (0.023) | (0.031) | (0.035) |
| Kitchen or Gas Stove (=1) | 0.498 | −0.075 | −0.022 | 0.630 | 0.007 | 0.024 |
| | (0.030) | (0.038)* | (0.043) | (0.025) | (0.034) | (0.036) |
| Refrigerator (=1) | 0.094 | −0.039 | −0.016 | 0.488 | −0.008 | 0.015 |
| | (0.017) | (0.020)* | (0.025) | (0.026) | (0.036) | (0.039) |
| **Characteristics of the House** | | | | | | |
| Number of Rooms | 2.350 | 0.134 | −0.141 | 2.659 | 0.013 | 0.066 |
| | (0.069) | (0.089) | (0.095) | (0.071) | (0.095) | (0.104) |
| Share of Rooms with Dirty Floors | 0.857 | −0.004 | 0.039 | 0.361 | 0.005 | −0.015 |
| | (0.015) | (0.019) | (0.021)* | (0.024) | (0.032) | (0.033) |
| Share of Rooms with Low Quality Walls | 0.920 | −0.039 | 0.006 | 0.692 | −0.015 | −0.043 |
| | (0.011) | (0.017)** | (0.015) | (0.028) | (0.037) | (0.039) |
| Share of Rooms with Low Quality Roofs | 0.999 | 0.000 | −0.001 | 0.991 | 0.004 | 0.006 |
| | (0.001) | (0.001) | (0.002) | (0.004) | (0.005) | (0.006) |

*... Table 3 continued*

| Variable | El Salvador | | | Uruguay | | |
|---|---|---|---|---|---|---|
| | Mean Control | Mean Differences | Mean Differences w/settlement dummies | Mean Control | Mean Differences | Mean Differences w/settlement dummies |
| Share of Rooms with Window | 0.179 | −0.028 | 0.002 | 0.583 | −0.029 | −0.025 |
| | (0.017) | (0.021) | (0.024) | (0.021) | (0.028) | (0.029) |
| Water Connection (=1) | 0.195 | 0.033 | −0.033 | 0.908 | 0.014 | 0.018 |
| | (0.023) | (0.031) | (0.030) | (0.015) | (0.020) | (0.021) |
| Sink on Room where food is prepared (=1) | 0.007 | 0.007 | 0.002 | 0.253 | 0.002 | 0.024 |
| | (0.005) | (0.007) | (0.010) | (0.023) | (0.031) | (0.034) |
| Room where food is prepared is also used as Bedroom (=1) | 0.327 | −0.023 | 0.055 | 0.447 | −0.028 | −0.012 |
| | (0.028) | (0.036) | (0.039) | (0.026) | (0.036) | (0.038) |
| Electricity Connection (=1) | 0.386 | 0.008 | −0.063 | 0.957 | 0.004 | 0.004 |
| | (0.029) | (0.037) | (0.038) | (0.010) | (0.014) | (0.015) |
| Use Gas Stove or Kerosene to Cook (=1) | 0.141 | 0.054 | 0.010 | 0.468 | −0.027 | −0.030 |
| | (0.020) | (0.028)* | (0.030) | (0.026) | (0.035) | (0.037) |
| House with Own Toilet (=1) | 0.448 | 0.058 | −0.056 | 0.598 | 0.065 | 0.058 |
| | (0.029) | (0.038) | (0.042) | (0.026) | (0.034)* | (0.036) |
| **Satisfaction with Quality of House and Life** | | | | | | |
| Satisfaction with Floor Quality | 0.116 | 0.018 | 0.018 | 0.188 | −0.021 | −0.019 |
| | (0.019) | (0.025) | (0.027) | (0.021) | (0.027) | (0.029) |
| Satisfaction with Wall Quality | 0.083 | 0.012 | 0.004 | 0.121 | 0.001 | −0.001 |
| | (0.016) | (0.021) | (0.025) | (0.017) | (0.023) | (0.026) |
| Satisfaction with Roof Quality | 0.091 | 0.026 | 0.008 | 0.185 | −0.037 | −0.025 |
| | (0.017) | (0.023) | (0.026) | (0.020) | (0.027) | (0.028) |

*... Table 3 continued*

| Variable | El Salvador | | | Uruguay | | |
|---|---|---|---|---|---|---|
| | Mean Control | Mean Differences | Mean Differences w/settlement dummies | Mean Control | Mean Differences | Mean Differences w/settlement dummies |
| Satisfaction with House Protection against Water when it rains | 0.090 | 0.012 | −0.005 | 0.180 | −0.022 | −0.014 |
| | (0.017) | (0.022) | (0.025) | (0.020) | (0.027) | (0.029) |
| Satisfaction with Quality of Life | 0.181 | 0.085 | 0.025 | 0.228 | −0.009 | −0.016 |
| | (0.023) | (0.031)*** | (0.033) | (0.022) | (0.030) | (0.032) |
| **Perception of Security** | | | | | | |
| Safe inside the house during the last 12 months (=1) | 0.538 | −0.011 | −0.045 | 0.590 | 0.032 | 0.030 |
| | (0.030) | (0.038) | (0.043) | (0.026) | (0.035) | (0.037) |
| Safe leaving the house alone during the last 12 months (=1) | 0.419 | 0.016 | −0.011 | 0.295 | 0.022 | 0.030 |
| | (0.029) | (0.038) | (0.043) | (0.024) | (0.033) | (0.035) |
| Safe leaving the kids alone in the house during the last 12 months (=1) | 0.166 | −0.019 | −0.049 | 0.121 | 0.029 | 0.015 |
| | (0.022) | (0.028) | (0.032) | (0.017) | (0.024) | (0.026) |
| House robbed in the last 12 months (=1) | 0.036 | 0.042 | 0.053 | 0.272 | 0.008 | −0.013 |
| | (0.011) | (0.017)** | (0.020)** | (0.024) | (0.032) | (0.032) |
| **Sociodemographic Characteristics** | | | | | | |
| HH Members | 4.921 | 0.094 | −0.040 | 4.202 | 0.121 | 0.087 |
| | (0.140) | (0.187) | (0.233) | (0.125) | (0.173) | (0.191) |
| Head of HH's Age | 44.227 | 0.811 | 0.129 | 37.314 | 0.906 | 1.203 |
| | (1.013) | (1.303) | (1.555) | (0.751) | (1.026) | (1.108) |
| Head of HH's Gender (1=Man) | 0.769 | 0.029 | 0.028 | 0.537 | −0.036 | −0.043 |
| | (0.025) | (0.032) | (0.036) | (0.027) | (0.036) | (0.038) |

