

# Shelter from the Storm: Upgrading Housing Infrastructure in Latin American Slums

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# Introduction

- This paper examine the impact of inexpensive but sturdy houses constructed by TECHO, an NGO that provides basic pre-fabricated houses to extremely poor populations in Latin America.
- We analyze a randomized evaluation of TECHO Program in El Salvador, Uruguay and Mexico.
- 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) and provides a basic housing structure.

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# Findings

- Our findings show that the better structures have a positive effect on overall housing conditions and subjective well-being: treated households are more satisfied with the quality of their lives.
- In two countries, El Salvador and Mexico, we also document improvements in children's health
- In El Salvador, slum dwellers' perception of their safety and security also improves.
- There are, however, no robust noticeable effects on the possession of durable goods or in terms of employment outcomes.

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# Program

- UTPMP has helped build over 102,000 houses and have worked with more than 723,000 volunteers in 19 countries throughout LAC.
- Every year more than 30,000 youth throughout Latin America volunteer to work with TECHO
- The UTPMP houses are made of wood or aluminum. A typical house is 18 m<sup>2</sup> (6\*3) in size and is built by teams of youth volunteers along with the household recipient.
- On average, the houses take one to two days to build by a team of 6-12 people.

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# Program

Figure 1: TECHO House



EL SALVADOR



MEXICO & URUGUAY



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## Program Implementation

- TECHO first selected a set of eligible settlements and then conducted a census to identify eligible households within each settlement (i.e., those poor enough to be given priority).
- Demand exceeded supply, so the eligible households were then randomly assigned to treatment and control groups.
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# Data Collection

- **Baseline surveys were conducted approximately one month before the start of each phase**
- Follow-up surveys were conducted between 15 and 27 months after construction.
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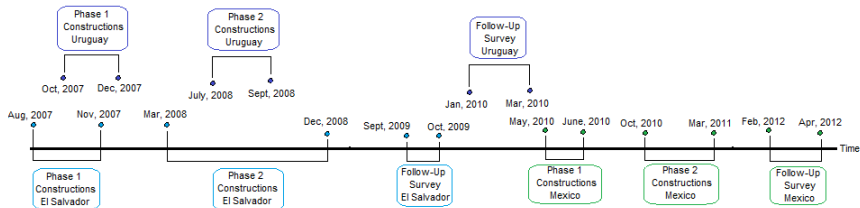


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# Timeline

Figure 2: Program Implementation and Surveys



# Sample Frame

**Table 1: General Information. Intention to Treat Groups**

Variables	El Salvador			Uruguay			Mexico			All		
	Mean Treatment	Mean Control	Mean Differences	Mean Treatment	Mean Control	Mean Differences	Mean Treatment	Mean Control	Mean Differences	Mean Treatment	Mean Control	Mean Differences
<b>General Information</b>												
Number of Households	421 60.32%	277 39.68%		478 61.36%	301 38.64%		457 51.00%	439 49.00%		1,356 57.14%	1,017 42.86%	
Number of Individuals	2,111 60.77%	1,363 39.23%		2,067 62.15%	1,259 37.85%		2,239 50.99%	2,152 49.01%		6,417 57.34%	4,774 42.66%	
Attrition Rate	0.055 (0.011)	0.069 (0.015)	-0.014 (0.018)	0.067 (0.011)	0.063 (0.014)	0.004 (0.018)	0.070 (0.011)	0.087 (0.013)	-0.017 (0.017)	0.064 (0.006)	0.075 (0.008)	-0.011 (0.010)
Number of Households - Follow Up Sample	398	258		446	282		425	401		1,269	941	
Number of Individuals - Follow Up Sample	2,217	1,407		2,342	1,397		2,273	2,111		6,832	4,915	
Non Compliance Rate	0.123 (0.016)	0.004 (0.003)	0.119 (0.016)***	0.141 (0.016)	0.007 (0.005)	0.134 (0.017)***	0.134 (0.016)	0.000 (0.000)	0.134 (0.016)***	0.133 (0.009)	0.003 (0.001)	0.130 (0.009)***
Movers Rate	0.048 (0.010)	0.058 (0.014)	-0.010 (0.017)	0.075 (0.012)	0.083 (0.015)	-0.008 (0.019)	0.048 (0.010)	0.050 (0.010)	-0.002 (0.014)	0.058 (0.006)	0.062 (0.007)	-0.004 (0.009)

The term "movers" refers to households whose members moved out of the original slum between the times that the baseline and the follow-up surveys were conducted. Some of these people were located and responded to the follow-up survey; those who were not located have been classified as attriters.

\*Significant at 10% level. \*\*Significant at 5% level. \*\*\*Significant at 1% level

# Experimental Group Balance

**Table 2: Differences in Pre-Treatment Means. Intention to Treat Groups**

Variables	El Salvador			Uruguay			Mexico			All		
	Mean Treatment	Mean Control	Mean Differences	Mean Treatment	Mean Control	Mean Differences	Mean Treatment	Mean Control	Mean Differences	Mean Treatment	Mean Control	Mean Differences
<b>Income and Assets</b>												
<i>Assets Value Per Capita (USD)</i>	45.397 (5.539)	53.578 (8.126)	6.059 (11.900)	45.369 (3.558)	47.694 (4.677)	-1.599 (6.452)	48.772 (4.527)	50.265 (4.111)	1.048 (6.104)	45.177 (2.365)	48.745 (2.764)	-0.311 (3.911)
<i>Monthly Income Per Capita (USD)</i>	29.940 (1.413)	30.463 (1.893)	-1.713 (2.855)	64.899 (4.179)	77.871 (6.834)	-15.626 (9.275)*	56.281 (2.965)	67.969 (3.664)	-6.209 (4.744)	51.210 (1.826)	59.118 (2.425)	-6.453 (3.521)*
<i>T.V.</i>	0.453 (0.025)	0.412 (0.030)	-0.028 (0.044)	0.844 (0.016)	0.825 (0.022)	0.019 (0.029)	0.604 (0.022)	0.677 (0.022)	-0.039 (0.031)	0.643 (0.013)	0.651 (0.015)	-0.017 (0.019)
<i>Fan</i>	0.043 (0.010)	0.050 (0.013)	0.004 (0.022)	0.291 (0.021)	0.264 (0.025)	0.037 (0.034)	0.033 (0.008)	0.023 (0.007)	0.005 (0.010)	0.127 (0.009)	0.101 (0.009)	0.016 (0.013)
<i>Kitchen or Gas Stove</i>	0.455 (0.025)	0.527 (0.030)	-0.030 (0.044)	0.651 (0.022)	0.664 (0.027)	0.022 (0.036)	0.418 (0.023)	0.474 (0.023)	-0.027 (0.029)	0.511 (0.013)	0.544 (0.015)	-0.012 (0.020)
<i>Refrigerator</i>	0.059 (0.011)	0.099 (0.018)	-0.018 (0.026)	0.495 (0.023)	0.510 (0.029)	0.011 (0.039)	0.204 (0.018)	0.187 (0.018)	0.014 (0.024)	0.263 (0.012)	0.259 (0.013)	0.006 (0.018)
<i>Bicycle</i>	0.335 (0.023)	0.359 (0.029)	-0.014 (0.041)	0.453 (0.023)	0.462 (0.029)	-0.011 (0.039)	0.269 (0.020)	0.269 (0.021)	0.010 (0.029)	0.354 (0.013)	0.349 (0.015)	-0.003 (0.020)

All the regressions control for settlement fixed effects. Responses regarding construction materials used in rooms were included only for those households that reported information for all rooms. In the case of monetary variables, observations over the 99th percentile were excluded. Robust standard errors are reported in parenthesis.

