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Effects of Shoe Donations on Children's Time Allocation TOMS Shoes in El Salvador

Master's Thesis

International and Development Economics

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Abstract: What are the impacts of TOMS shoe donations in rural El Salvador? This paper tries to answer the question by studying the changes in time allocation among children age 6 to 12 years in El Salvador. By taking advantage of a Randomized Control Trial performed between January 15, 2012 and February 21, 2013 I study time allocation differences between baseline and follow-up periods among treatment and control groups. The primary findings of the study show that children part of treatment communities reduced the time spent on school related activities by approximately 0.657 hours per day while increasing the time spent on other activities by 0.66 hours. These results are significant and robust to different specifications. These findings suggest that the type of shoe donation matters in its effect on time allocation, giving light to the importance of understanding the context and environment that the target population is exposed to in a particular country.

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1. Introduction

TOMS Shoes and its One for One movements aims to "improve the health, education and well-being of a child" by donating canvas shoes to children in over 50 different countries where shoes are needed and where they would have the greatest impact. Like many other organizations, TOMS Shoes tries to provide children with what is needed in order to achieve a better future. But, are shoes really helping children? This research aims to answer the question of the effectiveness of shoe donations by studying the changes in time devoted to schooling, playing time and labor activities among children ages 6 to 12 years old after a randomized distribution of shoes in El Salvador.

Research has shown that among the most important factors for children's time allocation are size, income and wealth of the family as well as parents' education. Similarly, external characteristics, like school costs and availability of such can also explain how children distribute time among labor and schooling. Acknowledging these factors can help understand how shoes can affect change time distribution. By utilizing data obtained from a Randomized Control Trial in El Salvador during the months of January 15, 2012 and February 21, 2013, in which shoes were distributed, I compared treatment and control groups' time allocation through a difference in difference and Seemingly Unrelated Regressions estimation. Findings show that being part of treated communities reduces time spent on schooling activities (both attending school and doing homework) by 0.657 hours per day.

These results highlight the limited effect that TOMS Shoes donations have on incentivizing school attendance among children in El Salvador. The remainder of this paper goes as follow. Section 2 describes the relevant literature; Section 3 describes the data collection, methodology and model used in this case. Section 4 and 5 presents and discuss the results obtained from this study.

2. Literature Review

In order to understand how TOMS shoe donations can affect the amount of time spent in specific activities among children age 6 to 12 years old, it is important to understand the channels through which TOMS can influence distribution of time. Shoe donations can be beneficial by increasing schooling through the access required items for school attendance

(such as shoes) that the household might not have been able to acquire before. In addition, shoes can allow children to spend more time performing more recreation activities such as playing. However, it is also possible that receiving shoes might allow children to walk longer distances, and by this, provide a new source of labor for the household and by this, increasing time spent on different labor activities.

2.1 Determinants of Time Distribution

Children's time allocation can be affected by several factors; most important are those related to household characteristics. Most of children's time can be divided between three major categories: schooling, labor and recreation activities. Several papers study the many factors that can influence this allocation. These various factors can be categorized into two main groups: household characteristics and external factors. Among household characteristics, the determinants of a child's distribution of time are parental characteristics, income and wealth, and family size.

Ponczek et al. (2012); Cigno et al. (2002); and Hilson (2012); explain the relationship between family size, measure by number of siblings in the family, and time allocation among children. Ponczek et al. (2012) study how family size influences investment in education and use of children in any type of labor. Their findings suggest that family size is directly related to participation in the labor force and increase in household activities among children. Similarly, Cigno et al. (2002) find that parent's probability of giving birth to more children increases the chances of performing child labor and decreases time spent at school for each specific child in rural India. Eloundou-Enyegue, et al. (2006) and Hilson (2012) also find similar results on the relation between family size and schooling time and labor participation among children.

Family income and wealth can also explain distribution of time among children in the household. Plug, et al. (2005) explores the relationship between family income on household's decision to use child labor. The main findings suggest that income and the principal activity of head of the household plays a significant role on the extent and type of labor children perform in the family. Soares et al. (2012) explores coffee producers families in Brazil and the extent of child labor among them finding similar results; Edmonds, et al. (2012) study of poor families in Ecuador show how child labor decrease as a result of cash allowances to the mothers; and Nepal, et al. (2012) study the relationship between child and adult labor. As adult labor decline

as a result of illness, child labor tends to increase as a response. All of these studies found significant results in terms of child labor, emphasizing how wealth, income and household characteristics determine the extent of which a child would work or attend school.

External factors can also influence time allocation among children. Theories relating schooling costs as well as availability of school are among the most influential. Hazarika and Bedi (2003) study the relationship between school cost and its impact on child labor in rural Pakistan. They found that extra-household child labor and cost of schooling are positively related whereas intra-household child labor is not responsive to changes in school cost. One of the most important factors is the distance that they must travel to their school center. Vuri (2010) and Kondylis et al. (2011) studied the relationship between travel distance to school center and time allocation among school age children. Both of them found that the greater the distance to school discourages children's school attendance and makes them more likely to work.