*... Table 3 continued*

| Variable | El Salvador | | | Uruguay | | |
|---|---|---|---|---|---|---|
| | Mean Control | Mean Differences | Mean Differences w/settlement dummies | Mean Control | Mean Differences | Mean Differences w/settlement dummies |
| Head of HH's Education Level | 2.326 | 0.188 | −0.053 | 5.202 | 0.422 | 0.397 |
| | (0.170) | (0.225) | (0.245) | (0.186) | (0.271) | (0.288) |
| Spouse's Age | 41.598 | 0.898 | −0.779 | 38.872 | −2.013 | −2.108 |
| | (1.474) | (1.936) | (2.420) | (1.591) | (2.036) | (2.200) |
| Spouse's Education Level | 1.677 | 0.277 | 0.215 | 6.177 | −0.229 | −0.190 |
| | (0.228) | (0.318) | (0.342) | (0.523) | (0.693) | (0.734) |
| Hours worked last week by Head of HH (including Secondary job) | 40.963 | 0.315 | 1.373 | 39.256 | −0.338 | −0.049 |
| | (1.461) | (1.909) | (2.306) | (1.389) | (1.821) | (1.794) |
| Hours worked last week by Spouse (including Secondary job) | 25.294 | 6.775 | 10.824 | 37.860 | 2.698 | 6.912 |
| | (3.712) | (5.629) | (5.827)* | (2.630) | (4.162) | (4.790) |
| Health (<5 years old) | | | | | | |
| Respiratory Disease during last 4 weeks (=1) | 0.635 | 0.035 | 0.042 | 0.360 | −0.014 | −0.050 |
| | (0.037) | (0.475) | (0.056) | (0.029) | (0.038) | (0.044) |
| Diarrhea during last 4 weeks (=1) | 0.144 | 0.105 | 0.043 | 0.083 | 0.009 | −0.014 |
| | (0.027) | (0.038)*** | (0.042) | (0.016) | (0.022) | (0.024) |

a On material of rooms, were only included those households that reported information for all rooms. On monetary variables, observations over p99 were not considered. On hours worked, cases that reported more than 84 hours were not considered. Standard errors are reported in parenthesis. Data source: 2007 - 2008 UTPMP Baseline data

*Significantly at 10% level. **Significantly at 5% level. ***Significantly at 1% level

Table 4: Differences of Means between Countries. Treatment and Internal Control Groups. Baseline Survey.[a]

| Variable | Total Observations | Mean El Salvador | Mean Uruguay | Mean Differences |
|---|---|---|---|---|
| **Characteristics of the House** | | | | |
| Number of Rooms per HH | 1,477 | 2.431 | 2.666 | −0.235 |
| | | (0.086) | (0.060) | (0.104)** |
| | | (0.043) | (0.047) | (0.065)*** |
| Share of Rooms with Dirty Floors | 1,441 | 0.854 | 0.364 | 0.490 |
| | | (0.015) | (0.028) | (0.032)*** |
| | | (0.009) | (0.016) | (0.018)*** |
| Share of Rooms with Low Quality Walls | 1,255 | 0.896 | 0.683 | 0.213 |
| | | (0.036) | (0.044) | (0.056)*** |
| | | (0.008) | (0.018) | (0.019)*** |
| Share of Rooms with Low Quality Roofs | 1,438 | 0.999 | 0.993 | 0.006 |
| | | (0.000) | (0.002) | (0.002)*** |
| | | (0.000) | (0.002) | (0.002)*** |
| Share of Rooms with Window | 1,470 | 0.163 | 0.567 | −0.405 |
| | | (0.017) | (0.015) | (0.022)*** |
| | | (0.010) | (0.014) | (0.017)*** |
| Water Connection (=1) | 1,475 | 0.215 | 0.915 | −0.700 |
| | | (0.051) | (0.013) | (0.053)*** |
| | | (0.015) | (0.010) | (0.018)*** |
| Sink on Room where food is prepared (=1) | 1,462 | 0.012 | 0.254 | −0.242 |
| | | (0.005) | (0.025) | (0.024)*** |
| | | (0.004) | (0.015) | (0.016)*** |
| Room where food is prepared is also used as Bedroom (=1) | 1,459 | 0.313 | 0.432 | −0.119 |
| | | (0.047) | (0.025) | (0.053)** |
| | | (0.017) | (0.017) | (0.025)*** |
| Electricity Connection inside the House (=1) | 1,477 | 0.391 | 0.959 | −0.568 |
| | | (0.058) | (0.006) | (0.058)*** |
| | | (0.018) | (0.007) | (0.019)*** |

*... Table 4 continued*

| Variable | Total Observations | Mean El Salvador | Mean Uruguay | Mean Differences |
|---|---|---|---|---|
| Use Gas Stove or Kerosene to Cook (=1) | 1,477 | 0.173 | 0.453 | −0.280 |
| | | (0.034) | (0.052) | (0.061)*** |
| | | (0.014) | (0.017) | (0.023)*** |
| House with Own Bathroom (=1) | 1,477 | 0.483 | 0.634 | −0.151 |
| | | (0.041) | (0.024) | (0.047)*** |
| | | (0.018) | (0.017) | (0.025)*** |

a On material of rooms, were only included those households that reported information for all rooms. On monetary variables, observations over p99 were not considered. Reported Results: Standard errors clustered at survey-block level shown in parentheses (23 clusters for El Salvador and 12 clusters for Uruguay) and standard error are reported in that order. Data source: 2007 - 2008 UTPMP Baseline data