\*Significant at 10% level. \*\*Significant at 5% level. \*\*\*Significant at 1% level

# Experimental Group Balance (cont.)

**Table 3: Differences in Pre-Treatment Means. Intention to Treat Groups**

Variables	El Salvador			Uruguay			Mexico			All		
	Mean Treatment	Mean Control	Mean Differences	Mean Treatment	Mean Control	Mean Differences	Mean Treatment	Mean Control	Mean Differences	Mean Treatment	Mean Control	Mean Differences
<b>Characteristics of the House</b>												
<i>Number of Rooms</i>	2.488 (0.056)	2.354 (0.069)	-0.146 (0.095)	2.912 (0.068)	2.837 (0.087)	0.105 (0.117)	2.803 (0.061)	2.825 (0.059)	-0.023 (0.085)	2.743 (0.036)	2.700 (0.041)	-0.010 (0.058)
<i>Share of Rooms with Good Quality Floors</i>	0.145 (0.011)	0.142 (0.014)	-0.038 (0.021)*	0.371 (0.020)	0.374 (0.025)	-0.020 (0.033)	0.661 (0.017)	0.636 (0.018)	0.012 (0.024)	0.398 (0.011)	0.423 (0.013)	-0.011 (0.016)
<i>Share of Rooms with Good Quality Walls</i>	0.110 (0.010)	0.107 (0.012)	-0.021 (0.018)	0.248 (0.021)	0.217 (0.026)	0.022 (0.035)	0.259 (0.017)	0.237 (0.016)	0.022 (0.021)	0.204 (0.009)	0.193 (0.010)	0.010 (0.014)
<i>Share of Rooms with Good Quality Roofs</i>	0.101 (0.012)	0.149 (0.019)	-0.016 (0.023)	0.348 (0.019)	0.353 (0.025)	-0.023 (0.033)	0.502 (0.019)	0.468 (0.019)	-0.013 (0.027)	0.322 (0.011)	0.347 (0.013)	-0.017 (0.016)
<i>Share of Rooms with Window</i>	0.154 (0.012)	0.184 (0.018)	0.002 (0.024)	0.561 (0.017)	0.586 (0.022)	-0.026 (0.029)	0.294 (0.016)	0.253 (0.015)	0.015 (0.022)	0.345 (0.010)	0.333 (0.011)	-0.002 (0.014)
<i>Water in Terrain</i>	0.228 (0.020)	0.195 (0.023)	-0.033 (0.030)	0.916 (0.012)	0.907 (0.016)	0.016 (0.021)	0.501 (0.023)	0.519 (0.023)	0.015 (0.028)	0.563 (0.013)	0.546 (0.015)	0.004 (0.015)
<i>Electricity Connection inside the House</i>	0.394 (0.023)	0.386 (0.029)	-0.063 (0.038)	0.962 (0.008)	0.953 (0.012)	0.008 (0.016)	0.807 (0.018)	0.870 (0.016)	-0.041 (0.023)*	0.734 (0.012)	0.763 (0.013)	-0.030 (0.014)**
<i>House with Own Toilet</i>	0.506 (0.024)	0.448 (0.029)	-0.056 (0.042)	0.657 (0.021)	0.598 (0.028)	0.062 (0.036)*	0.403 (0.022)	0.392 (0.023)	-0.011 (0.031)	0.524 (0.013)	0.468 (0.015)	0.003 (0.020)

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## Experimental Group Balance (cont.)

Table 4: Differences in Pre-Treatment Means. Intention to Treat Groups

Variables	El Salvador			Uruguay			Mexico			All		
	Mean Treatment	Mean Control	Mean Differences	Mean Treatment	Mean Control	Mean Differences	Mean Treatment	Mean Control	Mean Differences	Mean Treatment	Mean Control	Mean Differences
<b>Satisfaction Measures</b>												
<i>Satisfaction with Floor Quality</i>	0.133 (0.016)	0.116 (0.019)	0.018 (0.027)	0.164 (0.016)	0.196 (0.022)	-0.020 (0.030)	0.375 (0.022)	0.377 (0.023)	0.036 (0.030)	0.225 (0.011)	0.252 (0.013)	0.013 (0.017)
<i>Satisfaction with Wall Quality</i>	0.095 (0.014)	0.083 (0.016)	0.004 (0.025)	0.117 (0.014)	0.130 (0.019)	-0.012 (0.026)	0.255 (0.020)	0.249 (0.020)	0.030 (0.029)	0.157 (0.009)	0.169 (0.011)	0.010 (0.016)
<i>Satisfaction with Roof Quality</i>	0.117 (0.015)	0.091 (0.017)	0.008 (0.026)	0.176 (0.021)	0.157 (0.016)	0.000 (0.028)	0.212 (0.019)	0.229 (0.020)	0.002 (0.028)	0.163 (0.010)	0.176 (0.011)	0.003 (0.016)
<i>Satisfaction with Protection against Rain</i>	0.103 (0.014)	0.090 (0.017)	-0.005 (0.025)	0.159 (0.016)	0.180 (0.022)	-0.006 (0.029)	0.190 (0.018)	0.176 (0.018)	0.038 (0.025)	0.152 (0.009)	0.154 (0.011)	0.013 (0.016)
<i>Satisfaction with Quality of Life</i>	0.266 (0.021)	0.181 (0.023)	0.025 (0.033)	0.219 (0.019)	0.229 (0.024)	-0.020 (0.032)	0.354 (0.022)	0.339 (0.022)	0.036 (0.032)	0.279 (0.012)	0.263 (0.013)	0.015 (0.019)

All the regressions control for settlement fixed effects. Robust standard errors are reported in parenthesis.

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# Experimental Group Balance (cont.)

**Table 5: Differences in Pre-Treatment Means. Intention to Treat Groups**

Variables	El Salvador			Uruguay			Mexico			All		
	Mean Treatment	Mean Control	Mean Differences	Mean Treatment	Mean Control	Mean Differences	Mean Treatment	Mean Control	Mean Differences	Mean Treatment	Mean Control	Mean Differences
<b>Perception of Security</b>												
<i>Safe inside the house</i>	0.527 (0.024)	0.538 (0.030)	-0.045 (0.043)	0.615 (0.022)	0.595 (0.028)	0.029 (0.037)	0.713 (0.021)	0.708 (0.021)	0.013 (0.031)	0.621 (0.013)	0.628 (0.015)	0.004 (0.020)
<i>Safe leaving the house alone</i>	0.435 (0.024)	0.419 (0.029)	-0.011 (0.043)	0.328 (0.021)	0.272 (0.025)	0.061 (0.035)*	0.615 (0.022)	0.597 (0.023)	0.031 (0.032)	0.458 (0.013)	0.452 (0.015)	0.031 (0.020)
<i>Safe leaving the kids alone in the house</i>	0.147 (0.017)	0.166 (0.022)	-0.049 (0.032)	0.144 (0.016)	0.126 (0.019)	0.011 (0.025)	0.166 (0.017)	0.191 (0.018)	-0.034 (0.026)	0.153 (0.009)	0.165 (0.011)	-0.023 (0.016)
<i>House robbed in the last 12 months</i>	0.079 (0.013)	0.036 (0.011)	0.053 (0.020)**	0.273 (0.020)	0.283 (0.026)	-0.030 (0.033)	0.059 (0.011)	0.055 (0.010)	0.008 (0.015)	0.141 (0.009)	0.117 (0.010)	0.006 (0.013)

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## Experimental Group Balance (cont.)

Table 6: Differences in Pre-Treatment Means. Intention to Treat Groups

Variables	El Salvador			Uruguay			Mexico			All		
	Mean Treatment	Mean Control	Mean Differences	Mean Treatment	Mean Control	Mean Differences	Mean Treatment	Mean Control	Mean Differences	Mean Treatment	Mean Control	Mean Differences
<b>Sociodemographic Characteristics</b>												
<i>HH Size</i>	5.014 (0.124)	4.921 (0.140)	-0.040 (0.233)	4.324 (0.113)	4.183 (0.134)	0.109 (0.189)	4.899 (0.113)	4.902 (0.117)	-0.099 (0.159)	4.732 (0.068)	4.694 (0.075)	-0.015 (0.108)
<i>Head of HH's Age</i>	45.038 (0.819)	44.227 (1.013)	0.129 (1.555)	38.723 (0.649)	37.270 (0.806)	1.827 (1.089)*	41.518 (0.747)	41.379 (0.697)	0.426 (0.999)	41.627 (0.430)	40.935 (0.479)	0.824 (0.673)
<i>Head of HH's Gender</i>	0.798 (0.019)	0.769 (0.025)	0.028 (0.036)	0.498 (0.022)	0.545 (0.028)	-0.046 (0.038)	0.788 (0.019)	0.770 (0.020)	0.018 (0.028)	0.689 (0.012)	0.703 (0.014)	-0.001 (0.019)
<i>Head of HH's Years of Schooling</i>	2.514 (0.147)	2.326 (0.170)	-0.053 (0.245)	5.828 (0.135)	5.877 (0.183)	0.121 (0.237)	4.144 (0.151)	3.850 (0.151)	0.305 (0.203)	4.237 (0.091)	4.026 (0.105)	0.157 (0.131)
<i>Hours worked last week by Head of HH</i>	41.278 (1.230)	40.963 (1.461)	1.373 (2.306)	38.610 (1.113)	40.258 (1.437)	-1.744 (1.910)	40.924 (1.150)	40.785 (1.140)	0.606 (1.623)	40.182 (0.671)	40.662 (0.764)	-0.046 (1.092)
<i>Hours worked last week by Spouse</i>	34.261 (2.872)	26.340 (3.035)	4.137 (4.392)	37.159 (1.845)	37.438 (1.775)	0.267 (2.759)	28.122 (1.864)	28.113 (1.865)	-2.283 (2.699)	33.370 (1.225)	31.377 (1.225)	-0.250 (1.786)

All the regressions control for settlement fixed effects. Robust standard errors are reported in parenthesis.