Gender also plays an important role in determining the distribution of time among children. Several studies have been conducted on the difference between men and women; especially differences in participation rates in certain activities. Most of the research highlights the gap that exists in the labor force (Ferrada (2010); Hirsch (2010); Lechner (2011)) and in the distribution of housework (Garcia-mainar (2011); Gwozdz (2010)). Males are more likely to spend additional time in extra-household activities whereas females spend more time performing intra-household activities. This distribution can be expected to be observed among children; therefore these same differences apply to the individuals studied in this research.

2.2 Impact of Shoe Donations

Acknowledging these initial determinants of time allocation help to understand how the allocation fluctuates when certain constraints are relaxed. In-kind donations distributed throughout the developing world aim to close the gap between the necessities and the access to them (Trainer, 2002). In this circumstance, shoe donations become important since shoes can prevent foot diseases and improve walking speed and gait when they are worn (Lythos, 2009). In this matter, TOMS shoe donations are expected to help reduce parasite infections in children and in the cases where shoes are necessary for traveling, increase school attendance by reducing the time required for traveling to school. In addition, it is expected that the possession

of shoes will increase school attendance as families won't have to invest on shoes for their children, which are often a required part of their uniforms. It will also modify the time that children spend in activities such as increase in playing time, and modifying child labor.

It can be the case, however, that donation of shoes can influence time allocation contrary to what is expected. similar to the Maldonado et al. (2008) paper, where they found that access to credit generates conflicted results on schooling and child labor since credit-constrained households that cultivate land may discover new demands for child labor for farming -or perhaps taking care of siblings while the mothers operate a new or expanded business-; ownership of shoes can liberate labor that had not been available otherwise and increase child labor either by participating in the labor force or by performing more intra-household activities.

Shoe donations therefore, are expected to modify the distribution of time, especially on those activities where shoes can directly improve their situation, in particular schooling time and recreation activities. Indirectly, it can be the case that possession of shoes frees child labor and allows the household to make use of children's time in any type of labor activities. The extent, to which TOMS shoes can impact these, will greatly depend on household and parental characteristics.

3. Methodology

3.1 Data Collection

The data collected for the study comes from the TOMS shoes project in El Salvador. The sample for this study consists of households who have children sponsored by World Vision International which is the main giving partner working along with TOMS shoes in the country. These households live in communities near four Development Programs Areas (ADP) in El Salvador. Figure 1 shows the location of the 4 different areas in which the randomized control trial took place. These four locations were chosen based on the following criteria: one, ADPs were to achieve a greater coverage of El Salvador in geographical terms. Second, they had to be in areas of extreme poverty prevalence. Third, they had not received TOMS Shoes donations in the previous year. The randomization of the treatment and distribution of TOMS shoes, was done at the community level and carried out after a baseline survey for the treated

and control communities. The follow-up survey was done between 3 to 4 months after the baseline survey in each community, and shoes were distributed to the control communities after obtaining their survey information. The households surveyed are the total of households within each of these communities, all communities sponsored by World Vision. The unit of analysis is at the individual level, specifically children ages 6 to 12. The head of households provided the information obtained in the survey.

3.2 Time Use Diary

In addition to the main survey, each household received a Time Use Diary to be filled out by the mother with the information of a randomly selected child in the cases were there were no children with migrant parents in the household. All children were within the ages of 6 to 12 years old. Each Time Use Diary (TUD) collected hourly information on 13 different activities that children are most likely to perform. These activities are *Sleeping*, *Eating*, *Washing and Dressing*, *School*, *Outside Work*, *Shopping*, *Household Work*, *Collecting Wood*, *Collecting Water*, *Doing Homework*, *Playing*, *Going to Church*, *and Watching Television*. Each mother was instructed in the way to fill out the TUDs: "mark the hour in which the child performed certain activity". Mothers were allowed to mark multiple different activities within the same hour, up to 4 different activities. They were also required to mark what type of shoe, if any, children used while performing the activity. Table A1 shows a summary table of the 13 different activities for which the TUD collected information.

3.3 Construction of variables

From the 13 different activities captured by the TUDs I created 4 different activity groups for similar activities: *Schooling*, *Labor*, *Recreation* and *Other* activities. Table A2 shows a matrix of the different activities contained in each group. Like the 13 individual activities, the time spent on these 4 activity groups adds up to 24 hours for each individual for both baseline and follow-up data. From the surveyed household, only those individuals who have both observations in the baseline and follow up periods were included in this analysis. Attrition in this case is difficult to estimate especially for situations where households declined on participating on the follow up, since I cannot matched up certain households baseline data with their follow up counterparts. The sample used in this analysis, comprises 394 households out of the 800 households for which we have both baseline and follow up data.

The control variables can be divided by individual characteristics and household characteristics. For the individual, I used the Age of child, *Gender* which takes the value of 1 if the child is a boy and zero otherwise. Finally, *School shoes* is a dummy variable that takes the value of 1 if the child has received school shoes in the current school year and takes the value of 0 if he or she has not received school shoes. This variable is of great importance since it proxies for an incentives program launched by the Minister of Education called Paquetes Escolares in which they distribute packages that include medicine, uniforms, school supplies and shoes, to children in public school across the country in order to increase school attendance.