*Significantly at 10% level. **Significantly at 5% level. ***Significantly at 1% level

Table 5a: Differences of Means between groups in El Salvador[a]

| Variable | (1) Mean of Observations Non Poor (EHPM 2008) | (2) Mean of Observations National Poor (EHPM 2008)[b] | (3) Mean of Observations Settlements (UTPMP 2007-08) | Dif (2)-(3) | Dif (2)-(3)[c] |
|---|---|---|---|---|---|
| **Income Indicators (HH)** | | | | | |
| Monthly Income Per Capita (USD) | 401.950 | 45.838 | 64.175 | −18.337 | −22.647 |
| | (6.894) | (0.467) | (6.806) | (6.802)*** | (7.162)*** |
| % of Wage Work | 0.457 | 0.511 | 0.458 | 0.053 | 0.042 |
| | (0.005) | (0.006) | (0.016) | (0.016)*** | (0.016)** |
| % of Self Employment | 0.194 | 0.316 | 0.517 | −0.201 | −0.189 |
| | (0.003) | (0.005) | (0.019) | (0.019)*** | (0.020)*** |
| % of Private Transfer | 0.324 | 0.154 | 0.024 | 0.130 | 0.130 |
| | (0.006) | (0.003) | (0.008) | (0.009)*** | (0.009)*** |
| % of Govern Transfer[d] | 0.004 | 0.009 | 0.000 | 0.009 | 0.009 |
| | (0.007) | 0.000 | 0.000 | (0.001)*** | (0.001)*** |
| **Employment Indicators (IND)** | | | | | |
| Employment rate 16-64 | 0.656 | 0.545 | 0.526 | 0.019 | 0.009 |
| | (0.003) | (0.004) | (0.014) | (0.014) | (0.014) |
| Employment rate Males 16-64 | 0.370 | 0.349 | 0.374 | −0.025 | −0.011 |
| | (0.003) | (0.003) | (0.010) | (0.011)** | (0.013) |
| Employment rate Females 16-64 | 0.286 | 0.196 | 0.152 | 0.044 | 0.020 |
| | (0.003) | (0.003) | (0.013) | (0.013)*** | (0.014) |
| Wage employment rate 16-64 | 0.459 | 0.346 | 0.216 | 0.130 | 0.119 |
| | (0.003) | (0.004) | (0.014) | (0.015)*** | (0.014)*** |
| Wage employment rate Males 16-64 | 0.278 | 0.243 | 0.187 | 0.056 | 0.058 |
| | (0.003) | (0.003) | (0.012) | (0.012)*** | (0.013)*** |
| Wage employment rate Females 16-64 | 0.181 | 0.103 | 0.029 | 0.074 | 0.061 |
| | (0.002) | (0.002) | (0.006) | (0.006)*** | (0.007)*** |
| Self employment rate 16-64 | 0.197 | 0.199 | 0.308 | −0.110 | −0.109 |
| | (0.002) | (0.003) | (0.014) | (0.014)*** | (0.014)*** |
| Self employment rate Males 16-64 | 0.092 | 0.106 | 0.185 | −0.079 | −0.068 |

*... Table 5a continued*

| Variable | (1) Mean of Observations Non Poor (EHPM 2008) | (2) Mean of Observations National Poor (EHPM 2008)[b] | (3) Mean of Observations Settlements (UTPMP 2007-08) | Dif (2)-(3) | Dif (2)-(3)[c] |
|---|---|---|---|---|---|
| | (0.001) | (0.003) | (0.015) | (0.016)*** | (0.016)*** |
| Self employment rate Females 16-64 | 0.105 | 0.093 | 0.123 | −0.030 | −0.041 |
| | (0.002) | (0.002) | (0.008) | (0.009)*** | (0.009)*** |
| Average Wage Males 16-64 (Main Job) (USD) | 310.962 | 142.058 | 145.829 | −3.771 | −13.048 |
| | (6.307) | (1.627) | (5.853) | (6.352) | (7.729)* |
| Average Wage Females 16-64 (Main Job) (USD) | 258.734 | 113.807 | 135.256 | −21.449 | −31.193 |
| | (5.346) | (1.583) | (4.628) | (4.842)*** | (5.392)*** |
| **Demographics** | | | | | |
| HH Size | 3.779 | 4.660 | 4.860 | −0.200 | −0.085 |
| | (0.021) | (0.032) | (0.124) | (0.125) | (0.116) |
| Female Head (%) | 0.353 | 0.298 | 0.219 | 0.079 | 0.052 |
| | (0.004) | (0.006) | (0.015) | (0.017)*** | (0.020)** |
| Head of HH's Age | 48.229 | 46.376 | 43.438 | 2.938 | 2.811 |
| | (0.204) | (0.221) | (1.048) | (1.059)*** | (1.151)** |
| Head of HH's years of schooling | 6.372 | 4.013 | 4.392 | −0.378 | −0.692 |
| | (0.096) | (0.058) | (0.176) | (0.193)* | (0.164)*** |
| % children 5-12 enrolled in school | 0.922 | 0.834 | 0.929 | −0.094 | −0.103 |
| | (0.003) | (0.005) | (0.010) | (0.011)*** | (0.012)*** |
| % children 13-18 enrolled in school | 0.724 | 0.652 | 0.540 | 0.112 | 0.076 |
| | (0.007) | (0.009) | (0.028) | (0.030)*** | (0.029)*** |
| **Housing and Assets** | | | | | |
| Rooms Per Capita | 0.909 | 0.512 | 0.394 | 0.118 | 0.085 |
| | (0.009) | (0.006) | (0.017) | (0.018)*** | (0.024)*** |
| % Dirty Floors | 0.163 | 0.390 | 0.931 | −0.541 | −0.482 |
| | (0.005) | (0.010) | (0.017) | (0.021)*** | (0.032)*** |
| % Weak Walls | 0.249 | 0.436 | 0.919 | −0.483 | −0.424 |
| | (0.007) | (0.009) | (0.037) | (0.037)*** | (0.050)*** |
| % Weak Roofs | 0.297 | 0.452 | 0.917 | −0.465 | −0.466 |
| | (0.007) | (0.010) | (0.021) | (0.024)*** | (0.024)*** |