\*Significant at 10% level. \*\*Significant at 5% level. \*\*\*Significant at 1% level



## Experimental Group Balance (cont.)

**Table 7:** Differences in Pre-Treatment Means. Intention to Treat Groups

Variables	El Salvador			Uruguay			Mexico			All		
	Mean Treatment	Mean Control	Mean Differences	Mean Treatment	Mean Control	Mean Differences	Mean Treatment	Mean Control	Mean Differences	Mean Treatment	Mean Control	Mean Differences
<b>Health (&lt;5 years old)</b>												
<i>Respiratory Disease during last 4 weeks</i>	0.669 (0.029)	0.635 (0.037)	0.042 (0.056)	0.351 (0.024)	0.352 (0.031)	-0.018 (0.042)	0.376 (0.027)	0.401 (0.027)	-0.022 (0.040)	0.444 (0.016)	0.439 (0.018)	-0.007 (0.025)
<i>Diarrhea during last 4 weeks</i>	0.249 (0.027)	0.144 (0.027)	0.043 (0.042)	0.087 (0.014)	0.089 (0.018)	-0.018 (0.024)	0.131 (0.018)	0.138 (0.019)	-0.011 (0.028)	0.145 (0.011)	0.123 (0.012)	-0.002 (0.017)

All the regressions control for settlement fixed effects. Robust standard errors are reported in parenthesis.

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# Baseline Cross-Country Housing Differences

**Table 8:** Differences in Pre-Treatment Means between countries. Baseline Survey

Variables	Mean El Salvador (1)	Mean Uruguay (2)	Mean Mexico (3)	Mean Differences (1) - (2)	Mean Differences (1) - (3)	Mean Differences (2) - (3)
<b>Characteristics of the House</b>						
<i>Number of Rooms</i>	2.435 (0.087)	2.883 (0.079)	2.814 (0.065)	-0.448 (0.116)***	-0.379 (0.108)***	0.069 (0.101)
<i>Share of Rooms with Good Quality Floors</i>	0.144 (0.014)	0.372 (0.030)	0.649 (0.027)	-0.228 (0.033)***	-0.505 (0.031)***	-0.276 (0.040)***
<i>Share of Rooms with Good Quality Walls</i>	0.109 (0.013)	0.236 (0.033)	0.248 (0.031)	-0.127 (0.035)***	-0.140 (0.034)***	-0.012 (0.045)
<i>Share of Rooms with Good Quality Roofs</i>	0.120 (0.034)	0.350 (0.024)	0.485 (0.031)	-0.230 (0.041)***	-0.365 (0.046)***	-0.135 (0.039)***
<i>Share of Rooms with Window</i>	0.166 (0.017)	0.571 (0.016)	0.273 (0.025)	-0.405 (0.023)***	-0.107 (0.030)***	0.298 (0.029)***
<i>Water in Terrain</i>	0.215 (0.051)	0.913 (0.014)	0.510 (0.052)	-0.700 (0.053)***	-0.295 (0.072)***	0.403 (0.054)***
<i>Electricity Connection inside the House</i>	0.391 (0.058)	0.959 (0.006)	0.838 (0.031)	-0.568 (0.058)***	-0.447 (0.065)***	0.121 (0.031)***
<i>House with Own Bathroom</i>	0.483 (0.041)	0.634 (0.024)	0.397 (0.035)	-0.151 (0.047)***	0.085 (0.054)	0.237 (0.042)***

Responses regarding construction materials used in rooms were included only for those households that reported information for all rooms. Standard errors clustered at cluster level shown in parentheses.  
 \*Significant at 10% level. \*\*Significant at 5% level. \*\*\*Significant at 1% level

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# Econometric Model

$$Y_{ij} = \alpha + \gamma \textit{IntentiontoTreat}_{ij} + \beta X_{ij} + \mu_j + \varepsilon_{ij}$$

# Inference

- **Bonferroni Family-Wise Error Rates (FWER)**
- Summary Index by Family Group of Variables

# Inference

- Bonferroni Family-Wise Error Rates (FWER)
- Summary Index by Family Group of Variables

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# Results

**Table 9: Regressions of Housing Quality on Program Dummy**

Dependent Variable	El Salvador			Uruguay			Mexico			All		
	Follow Up Control Mean (SD)	Model 1	Model 2	Follow Up Control Mean (SD)	Model 1	Model 2	Follow Up Control Mean (SD)	Model 1	Model 2	Follow Up Control Mean (SD)	Model 1	Model 2
Number of Rooms	2.690 (1.330)	0.233 [0.117]**	0.234 [0.116]**	3.486 (1.636)	0.100 [0.132]	0.081 [0.132]	3.067 (1.285)	0.234 [0.088]***	0.220 [0.086]**	3.088 (1.440)	0.188 [0.064]***	0.181 [0.064]***
Share of Rooms with Good Quality Floors	0.165 (0.274)	0.284 [0.027]***	0.288 [0.026]***	0.317 (0.415)	0.197 [0.033]***	0.198 [0.033]***	0.706 (0.355)	0.111 [0.022]***	0.110 [0.022]***	0.442 (0.426)	0.182 [0.016]***	0.183 [0.016]***
Share of Rooms with Good Quality Walls	0.104 (0.223)	0.255 [0.026]***	0.255 [0.026]***	0.483 (0.471)	0.136 [0.035]***	0.137 [0.035]***	0.420 (0.388)	0.167 [0.024]***	0.163 [0.024]***	0.352 (0.410)	0.178 [0.017]***	0.177 [0.017]***
Share of Rooms with Good Quality Roofs	0.283 (0.385)	0.231 [0.030]***	0.235 [0.030]***	0.312 (0.414)	0.188 [0.033]***	0.189 [0.033]***	0.599 (0.374)	0.099 [0.022]***	0.096 [0.022]***	0.427 (0.416)	0.161 [0.016]***	0.161 [0.016]***
Share of Rooms with Window	0.192 (0.274)	0.233 [0.024]***	0.235 [0.024]***	0.607 (0.336)	0.111 [0.025]***	0.115 [0.025]***	0.303 (0.329)	0.183 [0.021]***	0.179 [0.021]***	0.364 (0.358)	0.171 [0.013]***	0.171 [0.013]***
Summary Index (z-score)	0.000 (0.651)	0.760 [0.634]***	0.767 [0.063]***	0.000 (0.520)	0.322 [0.040]***	0.324 [0.040]***	0.000 (0.586)	0.348 [0.036]***	0.339 [0.036]***	0.000 (0.586)	0.439 [0.026]***	0.439 [0.026]***

Responses regarding construction materials used in rooms were included only for those households that reported information for all rooms. All the regressions have a dummy by caserio. Model 1: No Controls; Model 2: Control for HH's Years of Schooling, HH's Gender, HH's Age, Assets - Value Per Capita (USD), Monthly Income Per Capita (USD), all measured during the baseline round. Following the standard procedure, when a control variable has a missing value, we impute a value equal to 0 and add a dummy variable equal to 1 for that observation, which indicates that the control variable was missed. The Housing Quality Summary Index (z-score) is defined as the average of the z-scores of all the variables in the table, with the sign of each measure oriented so that the more beneficial outcomes have higher scores. Bonferroni corrected p-value=0.02 for a significance level of 0.1. Reported results: estimated coefficient, robust standard error, p-value and 100\*coefficient/follow-up control mean, in that order.  
 \*Significant at 10% level. \*\*Significant at 5% level. \*\*\*Significant at 1% level



# Results

Table 10: Regressions of Housing Investment on Program Dummy.