For household characteristics, I used *Agriculture* which is a dummy variable that takes the value of 1 if the primary economic activity of the head of household is agriculture and takes the value of zero otherwise. *Parents education* controls for the education of the parents, measuring the years of schooling parents received. In order to account for the wealth of the family, I included a dummy variable *Electricity*, that takes the value of 1 if the family has electricity in their homes and zero otherwise. Lastly, I control for the number of siblings, excluding children *i* by using *Number of siblings*. In addition to the individual and household controls, I included a school break variable, which takes the value of 1 for those observation on the follow up period that were survey during the school break. This is importance since children were out of school between November 21st to January 21st and therefore modifies their time allocation among the different activities.

3.4 Model

So as to understand the effects that TOMS shoes donations have on time allocation among children, I will look at the difference that exist among treated and controlled communities at baseline and follow up periods as follow:

$$Impact\ of\ Shoes = (Treatment - Control)_{Follow-up} - (Treatment - Control)_{Baseline}$$

In which the impact of the shoes can be seen as the difference between treatment and control group between baseline and follow up periods. In order to estimate this difference I use the following equation:

$$Activity_{ijt} = \beta_0 + \beta_1 Treatment + \beta_2 Follow.up + \beta_3 Treatment * Follow.up + Controls'\beta + \varepsilon_{it}$$

Where $Activity_{ijt}$ measures the amount of time (hours) spent performing a specific activity by individual *i*, for Activity *j*, in time *t* .*Treatment* is an indicator of whether the child lives in a treated community, *Follow.up* denotes an observation from the follow-up period (instead of the baseline data). The *Treatment*Follow.up* variable is an interaction term which captures the impact of the donation by measuring individuals on the treatment group at the follow up period giving the overall difference presented $\beta_3 = Impact\ of\ shoes$. $Controls$ are control variables that describe the individual and household characteristics that the literature has indicated to be determinants of time allocation (age, education, gender, economic activity of the parents, number of siblings). Finally, $\varepsilon_{it}$is the error term.

From this model, I hypothesize that

$H_0 : \beta_3 = 0$ is not significantly different from zero and therefore, being part of the treatment group, and thus receiving TOMS shoes at baseline, does not have any effect on the time spent on activities performed by children.

$H_1 : \beta_3 \neq 0$ is significantly different from zero and therefore, being part of the treatment group has a significant effect on the time spent on activities performed by children.

3.5 Seemingly Unrelated Regressions

The form of my equation model follows a difference-in-difference approach since I obtained information from both baseline as well as follow-up periods for every individual in both treatment and control groups. In this research, it is not possible to test for the common trend assumption necessary for a difference-in-difference estimation since I only count with observations from 2 periods in my data set. However, indirect evidence in the form of a placebo regression can be found in Table B which gives some support to this assumption. I regress my main explanatory variables in a different outcome that cannot be affected by treatment status. For this matter, I used information on whether or not the child has suffered from asthma in the last 6 months. As shown in the table, our variable of interest *Treatment*Follow.up* is not significant at any level and under any specifications. We can conclude from this placebo test, that both groups were similar prior distribution of shoes, and that any outcome obtained can be assign to the randomization of shoes.

What is particular about this study is that I am jointly estimating 4 different equations for each individual. I make use of Seemingly Unrelated Regression (SUR) methodology in order to account for the correlation that exists between these different equations. Due to the nature of the dependent variable, different activities performed in a 24 hour period, the errors from the different equation might be correlated among each other and an approach that accounts for this would yield more efficient estimates than those obtained by an individual equation by equation approach. Zellner (1982) proposed a method of jointly estimating different equations in which the error terms from one is taken into account when estimating the other equation. If this correlation is not significant, Seemingly Unrelated Regression estimation would yield the same results as those obtained from separately estimating each individual activity.

The efficiency gain from this method as opposed to an equation-by-equation estimation of each of the activity groups lies on the assumptions made on the estimation of the coefficients. In the equation-by-equation case, this estimation assumes that zero restrictions from the coefficients of other equations. However, in the case of Seemingly Unrelated Regression, takes into account the disturbance terms variances and covariance's based on the residuals from other equations to construct the coefficients for each equation. Kakwani (1967) and Bartels et al. (1991) show how the estimators obtained from SUR are unbiased for a 2 equation situation as well as multiple-equation model.

4. Results

4.1 Summary Statistics

Table 1 presents the summary statistics for the 392 children part of the sample used in this study. From the total, 193 are part of the control group while the remaining 199 are part of the treatment group. Ages of participants range from 6 to 12 years, with an average of 9.6 years. 46% of children in our sample are girls, while boys comprise the remaining 54%. Children participating in this study have approximately 3 siblings with a maximum of 8 siblings. 33% of the children have electricity in their homes, and 66% of subjects have received school shoes as part of the "Paquetes Escolares" program.

Table 2 presents a simple mean comparison between the time spent on each of the 4 activity groups between treatment and control groups at both baseline and follow up period. At

baseline, Schooling and Labor times are not significantly different from each other, whereas for Labor they are different at the 10% level and for other they are significantly different from each other at the 5% level. However, this difference changes for the follow up period. As we can see, group activity *School*, *Labor* and *Recreation* are significantly different from each other. Both *Labor* and *Recreation* show how those children part of treatment group have a higher, significant mean than those part of the Control group. However, for Schooling those part of the control group have a higher, significant mean than those part of the treatment group.

