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Eliminating Child Labour in El Salvador through Economic Empowerment and Social Inclusion:

Impact evaluation report

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As part of broader efforts towards durable solutions to child labor, the International Labour Organization (ILO), the United Nations Children's Fund (UNICEF), and the World Bank initiated the interagency Understanding Children's Work (UCW) Programme in December 2000. The Programme is guided by the Roadmap adopted at The Hague Global Child Labour Conference 2010, which laid out the priorities for the international community in the fight against child labor. Through a variety of data collection, research, and assessment activities, the UCW Programme is broadly directed toward improving understanding of child labor, its causes and effects, how it can be measured, and effective policies for addressing it. For further information, see the project website at www.ucw-project.org.

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This paper is part of the research carried out within UCW (Understanding Children's Work), a joint ILO, World Bank and UNICEF Programme. This report does not necessarily reflect the views or policies of the United States Department of Labor. The mention of trade names, commercial products and organizations does not imply endorsement by the United States Government.

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1. INTRODUCTION

The ILO project entitled "Eliminating Child Labour in El Salvador through Economic Empowerment and Social Inclusion" was aimed at helping to eradicate child labour in El Salvador. The project supported a large range of interventions at three levels: *macro* (national policies and institutional framework), *meso* (target municipalities and schools) and *micro* (child labourers' households).

One set of household-level interventions, implemented in five municipalities in El Salvador, is the object of the impact evaluation discussed here. The impact evaluation is one of the first to identify the causal effect of an IPEC project using a quasi-experimental approach with a valid counterfactual.

As described in more detail below, the targeted set of interventions consisted of support to mothers of child labourers to start a small enterprise as well as of so-called "flexible education interventions" to help their children return to school at the appropriate level in case they have dropped out.

Similar sets of household-level livelihood and social mobility interventions can be found in other IPEC-supported country-level projects and USDOL programmes in a number of countries. By identifying the causal effect of this set of interventions, therefore, the impact evaluation provides a unique insight into the functioning and effectiveness of one important dimension of IPEC's and USDOL's broader approach to addressing child labour.

In April 2012, UCW (in collaboration with the ILO El Salvador) drafted an impact evaluation design (UCW 2012; attached as Appendix 4 to this Report). As part of this design, UCW proposed to allocate the set of interventions to eligible households on the basis of a wealth index. This procedure ensures a fair distribution of the interventions to those households who are most in need. At the same time, as explained in UCW (2012), this allocation procedure can be exploited in a regression discontinuity framework to identify the causal effect of the set of interventions on outcomes of interest, such as education, child labour, participation in work of adult household members, and multiple other wellbeing indicators.

The ILO conducted a baseline survey in the five municipalities in April and May of 2012. Subsequently, UCW (again in collaboration with the ILO in El Salvador)

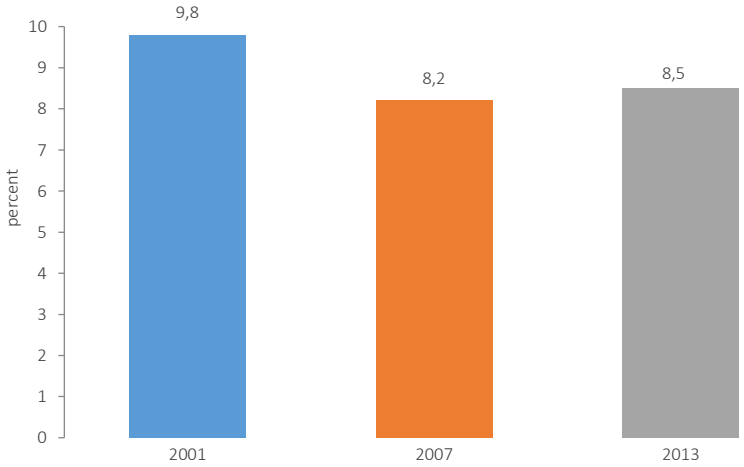
used these data to generate the wealth index utilized to assign the intervention. This process is described in more detail in the baseline survey report released in 2013 (UCW 2013; attached as Appendix 5 to this Report). The follow-up survey was undertaken in July and August of 2015.