Dependent Variable	El Salvador			Uruguay			Mexico			All		
	Follow Up Control Mean (SD)	Model 1	Model 2	Follow Up Control Mean (SD)	Model 1	Model 2	Follow Up Control Mean (SD)	Model 1	Model 2	Follow Up Control Mean (SD)	Model 1	Model 2
<i>Sink on Room where food is prepared</i>	0.016 (0.123)	-0.008 [0.010]	-0.006 [0.010]	0.335 (0.472)	-0.014 [0.037]	-0.009 [0.037]	0.020 (0.140)	-0.008 [0.010]	-0.010 [0.010]	0.112 (0.315)	-0.010 [0.013]	-0.009 [0.013]
<i>Water in Terrain</i>	0.252 (0.434)	-0.062 [0.034]*	-0.059 [0.034]*	0.897 (0.304)	0.008 [0.022]	0.002 [0.022]	0.551 (0.498)	-0.010 [0.032]	-0.012 [0.032]	0.573 (0.494)	-0.017 [0.017]	-0.018 [0.017]
<i>Electricity Connection inside the House</i>	0.496 (0.500)	-0.046 [0.042]	-0.038 [0.042]	0.933 (0.251)	0.024 [0.018]	0.024 [0.018]	0.903 (0.297)	-0.044 [0.022]*	-0.048 [0.023]**	0.800 (0.400)	-0.021 [0.015]	-0.021 [0.015]
<i>Use Gas Stove or Kerosene to Cook</i>	0.167 (0.373)	0.016 [0.032]	0.022 [0.032]	0.521 (0.500)	-0.014 [0.039]	-0.023 [0.038]	0.252 (0.434)	-0.051 [0.023]**	-0.054 [0.022]**	0.309 (0.462)	-0.022 [0.018]	-0.023 [0.018]
<i>House with Own Toilet</i>	0.516 (0.500)	-0.069 [0.042]	-0.063 [0.042]	0.730 (0.444)	-0.011 [0.035]	-0.015 [0.035]	0.392 (0.488)	0.012 [0.034]	0.008 [0.034]	0.527 (0.499)	-0.016 [0.021]	-0.018 [0.021]
<i>Summary Index (z-score)</i>	0.000 (0.467)	-0.066 [0.036]*	-0.055 [0.036]	0.000 (0.456)	0.006 [0.034]	0.000 [0.034]	0.000 (0.426)	-0.054 [0.027]*	-0.061 [0.027]**	0.000 (0.446)	-0.036 [0.018]*	-0.037 [0.018]**

Responses regarding construction materials used in rooms were included only for those households that reported information for all rooms. All the regressions have a dummy by caserio. Model 1: No Controls; Model 2: Control for HH's Years of Schooling, HH's Gender, HH's Age, Assets - Value Per Capita (USD), Monthly Income Per Capita (USD), all measured during the baseline round. Following the standard procedure, when a control variable has a missing value, we impute a value equal to 0 and add a dummy variable equal to 1 for that observation, which indicates that the control variable was missed. The Housing Investment Summary Index (z-score) is defined as the average of the z-scores of all the variables in the table, with the sign of each measure oriented so that the more beneficial outcomes have higher scores. Bonferroni corrected p-value=0.02 for a significance level of 0.1. Reported results: estimated coefficient, robust standard error, p-value and 100\*coefficient/follow-up control mean, in that order.

\*Significant at 10% level. \*\*Significant at 5% level. \*\*\*Significant at 1% level

# Results

**Table 11: Regressions of Satisfaction on Program Dummy.**

Dependent Variable	El Salvador			Uruguay			Mexico			All		
	Follow Up Control Mean (SD)	Model 1	Model 2	Follow Up Control Mean (SD)	Model 1	Model 2	Follow Up Control Mean (SD)	Model 1	Model 2	Follow Up Control Mean (SD)	Model 1	Model 2
<i>Satisfaction with Floor Quality</i>	0.163 (0.369)	0.387 [0.039]***	0.389 [0.040]***	0.314 (0.464)	0.121 [0.038]***	0.122 [0.038]***	0.551 (0.498)	0.108 [0.034]***	0.107 [0.034]***	0.374 (0.484)	0.180 [0.022]***	0.181 [0.021]***
<i>Satisfaction with Wall Quality</i>	0.132 (0.338)	0.477 [0.039]***	0.479 [0.040]***	0.267 (0.443)	0.142 [0.037]***	0.141 [0.037]***	0.439 (0.496)	0.149 [0.035]***	0.148 [0.035]***	0.303 (0.459)	0.226 [0.022]***	0.227 [0.021]***
<i>Satisfaction with Roof Quality</i>	0.159 (0.366)	0.476 [0.038]***	0.477 [0.039]***	0.339 (0.474)	0.179 [0.037]***	0.176 [0.038]***	0.404 (0.491)	0.153 [0.034]***	0.156 [0.035]***	0.317 (0.465)	0.241 [0.021]***	0.241 [0.021]***
<i>Satisfaction with Protection against Rain</i>	0.167 (0.373)	0.426 [0.038]***	0.427 [0.039]***	0.325 (0.469)	0.166 [0.038]***	0.160 [0.038]***	0.347 (0.476)	0.094 [0.034]***	0.096 [0.035]***	0.291 (0.454)	0.199 [0.021]***	0.200 [0.022]***
<i>Satisfaction with Quality of Life</i>	0.506 (0.501)	0.207 [0.045]***	0.211 [0.046]***	0.449 (0.498)	0.096 [0.039]**	0.097 [0.039]**	0.593 (0.491)	0.165 [0.032]***	0.165 [0.032]***	0.527 (0.499)	0.151 [0.022]***	0.153 [0.022]***
<i>Summary Index (z-score)</i>	0.000 (0.781)	1.055 [0.086]***	1.061 [0.088]***	0.000 (0.734)	0.299 [0.059]***	0.295 [0.060]***	0.000 (0.751)	0.272 [0.050]***	0.274 [0.050]***	0.000 (0.753)	0.471 [0.037]***	0.473 [0.037]***

All the regressions have a dummy by caserío. Model 1: No Controls; Model 2: Control for HH's Years of Schooling, HH's Gender, HH's Age, Assets - Value Per Capita (USD), Monthly Income Per Capita (USD), all measured during the baseline round. Following the standard procedure, when a control variable has a missing value, we impute a value equal to 0 and add a dummy variable equal to 1 for that observation, which indicates that the control variable was missed. The Satisfaction Summary Index (z-score) is defined as the average of the z-scores of all the variables in the table, with the sign of each measure oriented so that the more beneficial outcomes have higher scores. Bonferroni corrected p-value=0.02 for a significance level of 0.1. Reported results: estimated coefficient, robust standard error, p-value and 100\*coefficient/follow-up control mean, in that order.