4.2 Seemingly Unrelated Regression Results

Using the specification presented in the Model section, we obtained the Table 3 results. The coefficients obtained with this estimation are similar to those obtained in an individual estimation of each equation[1], the only difference has to do with the change in the standard errors. The gain from using this method compared to a simple difference-in-difference approach is that it takes into account the correlation that exist between the dependent variables and gives better estimates for the standard errors. While comparing these results to the standard errors form an individual difference-in-difference model, we can see that overall they are smaller, but maintain the same significance levels across the different coefficients.

The impact variable $Treatment * Follow.up$ is significant for School and for Other activity groups. The difference of the treatment group between follow up and baseline against the difference of the control group between follow up and baseline is significant at the 5% level. Being a shoe recipient decreases the amount of time spent on school activities by 0.657 hours while it increases the amount of other activities by 0.663 hours. The treatment variable, which measures the difference between treatment and control groups at baseline, seems to be only significant for Labor and Other activity group, similar to the mean difference seen in the summary statistics table. For Labor, being part of the treatment group increase time spent on labor by 0.371 hours per day, significant at the 10% level. For Other type of activities, being part of the treatment group at baseline reduces time by 0.766 hours per day, significant at the 1% level. The follow up variable, which measures the difference between follow up and baseline periods for the control group shows significant coefficients for School and Recreation group activities. At the follow up periods, those part of the control group reduced the time spent on

[1] See table 5 for individual equation results.

schooling by 1.225 hours per day while it increases time spent on recreation activities by 0.870 hours per day. Both of these results are significant at the 1% level.

For the control variables included in the model, we can see that age is significant for Labor, Recreation and Other activity groups. It increases time spent performing some type of labor by 0.28 hours and decreases recreation activities by 0.26 hours, both significant at the 1% level. Shoes donated by the school are significant for all 4 activity groups. For children who received shoes in the current school year as part of the Paquetes Escolares program, saw their time spent on Schooling activities increased by 1.66 hours, while time spent on Labor, Recreation and Other activities decreased by 0.63, 0.55 and 0.44 hours respectively, all significant at the 1% level.

I performed a Breusch-Pagan test in order to check if the coefficients estimated under the assumption of autocorrelation between the error terms across equations are significantly different than those obtained from running a simple Difference in Difference model. The results presented in table 4 show that the correlation between the error terms is significantly different than zero; therefore we can conclude that the use of SUR is preferable over a difference in difference approach, since it gives efficiency gains by accounting for the correlation between the dependent variables to the estimation than when regressing every equation individual.

4.3 Robustness check

As a robustness check, I decided to perform an individual difference-in-difference estimation with fixed effects at the ADP level and a Tobit regression in the 4 grouped activities. The reason why I use fixed effect estimation is because it can be the case that communities' part of a certain ADP might differ greatly from the communities' part of the other ADPs. In particular, I try to control for distance to school as I assume the distance doesn't varies much among communities but it does across ADPs. The intuition behind the use of the Tobit model can be exemplified by figure 2. The distribution of the Labor group seems censored on the left side, at the value of zero. The results from both the Fixed Effect Model as well as the Tobit regression censored from below (Lower Limit at zero) model can be seen in Table 7. The coefficient for our variable of interest $Treatment * Follow.up$ remained fairly similar to those obtained in the Seemingly Unrelated Regression model. The actual values of the coefficients change slightly in the case of the Tobit model. It is important to note that the significance levels for all

of the coefficients did not change, and we also obtained greater standard errors than those obtained in the previous specifications. Overall, the effect of shoe donations holds for different specifications of the model.

One explanation why I obtained such results can be due to previous ownership of shoes, as shoe donations might impact those that have fewer shoes different than those who have more. In order to study this, I decided to separate my sample between those who have 1 pair of shoes or less and those who have more than 1 pair of shoes. The results of the impact variable can be seen in table 8. There is no significant impact for those individuals who have more than 1 pair of shoes already. However, for those who own 1 pair of less, TOMS Shoes donations significantly reduces the time spent on schooling activities by 1.31 hours per day while it significantly increases time spent on other activities by 1.24 hours per day. These subsample results show how TOMS Shoes donation impact groups differently and shows how the overall results are heavily driven by those who have 1 pair of shoes or less.

5. Concluding Remarks

What are the impacts of TOMS shoe donations in rural El Salvador? This study explores this question by analyzing data collected from a randomized control trial in different communities across El Salvador. By making use of Seemingly Unrelated Regression on a set of 4 different group activities I found that for those individual who received TOMS shoe as part of the treatment group reduce their time by 0.657 hours (approximately 36 minutes) while increase their time spent on other activities by approximately 0.663 hours per day. Does this means that TOMS Shoes bad? I will argue that this is not necessarily the case due to three main reasons. First, this analysis focused on the group that was intended to treat (ITT) and achieves this by pooling treated individual's results regardless of who actually used the shoes as opposed as who did not. Further research to estimate the Treatment on the treated (TOT) will be necessary in order to obtain the actual impact on those children who used the shoes. for the purpose of this study, I lacked accurate information on what type of shoe was used for each activity contained in the Time Use Diaries.