*... Table 5a continued*

| Variable | (1) Mean of Observations Non Poor (EHPM 2008) | (2) Mean of Observations National Poor (EHPM 2008)[b] | (3) Mean of Observations Settlements (UTPMP 2007-08) | Dif (2)-(3) | Dif (2)-(3)[c] |
|---|---|---|---|---|---|
| % Water Connection | 0.700 | 0.544 | 0.249 | 0.295 | 0.227 |
| | (0.009) | (0.010) | (0.053) | (0.054)*** | (0.062)*** |
| % Access to toilet | 0.967 | 0.922 | 0.680 | 0.241 | 0.207 |
| | (0.002) | (0.005) | (0.052) | (0.051)*** | (0.043)*** |
| % Access to private toilet | 0.844 | 0.765 | 0.550 | 0.215 | 0.199 |
| | (0.005) | (0.007) | (0.057) | (0.057)*** | (0.057)*** |
| % Connected to sewage | 0.686 | 0.640 | 0.007 | 0.633 | 0.491 |
| | (0.015) | (0.019) | (0.003) | (0.019)*** | (0.059)*** |
| % Electricity | 0.928 | 0.810 | 0.416 | 0.394 | 0.346 |
| | (0.003) | (0.009) | (0.069) | (0.071)*** | (0.081)*** |
| % Cook with wood | 0.183 | 0.486 | 0.800 | −0.314 | −0.212 |
| | (0.006) | (0.012) | (0.046) | (0.050)*** | (0.065)*** |
| % Refrigerators | 0.658 | 0.328 | 0.094 | 0.234 | 0.181 |
| | (0.007) | (0.008) | (0.028) | (0.031)*** | (0.041)*** |
| % TV | 0.864 | 0.678 | 0.393 | 0.286 | 0.204 |
| | (0.004) | (0.009) | (0.048) | (0.050)*** | (0.066)*** |

a Table computed at household and individual level in El Salvador using Encuesta de Hogares de Propositos Multiples 2008 and UTPMP Impact Evaluation Data 2007-08 Sources. Standard errors clustered at Primary Sample Unit level shown in parentheses. The EHPM 2008 Data contain clusters (PSU:"segmento") and UTPMP 33 clusters (PSU:"caserio").

b National Poor means households who live with less than USD 89.4 per capita per month in urban zones and less than USD 58.2 in rural zones in 2008, equivalent to two CBAs which represents the National Poverty Line and basic needs in El Salvador in 2008.

c Urban and Rural zones in El Salvador face different prices, then the regression have a dummy by cluster (settlement - UTPMP slum dwellers; comuna - EHPM poors) and a dummy by zone. Reported Results: estimated coefficient, clustered standard error at block level in brackets (23 clusters for UTPMP Slums and 500 clusters for EHPM Poors).

d Total Income includes Retirement Pension Transfers, but they are not included in Public Transfers income.

*Significantly at 10% level. **Significantly at 5% level. ***Significantly at 1% level

Table 5b: Differences of Means between groups in Uruguay (Montevideo and Canelones Departments)[a]

| Variable | (1) Mean of Observations Non Poor out of Slums (ECH 2008) | (2) Mean of Obervations Poor Out of Slums (ECH 2008)[b] | (3) Mean of Observations Settlements (ECH 2008) | Dif (2)-(3) |
|---|---|---|---|---|
| **Income Indicators (HH)** | | | | |
| Monthly Income Per Capita (USD) | 778.646 | 174.081 | 273.628 | −99.547 |
| | (58.485) | (0.849) | (7.513) | (7.243)*** |
| % of Wage Work | 0.331 | 0.258 | 0.319 | −0.061 |
| | (0.002) | (0.007) | (0.007) | (0.009)*** |
| % of Self Employment | 0.309 | 0.218 | 0.222 | −0.004 |
| | (0.008) | (0.010) | (0.005) | (0.009) |
| % of Private Transfer | 0.043 | 0.052 | 0.044 | 0.008 |
| | (0.002) | (0.001) | (0.002) | (0.003)*** |
| % of Govern Transfer[c] | 0.177 | 0.436 | 0.366 | 0.070 |
| | (0.007) | (0.002) | (0.006) | (0.006)*** |
| **Employment Indicators (IND)** | | | | |
| Employment rate 16-64 | 0.741 | 0.584 | 0.647 | −0.063 |
| | (0.002) | (0.004) | (0.007) | (0.007)*** |
| Employment rate Males 16-64 | 0.387 | 0.337 | 0.388 | −0.051 |
| | (0.006) | (0.009) | (0.006) | (0.010)*** |
| Employment rate Females 16-64 | 0.354 | 0.247 | 0.260 | −0.012 |
| | (0.008) | (0.011) | (0.006) | (0.011) |
| Wage employment rate 16-64 | 0.561 | 0.404 | 0.467 | −0.063 |
| | (0.011) | (0.005) | (0.008) | (0.009)*** |
| Wage employment rate Males 16-64 | 0.278 | 0.225 | 0.271 | −0.046 |
| | (0.002) | (0.008) | (0.007) | (0.009)*** |
| Wage employment rate Females 16-64 | 0.283 | 0.178 | 0.196 | −0.017 |
| | (0.011) | (0.010) | (0.006) | (0.012) |
| Self employment rate 16-64 | 0.180 | 0.181 | 0.180 | 0.000 |
| | (0.010) | (0.003) | (0.007) | (0.008) |
| Self employment rate Males 16-64 | 0.109 | 0.112 | 0.116 | −0.005 |
| | (0.007) | (0.003) | (0.004) | (0.005) |