\*Significant at 10% level. \*\*Significant at 5% level. \*\*\*Significant at 1% level

# Results

**Table 12: Regressions of Perception of Security on Program Dummy.**

Dependent Variable	El Salvador			Uruguay			Mexico			All		
	Follow Up Control Mean (SD)	Model 1	Model 2	Follow Up Control Mean (SD)	Model 1	Model 2	Follow Up Control Mean (SD)	Model 1	Model 2	Follow Up Control Mean (SD)	Model 1	Model 2
<i>Safe inside the house</i>	0.643 (0.479)	0.175 [0.040]***	0.178 [0.041]***	0.621 (0.486)	0.029 [0.038]	0.025 [0.038]	0.718 (0.450)	0.001 [0.031]	0.003 [0.031]	0.668 (0.471)	0.053 [0.021]**	0.053 [0.021]**
<i>Safe leaving the house alone</i>	0.601 (0.490)	0.155 [0.043]***	0.159 [0.043]***	0.376 (0.485)	-0.066 [0.037]*	-0.069 [0.037]*	0.551 (0.498)	0.014 [0.035]	0.018 [0.035]	0.512 (0.500)	0.021 [0.022]	0.021 [0.022]
<i>Safe leaving the kids alone in the house</i>	0.248 (0.432)	0.141 [0.043]***	0.144 [0.043]***	0.170 (0.376)	0.001 [0.029]	-0.002 [0.029]	0.162 (0.368)	-0.007 [0.026]	-0.006 [0.026]	0.188 (0.390)	0.032 [0.018]*	0.030 [0.018]
<i>The house had been robbed</i>	0.031 (0.173)	0.023 [0.019]	0.023 [0.019]	0.268 (0.443)	0.013 [0.035]	0.013 [0.035]	0.065 (0.246)	0.002 [0.017]	0.002 [0.017]	0.116 (0.319)	0.011 [0.014]	0.010 [0.014]
<i>Summary Index (z-score)</i>	0.000 (0.681)	0.218 [0.062]***	0.223 [0.062]***	0.000 (0.645)	-0.026 [0.050]	-0.031 [0.050]	0.000 (0.634)	0.001 [0.044]	0.004 [0.044]	0.000 (0.650)	0.045 [0.029]	0.044 [0.029]

All the regressions have a dummy by caserío. Model 1: No Controls; Model 2: Control for HH's Years of Schooling, HH's Gender, HH's Age, Assets - Value Per Capita (USD), Monthly Income Per Capita (USD), all measured during the baseline round. Following the standard procedure, when a control variable has a missing value, we impute a value equal to 0 and add a dummy variable equal to 1 for that observation, which indicates that the control variable was missed. The Perception of Security Summary Index (z-score) is defined as the average of the z-scores of all the variables in the table, with the sign of each measure oriented so that the more beneficial outcomes have higher scores. Bonferroni corrected p-value=0.025 for a significance level of 0.1. Reported results: estimated coefficient, robust standard error, p-value and 100\*coefficient/follow-up control mean, in that order.

\*Significant at 10% level. \*\*Significant at 5% level. \*\*\*Significant at 1% level

# Results

**Table 13: Regressions of Durable Goods on Program Dummy.**

Dependent Variable	El Salvador			Uruguay			Mexico			All		
	Follow Up Control Mean (SD)	Model 1	Model 2	Follow Up Control Mean (SD)	Model 1	Model 2	Follow Up Control Mean (SD)	Model 1	Model 2	Follow Up Control Mean (SD)	Model 1	Model 2
<i>T.V</i>	0.434 (0.496)	-0.013 [0.047]	-0.001 [0.047]	0.926 (0.261)	0.005 [0.022]	0.011 [0.021]	0.728 (0.445)	-0.034 [0.030]	-0.033 [0.030]	0.711 (0.453)	-0.016 [0.018]	-0.012 [0.018]
<i>Fan</i>	0.034 (0.181)	0.015 [0.020]	0.019 [0.020]	0.535 (0.499)	0.018 [0.040]	0.017 [0.040]	0.018 (0.131)	0.001 [0.010]	0.000 [0.010]	0.177 (0.381)	0.010 [0.015]	0.009 [0.015]
<i>Kitchen or Gas Stove</i>	0.404 (0.491)	0.000 [0.044]	0.008 [0.043]	0.768 (0.423)	-0.008 [0.034]	-0.006 [0.035]	0.451 (0.498)	-0.035 [0.030]	-0.039 [0.031]	0.534 (0.499)	-0.018 [0.020]	-0.017 [0.020]
<i>Refrigerator</i>	0.123 (0.329)	-0.028 [0.032]	-0.016 [0.031]	0.683 (0.466)	-0.017 [0.037]	-0.016 [0.037]	0.207 (0.405)	-0.005 [0.026]	-0.009 [0.026]	0.327 (0.469)	-0.014 [0.018]	-0.013 [0.018]
<i>Bicycle</i>	0.323 (0.468)	0.037 [0.043]	0.043 [0.043]	0.546 (0.498)	0.014 [0.040]	0.019 [0.040]	0.279 (0.449)	-0.029 [0.030]	-0.027 [0.030]	0.370 (0.483)	0.001 [0.021]	0.003 [0.021]
<i>Summary Index (z-score)</i>	0.000 (0.544)	0.015 [0.050]	0.030 [0.048]	0.000 (0.561)	0.004 [0.046]	0.011 [0.045]	0.000 (0.598)	-0.043 [0.036]	-0.047 [0.036]	0.000 (0.572)	-0.013 [0.024]	-0.010 [0.024]

All the regressions have a dummy by caserio. Model 1: No Controls; Model 2: Control for HH's Years of Schooling, HH's Gender, HH's Age, Assets - Value Per Capita (USD), Monthly Income Per Capita (USD), all measured during the baseline round. Following the standard procedure, when a control variable has a missing value, we impute a value equal to 0 and add a dummy variable equal to 1 for that observation, which indicates that the control variable was missed. The Assets Summary Index (z-score) is defined as the average of the z-scores of all the variables in the table, with the sign of each measure oriented so that the more beneficial outcomes have higher scores. Bonferroni corrected p-value=0.02 for a significance level of 0.1. Reported results: estimated coefficient, robust standard error, p-value and 100\*coefficient/follow-up control mean, in that order.

\*Significant at 10% level. \*\*Significant at 5% level. \*\*\*Significant at 1% level

# Results

**Table 14: Regressions of Demographic Variables on Program Dummy**

Dependent Variable	El Salvador			Uruguay			Mexico			All		
	Follow Up Control Mean (SD)	Model 1	Model 2	Follow Up Control Mean (SD)	Model 1	Model 2	Follow Up Control Mean (SD)	Model 1	Model 2	Follow Up Control Mean (SD)	Model 1	Model 2
<i>HH Size</i>	5.453 (2.513)	-0.031 [0.273]	-0.099 [0.264]	4.954 (2.657)	0.253 [0.220]	0.286 [0.216]	5.264 (2.595)	0.002 [0.175]	-0.019 [0.172]	5.223 (2.596)	0.079 [0.124]	0.085 [0.122]
<i>Newborns (&lt;1)</i>	0.116 (0.321)	0.011 [0.031]	0.010 [0.032]	0.124 (0.351)	-0.009 [0.028]	-0.007 [0.028]	0.110 (0.320)	0.028 [0.025]	0.027 [0.025]	0.116 (0.330)	0.011 [0.016]	0.013 [0.016]
<i>Newborns (&lt;2)</i>	0.229 (0.429)	-0.018 [0.041]	-0.022 [0.041]	0.262 (0.515)	0.053 [0.041]	0.068 [0.040]*	0.239 (0.477)	0.023 [0.036]	0.022 [0.035]	0.243 (0.476)	0.023 [0.022]	0.027 [0.022]
<i>Summary Index (z-score)</i>	0.000 (0.742)	-0.007 [0.079]	-0.020 [0.078]	0.000 (0.789)	0.057 [0.064]	0.073 [0.064]	0.000 (0.761)	0.045 [0.056]	0.041 [0.056]	0.000 (0.763)	0.037 [0.037]	0.042 [0.037]

All the regressions have a dummy by caserio. Model 1: No Controls; Model 2: Control for HH's Years of Schooling, HH's Gender, HH's Age, Assets - Value Per Capita (USD), Monthly Income Per Capita (USD), all measured during the baseline round. Following the standard procedure, when a control variable has a missing value, we impute a value equal to 0 and add a dummy variable equal to 1 for that observation, which indicates that the control variable was missed. The Demographic Summary Index (z-score) is defined as the average of the z-scores of all the variables in the table, with the sign of each measure oriented so that the more beneficial outcomes have higher scores. Bonferroni corrected p-value=0.033 for a significance level of 0.1. Reported results: estimated coefficient, robust standard error, p-value and 100\*coefficient/follow-up control mean, in that order.