Second, like any other analysis, these results can only be applied to the specific case of El Salvador. The presence of other types of donations, school shoe donations as part of School Program in this case, might already be pulling the effect that TOMS Shoes might have

generated in the absence of other donations and active initiatives from the Minister of Education. Also, TOMS Shoes operates in different countries through multiples giving partners that work in different ways; therefore, these results can be dependent on the way World Vision operates in the country. Additionally, countries where TOMS Shoes operate differ greatly in culture and environment, two issues that could determine if these types of canvas shoes are useful. In this matter, further research that takes into account these would be necessary in order to understand the true impact that TOMS shoe donations have on children's time allocation.

Third, like any other study, this research has limitations. One pertains the issue of self-reporting data as oppose to other types. From the summary statistics from the sample, parent's completed years of education is fairly low, 1.5 years of schooling, which could greatly affect the way mothers filled out the information contained in the Time Use Diaries. Similarly, like I mentioned before, lack of accurate information on the type of shoes used while performing the difference activities makes it difficult to estimate the true impact of shoe donations for those individuals that actually used their shoes. Also, many of the households were surveyed during school break, which might bias the results. I account for this issue by including a dummy variable that captures this issue. However, a more reliable way to deal with this limitation will be to completely exclude those individuals surveyed during this period. Not one ADP was completely surveyed during school break; therefore such analysis will still comprise information from the four different areas in the country.

In conclusion, after obtaining data from a randomized distribution of TOMS Shoes in rural communities of El Salvador, I studied the effects of shoe distribution on time allocation among children age 6 to 12 years show how children that received shoes at baseline period reduced their time spent on school related activities by 0.657 hours per day, while increasing time spent on other activities by 0.663 hours per day. These results, robust to different specifications, highlight the importance of understanding the context under which donations of shoes are being made, in specific, the presence of other type of shoe donations.

Figure 1- ADP Locations

Table A - Activity Groups Variables

Activity Group	Activity- As it appears in TUD
School	Schooling, Doing Homework.
Labor	Household Work, Shopping, Other Work, Collecting Water, Collection Wood
Recreation	Playing, Watching T.V.
Other	Sleeping, Eating, Washing and Dressing, Going to Church.

Table B – Asthma Regression

Placebo Regression on outcome unrelated to Treatment
Indirect support for the Parallel Trends Assumption

VARIABLES	(1) OLS	(2) OLS	(3) F.E.	(4) Probit
Follow up & Treatment	**0.000**	**-0.000**	**-0.000**	**0.007**
	(0.032)	**(0.031)**	**(0.031)**	**(0.318)**
Treatment	-0.002	-0.006	-0.011	-0.077
	(0.022)	(0.023)	(0.022)	(0.229)
Follow up	-0.000	0.006	0.001	0.054
	(0.022)	(0.025)	(0.026)	(0.254)
Age		-0.014***	-0.014***	-0.129***
		(0.005)	(0.005)	(0.048)
Gender		0.045***	0.044***	0.475***
		(0.016)	(0.016)	(0.171)
School Shoes		0.044**	0.013	0.511**
		(0.018)	(0.022)	(0.210)
Agriculture		0.036*	0.016	0.451*
		(0.019)	(0.020)	(0.241)
Parent's years of Education		-0.002	-0.001	-0.028
		(0.007)	(0.007)	(0.080)
Number of Siblings		-0.002	-0.001	-0.028
		(0.006)	(0.006)	(0.061)
School Break (Nov 19th - Jan 21st)		-0.011	-0.003	-0.104
		(0.023)	(0.029)	(0.234)
Constant	0.052***	0.113**	0.151***	-1.343**
	(0.016)	(0.053)	(0.055)	(0.567)
Observations	784	784	784	784
R-squared	0.000	0.035	0.024	
Number of ADP			4	

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Summary Statistics Tables

Table 1 - Summary Statistics

Variable	Mean	Std. Dev.	Min	Max	T-Test
Age of Child	9.538	1.685	6	12	(T= C)
Gender					
Girls (0)	46.18%	0.499	0	1	(T= C)
Boys (1)	53.82%				
Parents' years of education	1.530	1.159	0	6	(T= C)
Number of Siblings	2.156	1.552	0	8	(T ≠C)*
Electricity					
No (0)	67.09%	0.470	0	1	(T≠ C)**
Yes (1)	32.91%				
School Shoes					
No (0)	33.76%	0.473	0	1	(T≠ C)*
Yes (1)	66.24%				
More than 1 pair of Shoes					
No (0)	38.52%	0.48695	0	1	(T= C)
Yes (1)	61.48%				
Total		**392**			

Table 2 – Mean difference in activity groups

Activity	Treatment		Control		T-test
	Mean	S.D	Mean	S.D	
BASELINE					
Schooling	5.198	0.136	5.384	0.1228	(C=T)
Labor	2.249	0.1126	1.917	0.1311	(C≠T)*
Playing time	3.366	0.1626	3.121	0.1322	(C=T)
Other	12.881	0.1822	13.494	0.1821	(C≠T)**
FOLLOW UP					
Schooling	1.739	0.1737	2.565	0.2048	(C>T)***
Labor	3.085	0.155	2.771	0.1679	(C<T)*
Playing time	4.651	0.1657	4.307	0.1807	(C<T)*
Other	14.501	0.1108	14.248	1.5972	(C=T)
Total	199		193		