*... Table 5b continued*

| Variable | (1) Mean of Observations Non Poor out of Slums (ECH 2008) | (2) Mean of Obervations Poor Out of Slums (ECH 2008)[b] | (3) Mean of Observations Settlements (ECH 2008) | Dif (2)-(3) |
|---|---|---|---|---|
| Self employment rate Females 16-64 | 0.071 | 0.069 | 0.064 | 0.005 |
| | (0.003) | (0.002) | (0.004) | (0.005) |
| Average Wage Males 16-64 (Main Job) (USD) | 778.071 | 230.312 | 304.915 | −74.603 |
| | (44.575) | (3.286) | (8.804) | (9.701)*** |
| Average Wage Females 16-64 (Main Job) (USD) | 496.821 | 126.154 | 176.903 | −50.749 |
| | (25.662) | (3.558) | (6.229) | (5.893)*** |
| **Demographics** | | | | |
| HH Size | 2.549 | 4.274 | 3.691 | 0.584 |
| | (0.028) | (0.091) | (0.053) | (0.118)*** |
| Female Head (%) | 0.398 | 0.378 | 0.372 | 0.005 |
| | (0.023) | (0.038) | (0.013) | (0.039) |
| Head of HH's Age | 55.496 | 45.311 | 45.423 | −0.112 |
| | (0.151) | (0.213) | (0.352) | (0.395) |
| Head of HH's years of schooling | 9.476 | 6.351 | 6.169 | 0.182 |
| | (0.550) | (0.190) | (0.099) | (0.140) |
| % children 5-12 enrolled in school | 0.988 | 0.980 | 0.978 | 0.002 |
| | (0.001) | (0.002) | (0.003) | (0.004) |
| % children 13-18 enrolled in school | 0.875 | 0.707 | 0.661 | 0.046 |
| | (0.011) | (0.011) | (0.019) | (0.024)* |
| **Housing and Assets** | | | | |
| Rooms Per Capita | 1.737 | 0.836 | 0.977 | −0.141 |
| | (0.017) | (0.024) | (0.020) | (0.039)*** |
| % Dirty Floors | 0.036 | 0.242 | 0.404 | −0.162 |
| | (0.011) | (0.010) | (0.017) | (0.016)*** |
| % Weak Walls | 0.004 | 0.025 | 0.087 | −0.063 |
| | (0.000) | (0.002) | (0.009) | (0.008)*** |
| % Weak Roofs | 0.031 | 0.235 | 0.448 | −0.212 |
| | (0.008) | (0.008) | (0.019) | (0.021)*** |
| % Water Connection | 0.948 | 0.864 | 0.989 | −0.125 |
| | (0.036) | (0.061) | (0.004) | (0.057)** |
| % Access to toilet | 0.996 | 0.964 | 0.937 | 0.027 |

*... Table 5b continued*

| Variable | (1) Mean of Observations Non Poor out of Slums (ECH 2008) | (2) Mean of Obervations Poor Out of Slums (ECH 2008)[b] | (3) Mean of Observations Settlements (ECH 2008) | Dif (2)-(3) |
|---|---|---|---|---|
| | (0.001) | (0.005) | (0.007) | (0.009)*** |
| % Access to private toilet | 0.976 | 0.922 | 0.895 | 0.027 |
| | (0.001) | (0.006) | (0.009) | (0.012)*** |
| % Connected to sewage | 0.703 | 0.543 | 0.604 | −0.061 |
| | (0.010) | (0.033) | (0.023) | (0.025)** |
| % Electricity | 0.998 | 0.988 | 0.996 | −0.008 |
| | (0.000) | (0.003) | (0.001) | (0.003)** |
| % Cook with wood | 0.013 | 0.054 | 0.016 | 0.038 |
| | (0.008) | (0.023) | (0.004) | (0.020)* |
| % Refrigerators | 0.985 | 0.886 | 0.860 | 0.027 |
| | (0.002) | (0.006) | (0.011) | (0.011)** |
| % TV | 0.984 | 0.939 | 0.919 | 0.020 |
| | (0.002) | (0.007) | (0.008) | (0.009)** |

a Table computed at household and individual level in Montevideo and Canelones Departments in Uruguay using Encuesta Continua de Hogares (ECH). Standard errors clustered at Primary Sample Unit level shown in parentheses. The ECH Data contain 232 clusters (PSU:"segmento") and households who live in settlements are contained in 147 clusters (PSU:"segmento")

b National Poor means households who live below the National Poverty Line in urban zones in Uruguay. This line is calculated monthly and in 2008 varied between 213 and 234 dollars per month depending on which month was the household measured. The poverty line represents a CBA of "food needs" plus a CBA of "non-food needs", both calculated in base of needs of 2006 in Uruguay

c Total Income includes Retirement Pension Transfers, but they are not included in Public Transfers income.

*Significantly at 10% level. **Significantly at 5% level. ***Significantly at 1% level

Table 6. Regressions of Housing Measures on Program Dummy.[a]