\*Significant at 10% level. \*\*Significant at 5% level. \*\*\*Significant at 1% level

# Results

**Table 15: Regressions of Labor and Income Variables on Program Dummy.**

Dependent Variable	El Salvador			Uruguay			Mexico			All		
	Follow Up Control Mean (SD)	Model 1	Model 2	Follow Up Control Mean (SD)	Model 1	Model 2	Follow Up Control Mean (SD)	Model 1	Model 2	Follow Up Control Mean (SD)	Model 1	Model 2
<i>Monthly Income Per Capita (USD)</i>	31.618 (29.224)	0.704 [3.098]	1.460 [2.920]	94.862 (156.792)	-3.371 [13.443]	-3.788 [13.399]	55.422 (54.912)	-0.422 [3.759]	0.245 [3.814]	59.572 (81.054)	-1.835 [3.905]	-2.232 [3.849]
<i>Hours worked last week by Head of HH</i>	38.033 (17.351)	1.738 [2.072]	1.000 [2.073]	39.081 (19.877)	0.025 [1.821]	0.562 [1.829]	41.086 (19.498)	0.824 [1.616]	0.668 [1.573]	39.711 (19.154)	0.704 [1.055]	0.844 [1.038]
<i>Hours worked last week by Spouse</i>	35.500 (25.995)	4.974 [5.418]	4.655 [5.817]	39.353 (19.561)	-0.047 [2.661]	-0.115 [2.678]	28.250 (18.867)	-3.052 [3.026]	-1.696 [3.129]	34.194 (20.903)	-0.693 [1.883]	-0.437 [1.888]
<i>Summary Index (z-score)</i>	0.000 (0.459)	0.054 [0.042]	0.056 [0.041]	0.000 (0.506)	-0.010 [0.039]	-0.004 [0.040]	0.000 (0.490)	-0.009 [0.032]	-0.008 [0.032]	0.000	0.006 [0.021]	0.010 [0.021]

In the case of monetary variables, observations over the 99th percentile were excluded. With regard to the number of hours worked, cases in which more than 84 hours were reported were not considered. All the regressions have a dummy by caseric. Model 1: No Controls; Model 2: Control for HH's Years of Schooling, HH's Gender, HH's Age, Assets - Value Per Capita (USD), Monthly Income Per Capita (USD), all measured during the baseline round. Following the standard procedure, when a control variable has a missing value, we impute a value equal to 0 and add a dummy variable equal to 1 for that observation, which indicates that the control variable was missed. The Economic Summary Index (z-score) is defined as the average of the z-scores of all the variables in the table, with the sign of each measure oriented so that the more beneficial outcomes have higher scores. Bonferroni corrected p-value=0.033 for a significance level of 0.1. Reported results: estimated coefficient, robust standard error, p-value and 100\*coefficient/follow-up control mean, in that order.  
 \*Significant at 10% level. \*\*Significant at 5% level. \*\*\*Significant at 1% level

# Results

**Table 16: Regressions of Health Variables of Children on Program Dummy**

Dependent Variable	El Salvador			Uruguay			Mexico		
	Follow Up Control Mean (SD)	Model 1	Model 2	Follow Up Control Mean (SD)	Model 1	Model 2	Follow Up Control Mean (SD)	Model 1	Model 2
Respiratory Disease during last 4 weeks	0.690 (0.463)	-0.041 [0.060]	-0.045 [0.062]	0.175 (0.381)	-0.002 [0.034]	0.002 [0.034]	0.417 (0.494)	-0.047 [0.043]	-0.043 [0.043]
Diarrhea during last 4 weeks	0.168 (0.374)	-0.050 [0.042]	-0.054 [0.044]	0.158 (0.365)	-0.011 [0.034]	-0.003 [0.034]	0.135 (0.342)	-0.035 [0.028]	-0.033 [0.028]
Summary Index (z-score)	0.000 (0.743)	0.114 [0.092]	0.122 [0.094]	0.000 (0.725)	0.016 [0.066]	0.002 [0.067]	0.000 (0.755)	0.092 [0.061]	0.087 [0.061]

All the regressions have a dummy by caserio. Model 1: Control for Age, Age Squared, Gender, and a dummy equal to 1 if the mother lives in the household at the time of the follow-up round; Model 2: Control for Age, Age Squared, Gender, a dummy equal to 1 if the mother lives in the household at the time of the follow-up round and also for HH's Years of Schooling, HH's Gender, HH's Age, Assets - Value Per Capita (USD), and Monthly Income Per Capita (USD) at the time of the baseline round. Following the standard procedure, when a control variable has a missing value, we impute a value equal to 0 and add a dummy variable equal to 1 for that observation, which indicates that the control variable was missed. The Health Summary Index (z-score) is defined as the average of the z-scores of all the variables in the table, with the sign of each measure oriented so that the more beneficial outcomes have higher scores. Bonferroni corrected p-value=0.05 for a significance level of 0.1. Reported results: estimated coefficient, robust standard error, p-value and 100\*coefficient/follow-up control mean, in that order.

\*Significant at 10% level. \*\*Significant at 5% level. \*\*\*Significant at 1% level

# Results

**Table 17: Regressions of Health Variables of Children on Program Dummy (cont.)**

Dependent Variable	All			El Salvador and Mexico		
	Follow Up Control Mean (SD)	Model 1	Model 2	Follow Up Control Mean (SD)	Model 1	Model 2
Respiratory Disease during last 4 weeks	0.403 (0.490)	-0.029 [0.025]	-0.026 [0.025]	0.519 (0.500)	-0.047 [0.035]	-0.045 [0.035]
Diarrhea during last 4 weeks	0.151 (0.358)	-0.027 [0.019]	-0.024 [0.019]	0.147 (0.354)	-0.040 [0.023]*	-0.038 [0.023]
Summary Index (z-score)	0.000 (0.741)	0.064 [0.040]	0.057 [0.040]	0.000 (0.750)	0.100 [0.050]**	0.097 [0.051]*

All the regressions have a dummy by caserio. Model 1: Control for Age, Age Squared, Gender, and a dummy equal to 1 if the mother lives in the household at the time of the follow-up round; Model 2: Control for Age, Age Squared, Gender, a dummy equal to 1 if the mother lives in the household at the time of the follow-up round and also for HH's Years of Schooling, HH's Gender, HH's Age, Assets - Value Per Capita (USD), and Monthly Income Per Capita (USD) at the time of the baseline round. Following the standard procedure, when a control variable has a missing value, we impute a value equal to 0 and add a dummy variable equal to 1 for that observation, which indicates that the control variable was missed. The Health Summary Index (z-score) is defined as the average of the z-scores of all the variables in the table, with the sign of each measure oriented so that the more beneficial outcomes have higher scores. Bonferroni corrected p-value=0.05 for a significance level of 0.1. Reported results: estimated coefficient, robust standard error, p-value and 100\*coefficient/follow-up control mean, in that order.

\*Significant at 10% level. \*\*Significant at 5% level. \*\*\*Significant at 1% level



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# Who Lives in Slums and Why?

- 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 entail (Gleaser, 2011)
- We provide some evidence to support the hypothesis that slum and non-slum dwellers have different preferences for income and housing.
- We compare a large number of outcomes of interest in regard to the slum population using information from the national household surveys of El Salvador, Mexico and Uruguay on the poor populations in the same geographical areas as our TECHO samples.

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# Slum Dwellers vs Non-Slum Poor. El Salvador

**Table 18:** Differences of Means between Pooers and Slum Dwellers. El Salvador

Variable	(1) Mean of Observations National Poor (EHPM 2008)	(2) Mean of Observations Settlements (UTPMP 2007-08)	Difference (1) - (2)	Difference (1) - (2) w/ dummy rural/urban
<i>Monthly Income Per Capita (USD)</i>	37.293 (0.622)	30.146 (1.777)	7.147 (1.896)***	2.844 (2.173)
<i>Employment rate 16-64</i>	0.540 (0.006)	0.510 (0.018)	0.030 (0.019)	0.019 (0.019)
<i>Wage employment rate 16-64</i>	0.328 (0.007)	0.195 (0.016)	0.134 (0.018)***	0.122 (0.017)***
<i>Self employment rate 16-64</i>	0.212 (0.006)	0.313 (0.020)	-0.100 (0.021)***	-0.101 (0.021)***
<i>Average Wage Males 16-64 (USD)</i>	132.607 (2.206)	87.041 (5.850)	45.565 (6.167)***	35.581 (5.356)***
<i>Average Wage Females 16-64 (USD)</i>	111.619 (2.216)	84.060 (5.105)	27.560 (5.514)***	18.781 (6.059)***

Figures computed at household and individual levels in El Salvador using the 2008 multi-purpose household survey for all provinces (known as "departments") in which there are UTPMP households (excludes San Salvador Department) and UTPMP impact evaluation baseline data sources. Standard errors are clustered at the primary sample unit level shown in parentheses.