Table 3 - Seemingly Unrelated Regression Results

VARIABLES	(1) School	(2) Labor	(3) Recreation	(4) Other
Follow up & Treatment	**-0.657****	**-0.012**	**0.310**	**0.663*****
	(0.275)	**(0.266)**	**(0.305)**	**(0.242)**
Treatment	0.004	0.371*	0.172	-0.766***
	(0.199)	(0.193)	(0.221)	(0.175)
Follow up	-1.225***	0.159	0.870***	0.229
	(0.222)	(0.215)	(0.246)	(0.195)
Age	0.055	0.283***	-0.263***	-0.061*
	(0.041)	(0.040)	(0.046)	(0.036)
Gender	-0.055	-0.242*	0.355**	-0.061
	(0.139)	(0.135)	(0.154)	(0.122)
School Shoes	1.659***	-0.630***	-0.547***	-0.437***
	(0.159)	(0.153)	(0.176)	(0.139)
Agriculture	0.124	-0.058	-0.337*	0.324**
	(0.170)	(0.165)	(0.188)	(0.149)
Parent's years of Education	-0.096	0.044	0.244***	-0.215***
	(0.065)	(0.063)	(0.072)	(0.057)
Number of Siblings	-0.029	0.097**	0.088	-0.157***
	(0.050)	(0.048)	(0.055)	(0.044)
Electricity	-0.138	0.167	-0.563***	0.481***
	(0.152)	(0.146)	(0.167)	(0.132)
School Break (Nov 19th - Jan 21st)	-3.172***	1.385***	1.314***	0.358**
	(0.206)	(0.199)	(0.228)	(0.181)
Constant	3.811***	-0.486	5.527***	14.896***
	(0.474)	(0.458)	(0.525)	(0.416)
Observations	784	784	784	784
R-squared	0.518	0.172	0.226	0.103
Number of ADP				

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 4 - Test for Correlation between Equations

	School	Labor	Recreation	Other
School	1			
Labor	-0.4438	1		
Recreation	-0.3616	-0.3468	1	
Other	-0.1922	-0.1547	-0.4385	1

Breusch-Pagan test of independence : Chi2(6) = 549.699, Pr = 0.000

Table 5 – Individual Regression Results

VARIABLES	(1) School	(2) Labor	(3) Recreation	(4) Other
Follow up & Treatment	-0.657**	-0.012	0.310	0.663***
	(0.277)	(0.268)	(0.307)	(0.243)
Treatment	0.004	0.371*	0.172	-0.766***
	(0.201)	(0.194)	(0.222)	(0.176)
Follow up	-1.225***	0.159	0.870***	0.229
	(0.223)	(0.216)	(0.247)	(0.196)
Age	0.055	0.283***	-0.263***	-0.061*
	(0.042)	(0.040)	(0.046)	(0.037)
Gender	-0.055	-0.242*	0.355**	-0.061
	(0.140)	(0.136)	(0.155)	(0.123)
School Shoes	1.659***	-0.630***	-0.547***	-0.437***
	(0.160)	(0.155)	(0.177)	(0.140)
Agriculture	0.124	-0.058	-0.337*	0.324**
	(0.171)	(0.166)	(0.190)	(0.150)
Parent's years of Education	-0.096	0.044	0.244***	-0.215***
	(0.066)	(0.064)	(0.073)	(0.058)
Number of Siblings	-0.029	0.097**	0.088	-0.157***
	(0.050)	(0.049)	(0.056)	(0.044)
Electricity	-0.179	0.197	-0.545***	0.473***
	(0.151)	(0.146)	(0.168)	(0.133)
School Break (Nov 19th - Jan 21st)	-3.172***	1.385***	1.314***	0.358**
	(0.208)	(0.201)	(0.230)	(0.182)
Constant	3.811***	-0.486	5.527***	14.896***
	(0.477)	(0.461)	(0.528)	(0.419)
Observations	784	784	784	784
R-squared	0.518	0.172	0.226	0.103
Number of ADP				

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 6 - Difference in Difference with Fixed Effects Results

Fixed Effects at the ADP level (4)

VARIABLES	(1) School	(2) Labor	(3) Recreation	(4) Other
Follow up & Treatment	**-0.654****	**-0.014**	**0.306**	**0.666*****
	(0.268)	**(0.263)**	**(0.303)**	**(0.238)**
Treatment	-0.109	0.455**	0.189	-0.756***
	(0.195)	(0.191)	(0.220)	(0.173)
Follow up	-1.463***	0.330	1.258***	-0.029
	(0.229)	(0.224)	(0.259)	(0.203)
Age	0.041	0.291***	-0.251***	-0.064*
	(0.040)	(0.040)	(0.046)	(0.036)
Gender	-0.053	-0.219	0.363**	-0.101
	(0.136)	(0.133)	(0.154)	(0.121)
School Shoes	1.150***	-0.216	-0.649***	-0.295*
	(0.187)	(0.183)	(0.211)	(0.166)
Agriculture	-0.201	0.223	-0.336*	0.339**
	(0.176)	(0.173)	(0.199)	(0.156)
Parent's years of Education	-0.077	0.011	0.207***	-0.166***
	(0.064)	(0.063)	(0.073)	(0.057)
Number of Siblings	0.003	0.068	0.046	-0.123***
	(0.049)	(0.048)	(0.056)	(0.044)
Electricity	-0.132	0.226	-0.446***	0.311**
	(0.153)	(0.148)	(0.172)	(0.135)
School Break (Nov 19th - Jan 21st)	-2.699***	1.045***	0.543*	0.873***
	(0.251)	(0.246)	(0.284)	(0.223)
Constant	4.480***	-0.988**	5.609***	14.694***
	(0.477)	(0.467)	(0.540)	(0.424)
Observations	784	784	784	784
R-squared	0.489	0.152	0.205	0.107
Number of ADP	4	4	4	4