| | El Salvador | | | Uruguay | | |
|---|---|---|---|---|---|---|
| Dependent Variable | Baseline Mean (Std. Dev.) | Model 1 | Model 2 | Baseline Mean (Std. Dev.) | Model 1 | Model 2 |
| Share of Rooms with Dirty Floors | | -0.761 | -0.76 | | -0.541 | -0.536 |
| | | [0.024]*** | [0.024]*** | | [0.028]*** | [0.028]*** |
| | | [0.000] | [0.000] | | [0.000] | [0.000] |
| | 0.852 (0.241) | -89.254 | -89.17 | 0.360 (0.437) | -150.547 | -149.126 |
| Share of Rooms with Low Quality Walls | | -0.815 | -0.814 | | -0.405 | -0.405 |
| | | [0.023]*** | [0.023]*** | | [0.029]*** | [0.029]*** |
| | | [0.000] | [0.000] | | [0.000] | [0.000] |
| | 0.898 (0.235) | -90.77 | -90.704 | 0.676 (0.442) | -59.901 | -59.937 |
| Share of Rooms with Low Quality Roofs | | -0.911 | -0.91 | | -0.827 | -0.823 |
| | | [0.017]*** | [0.017]*** | | [0.021]*** | [0.021]*** |
| | | [0.000] | [0.000] | | [0.000] | [0.000] |
| | 0.999 (0.018) | -91.22 | -91.125 | 0.993 (0.069) | -83.277 | -82.9 |
| Share of Rooms with Window | | 0.233 | 0.232 | | 0.095 | 0.098 |
| | | [0.024]*** | [0.024]*** | | [0.026]*** | [0.026]*** |
| | | [0.000] | [0.000] | | [0.000] | [0.000] |
| | 0.163 (0.265) | 143.413 | 142.891 | 0.574 (0.386) | 16.565 | 17.121 |
| Water Connection (=1) | | -0.062 | -0.064 | | 0.005 | -0.002 |
| | | [0.034]* | [0.034]* | | [0.022] | [0.022] |
| | | [0.072] | [0.063] | | [0.838] | [0.937] |
| | 0.213 (0.410) | -29.071 | -29.831 | 0.920 (0.271) | 0.506 | -0.194 |
| Sink in Room Where Food is Prepared (=1) | | -0.008 | -0.008 | | 0.019 | 0.009 |
| | | [0.010] | [0.010] | | [0.038] | [0.038] |
| | | [0.418] | [0.423] | | [0.630] | [0.810] |
| | 0.012 (0.109) | -66.886 | -66.43 | 0.264 (0.44) | 7.065 | 3.539 |
| Room Where Food is Prepared Is Also Used as Bedroom (=1) | | -0.089 | -0.09 | | -0.03 | -0.031 |
| | | [0.035]** | [0.035]** | | [0.032] | [0.032] |
| | | [0.013] | [0.011] | | [0.347] | [0.329] |
| | 0.318 (0.466) | -27.867 | -28.188 | 0.429 (0.495) | -7.079 | -7.329 |
| Electricity Connection (=1) | | -0.046 | -0.049 | | 0.019 | 0.016 |
| | | [0.042] | [0.042] | | [0.016] | [0.016] |
| | | [0.279] | [0.244] | | [0.246] | [0.329] |
| | 0.401 (0.490) | -11.567 | -12.232 | 0.962 (0.192) | 1.956 | 1.671 |

*... Table 6 continued*

| | | | | | | |
|---|---|---|---|---|---|---|
| Use Gas Stove or Kerosene | | 0.016 | 0.014 | | -0.046 | -0.052 |
| to Cook (=1) | | [0.032] | [0.032] | | [0.039] | [0.040] |
| | | [0.626] | [0.662] | | [0.248] | [0.201] |
| | 0.172 (0.377) | 9.327 | 8.220 | 0.452 (0.498) | -10.227 | -11.433 |
| Own Toilet (=1) | | -0.069 | -0.07 | | 0 | -0.007 |
| | | [0.042] | [0.041]* | | [0.035] | [0.036] |
| | | [0.103] | [0.096] | | [0.996] | [0.844] |
| | 0.494 (0.500) | -14.023 | -14.124 | 0.644 (0.479) | -0.025 | -1.102 |

a On material of rooms, were only included those households that reported information for all rooms. Households "treated" were considered as with "good quality" of material. All the reggresions have a dummy by caserio. Model 1: No Controls; Model 2: Control for Head of HH's Years of Schooling, Head of HH's Gender, Head of HH's Age, Assets Value Per Capita (USD), Monthly Income Per Capita (USD). A dummy equal to 1 in case the control variable report a missing value was added to the model. Outcomes at individual level in Model 2 control for the same variables but at individual level, except AssetsPC and IncomePC both at HH level. Reported Results: estimated coefficient, robust standard error, p-value and 100*coefficient/control baseline in that order. Data Source: 2007-2010 UTPMP Panel Data

*Significantly at 10% level. **Significantly at 5% level. ***Significantly at 1% level

Table 7. Regressions of Satisfaction with House on Program Dummy.[a]

| | El Salvador | | | Uruguay | | |
|---|---|---|---|---|---|---|
| Dependent Variable | Baseline Mean (Std. Dev.) | Model 1 | Model 2 | Baseline Mean (Std. Dev.) | Model 1 | Model 2 |
| Satisfaction with Floor Quality | | 0.387 | 0.387 | | 0.083 | 0.086 |
| | | [0.039]*** | [0.040]*** | | [0.039]** | [0.039]** |
| | | [0.000] | [0.000] | | [0.036] | [0.030] |
| | 0.130 (0.336) | 298.388 | 298.313 | 0.173 (0.378) | 47.649 | 49.41 |
| Satisfaction with Wall Quality | | 0.477 | 0.478 | | 0.073 | 0.077 |
| | | [0.039]*** | [0.039]*** | | [0.038]* | [0.038]** |
| | | [0.000] | [0.000] | | [0.057] | [0.047] |
| | 0.092 (0.288) | 520.582 | 521.274 | 0.124 (0.329) | 59.214 | 62.114 |
| Satisfaction with Roof Quality | | 0.476 | 0.476 | | 0.11 | 0.104 |
| | | [0.038]*** | [0.039]*** | | [0.039]*** | [0.039]*** |
| | | [0.000] | [0.000] | | [0.005] | [0.008] |
| | 0.105 (0.307) | 451.854 | 451.647 | 0.165 (0.371) | 66.746 | 63.29 |
| Satisfaction with House Protection against Water when it rains | | 0.426 | 0.424 | | 0.134 | 0.135 |
| | | [0.038]*** | [0.038]*** | | [0.039]*** | [0.039]*** |
| | | [0.000] | [0.000] | | [0.001] | [0.001] |
| | 0.098 (0.296) | 436.222 | 435.048 | 0.168 (0.374) | 79.98 | 80.163 |
| Satisfaction with Quality of Life | | 0.357 | 0.357 | | 0.101 | 0.101 |
| | | [0.076]*** | [0.077]*** | | [0.040]** | [0.040]** |
| | | [0.000] | [0.000] | | [0.013] | [0.013] |
| | 0.234 (0.423) | 152.397 | 152.551 | 0.221 (0.415) | 45.419 | 45.776 |