The term "national poor" refers to households whose members were living on less than USD 89.4 per capita per month in urban zones and less than USD 58.2 per capita per month in rural zones in 2008; these figures are equivalent to two basic baskets for urban and rural areas, which represent the national poverty line and basic needs in El Salvador as of 2008.

\*Significant at 10% level. \*\*Significant at 5% level. \*\*\*Significant at 1% level

# Slum Dwellers vs Non-Slum Poor. El Salvador

**Table 19:** Differences of Means between Poores and Slum Dwellers. El Salvador

Variable	(1) Mean of Observations National Poor (EHPM 2008)	(2) Mean of Observations Settlements (UTPMP 2007-08)	Difference (1) - (2)	Difference (1) - (2) w/ dummy rural/urban
<b>Demographics</b>				
<i>HH Size</i>	4.669 (0.052)	4.977 (0.129)	-0.308 (0.132)**	-0.181 (0.138)
<i>Female Head</i>	0.288 (0.009)	0.213 (0.015)	0.075 (0.018)***	0.047 (0.020)**
<i>Head of HH's Age</i>	46.904 (0.383)	44.717 (0.927)	2.187 (1.019)**	1.783 (0.989)*
<i>Head of HH's Years of Schooling</i>	3.693 (0.086)	2.438 (0.184)	1.255 (0.198)***	0.825 (0.161)***
<i>Children 5-12 enrolled in school</i>	0.827 (0.009)	0.931 (0.013)	-0.104 (0.016)***	-0.120 (0.017)***
<i>Children 13-18 enrolled in school</i>	0.622 (0.015)	0.578 (0.037)	0.044 (0.041)	0.010 (0.040)

Figures computed at household and individual levels in El Salvador using the 2008 multi-purpose household survey (EHPM) for all provinces (known as "departments") in which there are UTPMP households (excludes San Salvador Department) and UTPMP impact evaluation baseline data sources. Standard errors are clustered at the primary sample unit level shown in parentheses.

The term "national poor" refers to households whose members were living on less than USD 89.4 per capita per month in urban zones and less than USD 58.2 per capita per month in rural zones in 2008; these figures are equivalent to two basic baskets for urban and rural areas, which represent the national poverty line and basic needs in El Salvador in 2008.

\*Significant at 10% level. \*\*Significant at 5% level. \*\*\*Significant at 1% level

# Slum Dwellers vs Non-Slum Poor. El Salvador

**Table 20:** Differences of Means between Poores and Slum Dweller. El Salvador

Variable	(1) Mean of Observations National Poor (EHPM 2008)	(2) Mean of Observations Settlements (UTPMP 2007-08)	Difference (1) - (2)	Difference (1) - (2) w/ dummy rural/urban
<b>Housing and Assets</b>				
<i>Dorms Per Capita</i>	0.507 (0.009)	0.126 (0.012)	0.381 (0.015)***	0.343 (0.019)***
<i>Share of Rooms with Good Quality Floors</i>	0.606 (0.014)	0.144 (0.014)	0.462 (0.019)***	0.385 (0.029)***
<i>Water in Terrain</i>	0.553 (0.017)	0.215 (0.051)	0.339 (0.051)***	0.249 (0.042)***
<i>House with Own Toilet</i>	0.781 (0.010)	0.483 (0.041)	0.298 (0.042)***	0.279 (0.040)***
<i>Electricity Connection inside the House</i>	0.805 (0.011)	0.391 (0.058)	0.414 (0.060)***	0.352 (0.051)***
<i>Refrigerator</i>	0.331 (0.012)	0.075 (0.019)	0.256 (0.023)***	0.199 (0.032)***
<i>T.V.</i>	0.666 (0.014)	0.436 (0.037)	0.230 (0.039)***	0.168 (0.030)***

Figures computed at household and individual levels in El Salvador using the 2008 multi-purpose household survey (EHPM) for all provinces (known as "departments") in which there are UTPMP households (excludes San Salvador Department) and UTPMP impact evaluation baseline data sources. Standard errors are clustered at the primary sample unit level shown in parentheses.

The term "national poor" refers to households whose members were living on less than USD 89.4 per capita per month in urban zones and less than USD 58.2 per capita per month in rural zones in 2008; these figures are equivalent to two basic baskets for urban and rural areas, which represent the national poverty line and basic needs in El Salvador in 2008.

\*Significant at 10% level. \*\*Significant at 5% level. \*\*\*Significant at 1% level

# Slum Dwellers vs Non-Slum Poor. Uruguay

Table 21: Differences of Means between Poors and Slum Dwellers. Uruguay

Variable	(1) Mean of Observations Poor Out of Slums (ECH 2008)	(2) Mean of Observations Settlements (ECH 2008)	Difference (1) - (2)
<i>Monthly Income Per Capita (USD)</i>	77.561 (0.627)	132.936 (3.475)	-55.376 (3.364)***
<i>Employment rate 16-64</i>	0.584 (0.004)	0.647 (0.007)	-0.063 (0.007)***
<i>Wage employment rate 16-64</i>	0.404 (0.005)	0.467 (0.008)	-0.063 (0.009)***
<i>Self employment rate 16-64</i>	0.181 (0.003)	0.180 (0.007)	0.000 (0.008)
<i>Average Wage Males 16-64 (USD)</i>	187.336 (6.969)	260.234 (5.858)	-72.899 (9.489)***
<i>Average Wage Females 16-64 (USD)</i>	74.283 (2.086)	108.738 (4.156)	-34.455 (3.657)***

Figures computed at household and individual levels in Montevideo and Canelones provinces (known as "departments") in Uruguay using the 2008 continuous household survey (ECH). Standard errors are clustered at the primary sample unit level shown in parentheses.

The term "national poor" refers to households whose members are below the national poverty line in urban zones in Uruguay. This line is calculated monthly; in 2008, it ranged between USD 213 and USD 234 per capita per month. The poverty line represents a basic basket of "staple food needs" plus a basic basket of "non-food needs", both calculated using 2006 as the base year.

\*Significant at 10% level. \*\*Significant at 5% level. \*\*\*Significant at 1% level



# Slum Dwellers vs Non-Slum Poor. Uruguay

Table 22: Differences of Means between Pooors and Slum Dwellers. Uruguay

Variable	(1) Mean of Observations Poor Out of Slums (ECH 2008)	(2) Mean of Observations Settlements (ECH 2008)	Difference (1) - (2)
<b>Demographics</b>			
<i>HH Size</i>	4.274 (0.091)	3.691 (0.053)	0.584 (0.118)***
<i>Female Head</i>	0.378 (0.038)	0.372 (0.013)	0.005 (0.039)
<i>Head of HH's Age</i>	45.311 (0.213)	45.423 (0.352)	-0.112 (0.395)
<i>Head of HH's Years of Schooling</i>	6.351 (0.190)	6.169 (0.099)	0.182 (0.140)
<i>Children 5-12 enrolled in school</i>	0.980 (0.002)	0.978 (0.003)	0.002 (0.004)
<i>Children 13-18 enrolled in school</i>	0.707 (0.011)	0.661 (0.019)	0.046 (0.024)*

Figures computed at household and individual levels in Montevideo and Canelones provinces (known as "departments") in Uruguay using the 2008 continuous household survey (ECH). Standard errors are clustered at the primary sample unit level shown in parentheses.

The term "national poor" refers to households whose members are below the national poverty line in urban zones in Uruguay. This line is calculated monthly; in 2008, it ranged between USD 213 and USD 234 per capita per month. The poverty line represents a basic basket of "staple food needs" plus a basic basket of "non-food needs", both calculated using 2006 as the base year.