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Figure 2 - Histogram of Labor Group

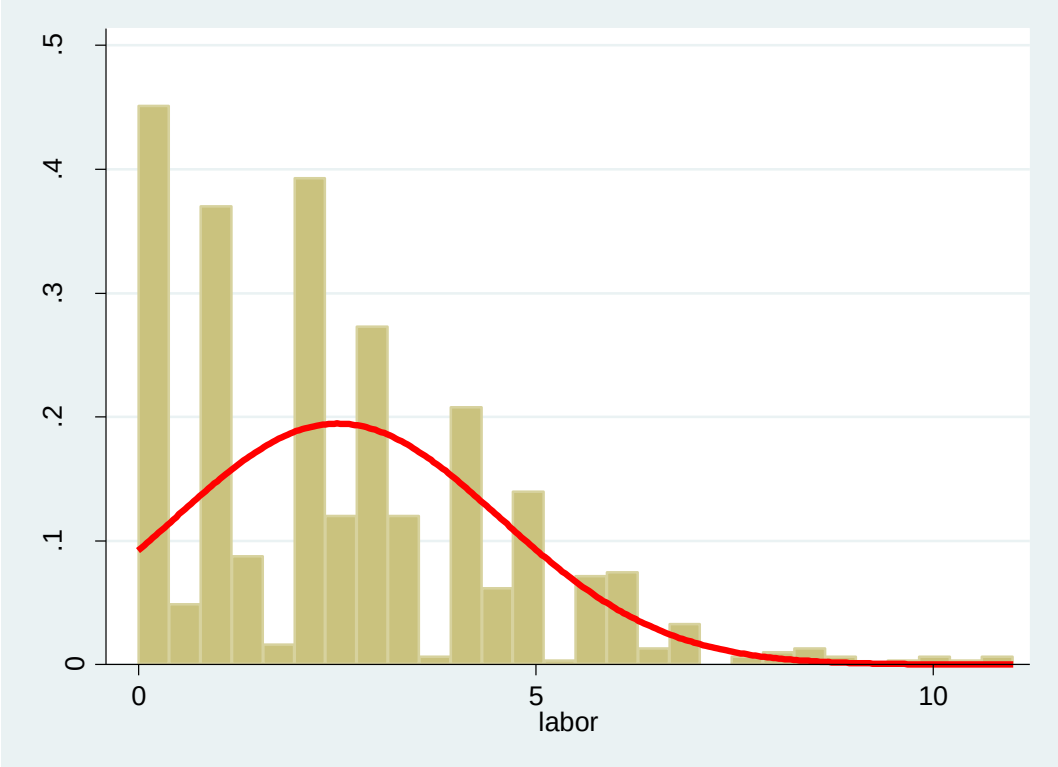

Table 7 - Tobit Results, Lower Limit at zero

VARIABLES	(1) School	(2) Labor	(3) Recreation	(4) Other
Follow up & Treatment	-0.873**	-0.075	0.307	0.663***
	(0.368)	(0.318)	(0.314)	(0.242)
Treatment	0.036	0.521**	0.192	-0.766***
	(0.254)	(0.231)	(0.228)	(0.175)
Follow up	-1.512***	0.066	0.875***	0.229
	(0.290)	(0.259)	(0.253)	(0.195)
Age	0.072	0.360***	-0.275***	-0.061*
	(0.055)	(0.048)	(0.047)	(0.036)
Gender	-0.151	-0.315*	0.386**	-0.061
	(0.185)	(0.161)	(0.159)	(0.122)
School Shoes	2.152***	-0.824***	-0.561***	-0.437***
	(0.215)	(0.183)	(0.181)	(0.139)
Agriculture	0.180	-0.060	-0.330*	0.324**
	(0.226)	(0.196)	(0.194)	(0.149)
Parent's years of Education	-0.074	0.055	0.251***	-0.215***
	(0.087)	(0.076)	(0.075)	(0.057)
Number of Siblings	-0.045	0.106*	0.088	-0.157***
	(0.067)	(0.057)	(0.057)	(0.044)
Electricity				
School Break (Nov 19th - Jan 21st)	-4.207***	1.732***	1.340***	0.358**
	(0.291)	(0.238)	(0.235)	(0.181)
Constant	3.274***	-1.424**	5.565***	14.896***
	(0.628)	(0.553)	(0.540)	(0.416)
Observations	784	784	784	784
R-squared				
Number of ADP				

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 2 - Shoe Ownership Results

Subsample Variable	(1) Schooling	(2) Labor	(3) Recreation	(4) Other
1 or less than 1 pair of shoes				
Follow up & Treatment	-1.310***	0.409	-0.077	1.214**
	(0.506)	(0.475)	(0.586)	(0.506)
More than 1 pair of shoes				
Follow up & Treatment	-0.293	-0.305	0.645*	0.297
	(0.408)	(0.349)	(0.373)	(0.250)