a All the reggresions have a dummy by caserio. Model 1: No Controls; Model 2: Control for Head of HH's Years of Schooling, Head of HH's Gender, Head of HH's Age, Assets Value Per Capita (USD), Monthly Income Per Capita (USD). A dummy equal to 1 in case the control variable report a missing value was added to the model. Outcomes at individual level in Model 2 control for the same variables but at individual level, except AssetsPC and IncomePC both at HH level. Reported Results: estimated coefficient, robust standard error, p-value and 100*coefficient/control baseline in that order. Data Source: 2007-2010 UTPMP Panel Data

*Significantly at 10% level. **Significantly at 5% level. ***Significantly at 1% level

Table 8. Regressions of Perception of Security on Program Dummy.[a]

| | El Salvador | | | Uruguay | | |
|---|---|---|---|---|---|---|
| Dependent Variable | Baseline Mean (Std. Dev.) | Model 1 | Model 2 | Baseline Mean (Std. Dev.) | Model 1 | Model 2 |
| Safe inside the house during the last 12 months (=1) | | 0.175 [0.040]*** [0.000] | 0.176 [0.040]*** [0.000] | | 0.000 [0.038] [0.998] | -0.001 [0.038] [0.983] |
| | 0.544 (0.498) | 32.06 | 32.37 | 0.615 (0.486) | 0.02 | -0.13 |
| Safe leaving the house alone during the last12 months (=1) | | 0.155 [0.043]*** [0.000] | 0.157 [0.043]*** [0.000] | | -0.08 [0.037]** [0.046] | -0.08 [0.038]** [0.036] |
| | 0.438 (0.496) | 35.35 | 35.8 | 0.308 (0.461) | -24.7 | -26.1 |
| Safe leaving the kids alone in the house during the last 12 months (=1) | | 0.141 [0.043]*** [0.001] | 0.141 [0.043]*** [0.001] | | -0.01 [0.029] [0.838] | -0.01 [0.029] [0.682] |
| | 0.157 (0.364) | 89.93 | 89.98 | 0.143 (0.35) | -4.23 | -8.59 |
| The house had been robbed in the last 12 months (=1) | | 0.023 [0.019] [0.229] | 0.022 [0.019] [0.246] | | 0.02 [0.035] [0.507] | 0.03 [0.035] [0.421] |
| | 0.063 (0.242) | 36.82 | 35.41 | 0.272 (0.445) | 8.64 | 10.5 |

a All the reggresions have a dummy by caserio. Model 1: No Controls; Model 2: Control for Head of HH's Years of Schooling, Head of HH's Gender, Head of HH's Age, Assets Value Per Capita (USD), Monthly Income Per Capita (USD). A dummy equal to 1 in case the control variable report a missing value was added to the model. Outcomes at individual level in Model 2 control for the same variables but at individual level, except AssetsPC and IncomePC both at HH level. Reported Results: estimated coefficient, robust standard error, p-value and 100*coefficient/control baseline in that order. Data Source: 2007 - 2010 UTPMP Panel Data

*Significantly at 10% level. **Significantly at 5% level. ***Significantly at 1% level

Table 9. Regressions of Assets on Program Dummy.[a]

| | El Salvador | | | Uruguay | | |
|---|---|---|---|---|---|---|
| Dependent Variable | Baseline Mean (Std. Dev.) | Model 1 | Model 2 | Baseline Mean (Std. Dev.) | Model 1 | Model 2 |
| T.V (=1) | | -0.018 | -0.021 | | 0.007 | 0.011 |
| | | [0.045] | [0.044] | | [0.024] | [0.024] |
| | | [0.687] | [0.636] | | [0.786] | [0.642] |
| | 0.42 (0.494) | -4.354 | -4.992 | 0.82 (0.385) | 0.824 | 1.386 |
| Fan (=1) | | 0.013 | 0.012 | | -0.01 | -0.006 |
| | | [0.018] | [0.018] | | [0.039] | [0.039] |
| | | [0.490] | [0.513] | | [0.797] | [0.888] |
| | 0.05 (0.209) | 27.96 | 26.56 | 0.28 (0.447) | -3.715 | -2.032 |
| Kitchen or Gas | | -0.008 | -0.01 | | 0.004 | 0.003 |
| Stove (=1) | | [0.041] | [0.041] | | [0.035] | [0.035] |
| | | [0.847] | [0.811] | | [0.911] | [0.931] |
| | 0.46 (0.498) | -1.763 | -2.147 | 0.63 (0.482) | 0.619 | 0.482 |
| Refrigerator | | -0.029 | -0.029 | | -0.032 | -0.033 |
| (=1) | | [0.029] | [0.029] | | [0.037] | [0.037] |
| | | [0.332] | [0.333] | | [0.406] | [0.387] |
| | 0.07 (0.26) | -39.04 | -39.15 | 0.5 (0.5) | -6.354 | -6.598 |

a All the reggresions have a dummy by caserio. Model 1: No Controls; Model 2: Control for Head of HH's Years of Schooling, Head of HH's Gender, Head of HH's Age, Assets Value Per Capita (USD), Monthly Income Per Capita (USD). A dummy equal to 1 in case the control variable report a missing value was added to the model. Outcomes at individual level in Model 2 control for the same variables but at individual level, except AssetsPC and IncomePC both at HH level. Reported Results: estimated coefficient, robust standard error, p-value and 100*coefficient/control baseline in that order. Data Source: 2007 - 2010 UTPMP Panel Data