\*Significant at 10% level. \*\*Significant at 5% level. \*\*\*Significant at 1% level

# Slum Dwellers vs Non-Slum Poor. Uruguay

Table 23: Differences of Means between Pooors and Slum Dwellers. Uruguay

Variable	(1) Mean of Observations Poor Out of Slums (ECH 2008)	(2) Mean of Observations Settlements (ECH 2008)	Difference (1) - (2)
<b>Housing and Assets</b>			
<i>Rooms Per Capita</i>	0.836 (0.024)	0.977 (0.020)	-0.141 (0.039)***
<i>Share of Rooms with Good Quality Floors</i>	0.758 (0.010)	0.596 (0.017)	0.162 (0.016)***
<i>Water in Terrain</i>	0.864 (0.061)	0.989 (0.004)	-0.125 (0.057)**
<i>House with Own Toilet</i>	0.922 (0.006)	0.895 (0.009)	0.027 (0.012)**
<i>Electricity Connection inside the House</i>	0.988 (0.003)	0.996 (0.001)	-0.008 (0.003)**
<i>Refrigerator</i>	0.886 (0.006)	0.860 (0.011)	0.027 (0.011)**
<i>T.V.</i>	0.939 (0.007)	0.919 (0.008)	0.020 (0.009)**

Figures computed at household and individual levels in Montevideo and Canelones provinces (known as "departments") in Uruguay using the 2008 continuous household survey (ECH). Standard errors are clustered at the primary sample unit level shown in parentheses.

The term "national poor" refers to households whose members are below the national poverty line in urban zones in Uruguay. This line is calculated monthly; in 2008, it ranged between USD 213 and USD 234 per capita per month. The poverty line represents a basic basket of "staple food needs" plus a basic basket of "non-food needs", both calculated using 2006 as the base year.

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# Slum Dwellers vs Non-Slum Poor. Mexico

Table 24: Differences of Means between Pooers and Slum Dwellers. Mexico

Variable	(1) Mean Poor (ENIGH 2010)	(2) Mean All Slums (UTPMP 2010 - 11)	Difference (1) - (2)	Difference (1) - (2) w/ dummy rural/urban
<i>Monthly Income Per Capita (USD)</i>	86.274 (1.629)	107.674 (6.073)	-21.399 (6.218)***	-34.770 (9.504)***
<i>Employment rate 16-64</i>	0.877 (0.010)	0.563 (0.009)	0.315 (0.014)***	0.278 (0.017)***
<i>Wage employment rate 16-64</i>	0.621 (0.020)	0.509 (0.011)	0.113 (0.023)***	0.064 (0.037)*
<i>Self employment rate 16-64</i>	0.252 (0.016)	0.049 (0.008)	0.203 (0.018)***	0.214 (0.028)***
<i>Average Wage Males 16-64 (USD)</i>	237.071 (4.699)	252.964 (7.439)	-15.893 (8.725)*	-30.158 (8.264)***
<i>Average Wage Females 16-64 (USD)</i>	152.216 (4.922)	253.512 (20.365)	-101.295 (20.726)***	-110.316 (36.068)***

Figures computed at household and individual levels in Estado de Mexico, Mexico, using the 2010 national household income and expenditure survey (ENIGH) and UTPMP impact evaluation baseline data sources (including non-eligible UTPMP households). Standard errors are clustered at the primary sample unit level shown in parentheses.

The term "national poor" refers to households whose members were living on less than USD 167.67 per capita per month in urban zones and less than USD 107.29 in rural zones between August and November 2010; these figures are equivalent to two basic baskets, which represent the national poverty line and basic needs in Mexico as of 2010.

\*Significant at 10% level. \*\*Significant at 5% level. \*\*\*Significant at 1% level

# Slum Dwellers vs Non-Slum Poor. Mexico

Table 25: Differences of Means between Pooers and Slum Dwellers. Mexico

Variable	(1) Mean Poor (ENIGH 2010)	(2) Mean All Slums (UTPMP 2010 - 11)	Difference (1) - (2)	Difference (1) - (2) w/ dummy rural/urban
<b>Demographics</b>				
<i>HH Size</i>	4.658 (0.074)	4.721 (0.148)	-0.063 (0.164)	0.013 (0.182)
<i>Female Head</i>	0.208 (0.012)	0.201 (0.014)	0.006 (0.018)	0.017 (0.023)
<i>Head of HH's Age</i>	46.130 (0.512)	43.537 (0.711)	2.592 (0.870)***	2.580 (1.159)**
<i>Head of HH's Years of Schooling</i>	6.897 (0.165)	5.214 (0.227)	1.682 (0.279)***	1.134 (0.431)***
<i>Children 5-12 enrolled in school</i>	0.980 (0.006)	0.966 (0.007)	0.015 (0.009)	0.005 (0.014)
<i>Children 13-18 enrolled in school</i>	0.632 (0.025)	0.430 (0.030)	0.202 (0.039)***	0.148 (0.061)**

Figures computed at household and individual levels in Estado de Mexico, Mexico, using the 2010 national household income and expenditure survey (ENIGH) and UTPMP impact evaluation baseline data sources (including non-eligible UTPMP households). Standard errors are clustered at the primary sample unit level shown in parentheses.

The term "national poor" refers to households whose members were living on less than USD 167.67 per capita per month in urban zones and less than USD 107.29 in rural zones between August and November 2010; these figures are equivalent to two basic baskets, which represent the national poverty line and basic needs in Mexico as of 2010.

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# Slum Dwellers vs Non-Slum Poor. Mexico

**Table 26:** Differences of Means between Pooors and Slum Dwellers. Mexico

Variable	(1) Mean Poor (ENIGH 2010)	(2) Mean All Slums (UTPMP 2010 - 11)	Difference (1) - (2)	Difference (1) - (2) w/ dummy rural/urban
<b>Housing and Assets</b>				
<i>Rooms Per Capita</i>	0.921 (0.022)	0.854 (0.023)	0.067 (0.032)**	0.034 (0.045)
<i>Share of Rooms with Good Quality Floors</i>	0.959 (0.006)	0.738 (0.019)	0.220 (0.020)***	0.227 (0.034)***
<i>Water in Terrain</i>	0.926 (0.014)	0.574 (0.050)	0.353 (0.051)***	0.331 (0.098)***
<i>House with Own Toilet</i>	0.835 (0.012)	0.481 (0.032)	0.354 (0.034)***	0.310 (0.044)***
<i>Electricity Connection inside the House</i>	0.988 (0.003)	0.885 (0.022)	0.103 (0.022)***	0.071 (0.023)***
<i>Refrigerator</i>	0.700 (0.024)	0.195 (0.034)	0.504 (0.041)***	0.296 (0.070)***
<i>T.V.</i>	0.953 (0.010)	0.640 (0.039)	0.313 (0.040)***	0.223 (0.048)***

Figures computed at household and individual levels in Estado de Mexico, Mexico, using the 2010 national household income and expenditure survey (ENIGH) and UTPMP impact evaluation baseline data sources (including non-eligible UTPMP households). Standard errors are clustered at the primary sample unit level shown in parentheses.

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## Discussion

- **The results seem to be consistent with the existence of poor groups with different preferences.**
- We find that, while slum dwellers have clearly worse housing infrastructure than the rest of the poor population, they earn significantly more than poor people living in non-slum areas even though they have the same levels of human capital.
- There appears to be an intrinsic “selection” among the poor: those who prefer to have good access to the labor market in cities tend to gather in slums, while those who are less willing to do so live in better environments, although at a significant cost in terms of income.
- Moving forward, an understanding of these differences will be crucial in improving the design of policies for upgrading the living conditions of the urban poor.

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# Conclusions

- Limited in situ improvements in the housing of poor families has a large effect on their well-being. This is consistent with Cattaneo et. al (2009) and Devoto et. al (2011)
- Additionally, also in line with Cattaneo et al. (2009), we find that the improved housing conditions lead to large reductions in the incidence of diarrhea, at least in two of the three experiments.
- Perceptions of security and safety change for the better only in El Salvador, while there is no change in the other two countries.
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- Perceptions of security and safety change for the better only in El Salvador, while there is no change in the other two countries.
- The provision of better housing has virtually no other statistically significant effects.

# Conclusions

- Finally, we find that slum dwellers have clearly worse housing infrastructure than poor non-slum dwellers. However, in the more urban areas, the slum dwellers earn significantly more than other poor households and have comparable levels of educational attainment and labor-market participation outcomes.
- The existence of these two types of poor households with different preferences should be taken into account when designing housing policies.

# Conclusions

- Finally, we find that slum dwellers have clearly worse housing infrastructure than poor non-slum dwellers. However, in the more urban areas, the slum dwellers earn significantly more than other poor households and have comparable levels of educational attainment and labor-market participation outcomes.
- The existence of these two types of poor households with different preferences should be taken into account when designing housing policies.



# Conclusions

- Thanks