Same control as complete model - Seemingly Unrelated Regressions

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Appendix 1 - OLS Individual Activities

VARIABLES	(1) Escuela1	(2) tareas1	(3) Quehaceres1	(4) Compras1	(5) Trabajo1	(6) Agua1
Follow up & Treatment	**-0.425***	**-0.232****	**-0.186**	**-0.183**	**0.443*****	**0.026**
	(0.235)	**(0.109)**	**(0.160)**	**(0.128)**	**(0.164)**	**(0.070)**
Treatment	-0.090	0.094	-0.047	0.091	0.080	0.116**
	(0.170)	(0.079)	(0.115)	(0.093)	(0.119)	(0.050)
Follow up	-0.913***	-0.312***	0.236*	0.174*	-0.035	-0.135**
	(0.189)	(0.088)	(0.129)	(0.103)	(0.132)	(0.056)
Age	0.064*	-0.008	0.166***	0.016	0.074***	0.012
	(0.035)	(0.016)	(0.024)	(0.019)	(0.025)	(0.010)
Gender	0.160	-0.215***	-0.578***	-0.067	0.204**	0.050
	(0.119)	(0.055)	(0.081)	(0.065)	(0.083)	(0.035)
School Shoes	1.508***	0.150**	-0.209**	-0.134*	-0.201**	-0.044
	(0.135)	(0.063)	(0.092)	(0.074)	(0.095)	(0.040)
Agriculture	0.164	-0.040	0.069	-0.052	-0.090	0.006
	(0.145)	(0.067)	(0.099)	(0.079)	(0.102)	(0.043)
Parent's years of Education	-0.076	-0.021	0.005	0.054*	-0.049	0.010
	(0.056)	(0.026)	(0.038)	(0.030)	(0.039)	(0.017)
Number of Siblings	-0.027	-0.002	-0.021	0.017	0.041	0.042***
	(0.043)	(0.020)	(0.029)	(0.023)	(0.030)	(0.013)
School Break (Nov 19th - Jan 21st)	-2.997***	-0.175**	0.376***	0.269***	0.095	0.349***
	(0.175)	(0.082)	(0.119)	(0.096)	(0.123)	(0.052)
Constant	2.678***	1.133***	-0.370	0.139	-0.117	-0.051
	(0.403)	(0.187)	(0.274)	(0.220)	(0.283)	(0.120)
Observations	784	784	784	784	784	784
R-squared	0.534	0.135	0.147	0.035	0.065	0.098
Number of ADP						

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Appendix 2 - OLS Indivual Activities Results

VARIABLES	(7) lena1	(8) jugar1	(9) otros1	(10) iglesia1	(11) Dormir1	(12) Comer1	(13) LP1
Follow up & Treatment	**-0.112**	**0.067**	**0.177**	**0.066**	**0.385***	**0.314*****	**-0.036**
	(0.075)	**(0.220)**	**(0.235)**	**(0.118)**	**(0.205)**	**(0.096)**	**(0.087)**
Treatment	0.131**	-0.187	0.231	0.128	-0.621***	-0.159**	0.014
	(0.054)	(0.159)	(0.170)	(0.085)	(0.148)	(0.070)	(0.063)
Follow up	-0.082	0.522***	0.269	0.079	0.217	0.102	-0.089
	(0.060)	(0.177)	(0.190)	(0.095)	(0.165)	(0.077)	(0.070)
Age	0.015	-0.274***	0.019	-0.009	-0.072**	-0.012	0.024*
	(0.011)	(0.033)	(0.035)	(0.018)	(0.031)	(0.014)	(0.013)
Gender	0.148***	0.403***	0.080	-0.128**	-0.023	0.009	-0.046
	(0.038)	(0.111)	(0.119)	(0.059)	(0.104)	(0.049)	(0.044)
School Shoes	-0.041	-0.574***	0.120	-0.094	-0.337***	-0.200***	0.100**
	(0.043)	(0.127)	(0.136)	(0.068)	(0.118)	(0.055)	(0.050)
Agriculture	0.009	-0.089	-0.185	-0.062	0.092	0.055	0.177***
	(0.046)	(0.136)	(0.145)	(0.073)	(0.127)	(0.059)	(0.054)
Parent's years of Education	0.024	0.141***	0.119**	-0.016	-0.202***	-0.034	0.021
	(0.018)	(0.052)	(0.056)	(0.028)	(0.049)	(0.023)	(0.021)
Number of Siblings	0.018	0.059	0.049	-0.019	-0.104***	-0.033*	-0.020
	(0.014)	(0.040)	(0.043)	(0.021)	(0.037)	(0.017)	(0.016)
School Break (Nov 19th - Jan 21st)	0.297***	0.640***	0.531***	0.142	0.172	0.131*	0.055
	(0.056)	(0.165)	(0.176)	(0.088)	(0.153)	(0.072)	(0.065)
Constant	-0.088	4.308***	0.688*	0.531***	12.117***	2.374***	0.405***
	(0.128)	(0.379)	(0.405)	(0.202)	(0.352)	(0.165)	(0.149)
Observations	784	784	784	784	784	784	784
R-squared	0.068	0.200	0.065	0.036	0.089	0.092	0.042
Number of ADP							

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

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