*Significantly at 10% level. **Significantly at 5% level. ***Significantly at 1% level

Table 10. Regressions of Labor Variables on Program Dummy.[a]

| | El Salvador | | | Uruguay | | |
|---|---|---|---|---|---|---|
| Dependent Variable | Baseline Mean (Std. Dev.) | Model 1 | Model 2 | Baseline Mean (Std. Dev.) | Model 1 | Model 2 |
| HH Size | | -0.031 | -0.021 | | 0.223 | 0.195 |
| | | [0.273] | [0.268] | | [0.225] | [0.224] |
| | | [0.909] | [0.939] | | [0.324] | [0.384] |
| | 5.047 (2.477) | -0.62 | -0.408 | 4.357 (2.432) | 5.108 | 4.477 |
| Monthly Income Per Capita (USD) | | 0.939 | 1.002 | | -17.654 | -15.768 |
| | | [2.794] | [2.836] | | [16.576] | [16.724] |
| | | [0.737] | [0.724] | | [0.287] | [0.346] |
| | 29.559 (25.586) | 3.178 | 3.391 | 83.705 (136.547) | -21.09 | -18.838 |
| Hours worked last week by Head of HH | | 1.887 | 1.035 | | 1.179 | 1.989 |
| | | [2.083] | [2.097] | | [1.944] | [1.886] |
| | | [0.366] | [0.622] | | [0.545] | [0.292] |
| | 41.297 (19.359) | 4.569 | 2.506 | 39.421 (20.58) | 2.991 | 5.046 |
| Hours worked last week by Spouse | | 12.531 | 11.731 | | 2.763 | 2.726 |
| | | [9.635] | [12.785] | | [4.645] | [4.490] |
| | | [0.204] | [0.368] | | [0.554] | [0.545] |
| | 28.049 (22.130) | 44.677 | 41.822 | 39.012 (18.89) | 7.082 | 6.989 |

a On monetary variables, observations over p99 were not considered. On hours worked, cases that reported more than 84 hours were not considered. All the reggresions have a dummy by caserio. Model 1: No Controls; Model 2: Control for Head of HH's Years of Schooling, Head of HH's Gender, Head of HH's Age, Assets Value Per Capita (USD), Monthly Income Per Capita (USD). A dummy equal to 1 in case the control variable report a missing value was added to the model. Outcomes at individual level in Model 2 control for the same variables but at individual level, except AssetsPC and IncomePC both at HH level. Reported Results: estimated coefficient, robust standard error, p-value and 100*coefficient/control baseline in that order. Data Source: 2007 - 2010 UTPMP Panel Data

*Significantly at 10% level. **Significantly at 5% level. ***Significantly at 1% level

Table 11a. Regressions of Health Variables of Children on Program Dummy.[a]

| Dependent Variable | El Salvador | | | Uruguay | | |
|---|---|---|---|---|---|---|
| | Baseline Mean (Std. Dev.) | Model 1 | Model 2 | Baseline Mean (Std. Dev.) | Model 1 | Model 2 |
| Respiratory Disease | | -0.011 | -0.006 | | 0.013 | 0.019 |
| during last 4 weeks | | [0.049] | [0.049] | | [0.028] | [0.028] |
| (< 5 years old) (=1) | | [0.818] | [0.901] | | [0.653] | [0.497] |
| | 0.66 (0.475) | -1.743 | -0.941 | 0.35 (0.476) | 3.729 | 5.53 |
| Diarrhea during last | | -0.029 | -0.028 | | 0.001 | 0.001 |
| 4 weeks (< 5 years | | [0.031] | [0.031] | | [0.030] | [0.029] |
| old) (=1) | | [0.352] | [0.375] | | [0.982] | [0.972] |
| | 0.22 (0.412) | -13.571 | -12.782 | 0.09 (0.281) | 0.773 | 1.206 |

a All the reggresions have a dummy by caserio. Model 1: No Controls; Model 2: Model 2: Control for Age, Age Squared, Gender, Assets Value Per Capita (USD), Monthly Income Per Capita (USD). A dummy equal to 1 in case the control variable report a missing value was added to the model. Reported Results: estimated coefficient, robust standard error, p-value and 100*coefficient/control baseline in that order. Data Source: 2007 - 2010 UTPMP Panel Data
*Significantly at 10% level. **Significantly at 5% level. ***Significantly at 1% level

Table 11b. Regressions of Health Variables of Children on Program Dummy (Panel).[a]

| Dependent Variable | El Salvador | | | Uruguay | | |
|---|---|---|---|---|---|---|
| | Baseline Mean (Std. Dev.) | Model 1 | Model 2 | Baseline Mean (Std. Dev.) | Model 1 | Model 2 |
| Respiratory Disease | | -0.092 | -0.094 | | 0.05 | 0.075 |
| during last 4 weeks | | [0.064] | [0.069] | | [0.049] | [0.049] |
| (< 5 years old) (=1) | | [0.158] | [0.179] | | [0.310] | [0.132] |
| | 0.656 (0.475) | -14.004 | -14.336 | 0.346 (0.476) | 14.394 | 21.619 |
| Diarrhea during last | | -0.114 | -0.064 | | 0.028 | 0.039 |
| 4 weeks (< 5 years | | [0.046]** | [0.047] | | [0.034] | [0.034] |
| old) (=1) | | [0.014] | [0.180] | | [0.418] | [0.252] |
| | 0.216 (0.412) | -52.854 | -29.588 | 0.087 (0.281) | 31.848 | 45.385 |

a All the reggresions have a fixed effect by house ID or Individual ID. Model 1: No Controls; Model 2: Control for the date when the baseline survey took place, Age, Age Squared and Gender. A dummy equal to 1 in case the control variable report a missing value was added to the model. Reported Results: estimated coefficient, robust standard error, p-value and 100*coefficient/baseline mean in that order. Data Source: 2007 - 2010 UTPMP Panel Data
*Significantly at 10% level. **Significantly at 5% level. ***Significantly at 1% level