The current Report discusses the results of the follow-up survey and of the impact evaluation more broadly. It is structured as follows. Following this introduction, Section 2 provides a brief background overview of the child labour situation in El Salvador and how it has changed over time. Section 3 briefly discusses the project at large, the interventions selected for the impact evaluation and the underlying theory of change. Section 4 explains the selection process and the evaluation strategy. Section 5 looks at project implementation, and specifically at intervention take-up, services provided and the timing of implementation. Section 6 describes data collection and Section 7 addresses the issue of sample attrition between the baseline and follow-up surveys. Section 8 describes the methodology for the impact evaluation. Section 9 discusses the results.

2. CHILD LABOUR IN EL SALVADOR

Child labour remains an important policy concern in El Salvador. Estimates based on the 2013 *Encuesta Nacional de Hogares de Propositòs Múltiples* (EHPM, 2013) show that 8.5% of all 5-17 year-olds, 144,200 children in absolute terms, are engaged in child labour. By age range, child labour affects almost six percent of children aged 5-14 years and 16% of adolescents aged 15-17 years. A comparison with estimates based on the 2001 and 2007 rounds of the same survey suggests that progress against child labour over the last 12 years has been limited and uneven. As illustrated Figure 1, there was a decline from 9.8% in 2001 to 8.5% in 2013, but this overall decline masked a slight rise in child labour from 2007 to 2013.

Figure 1. **Percentage of children in child labour, 5-17 years age range, 2001, 2007 and 2013**



Source: UCW calculations based on El Salvador Encuesta Nacional de Hogares de Propositòs Múltiples, 2001, 2007, and 2013.

The child labour population in El Salvador is male-dominated and concentrated in rural locations. The share of boys in child labourers (13%) is more than three times that of girls (4%), while child labour incidence in rural areas (12%) is more than twice as high as incidence in urban areas. Over half of all working children are found in the agriculture sector; the commerce and services sectors account for most of the remainder. The majority of children's jobs are characterised by informal, non-remunerated work arrangements, and are typically undertaken within the family unit.

Much of the work performed by children is hazardous in nature, adding to the urgency of elimination efforts. For the 5-14 years age group, three of five child labourers are found in hazardous sectors or occupations or are working excessive hours. Examples of work in which dangers are encountered include cutting of sugar

cane, fishing (particularly mollusc extraction), harvesting coffee and street vending. Excessive hours, heavy loads, exposure to the elements and a lack of protective gear are among the aggravating factors. Additional forms of hazardous child labour in which a lesser number of children are involved include recycling of garbage, fireworks production and domestic work in third-party households.

Table 1 reports the incidence of children's employment and child labour for the full sample (i.e. for both the treatment and control group) of households considered in this study. As it is easy to see, the incidence of child labour in the targeted households is much higher than the national average.

Table 1. **Follow-up survey, children's employment and child labour, full sample of children aged 5-17 years**

	Frequency	Percent
Employment	658	21.4
Child labour	622	20.3
Total	3,081	

3. PROJECT DESCRIPTION

Overall project

The ILO project entitled "Eliminating Child Labour in El Salvador through Economic Empowerment and Social Inclusion" attempts to eradicate child labour in El Salvador. To achieve this goal, the project set the following six objectives:

1) By the end of the project, child labour elimination strategies will have been adopted by national and local institutions that implement poverty reduction, decent work, and social protection programs for the rural and urban poor;

2) By the end of the project, child labour law enforcement and protection mechanisms, particularly for the worst forms of child labour, will be developed and fully operational;

3) By the end of the project, national capacity to conduct child labour research, monitoring and impact evaluation will be enhanced and pilot interventions documented;

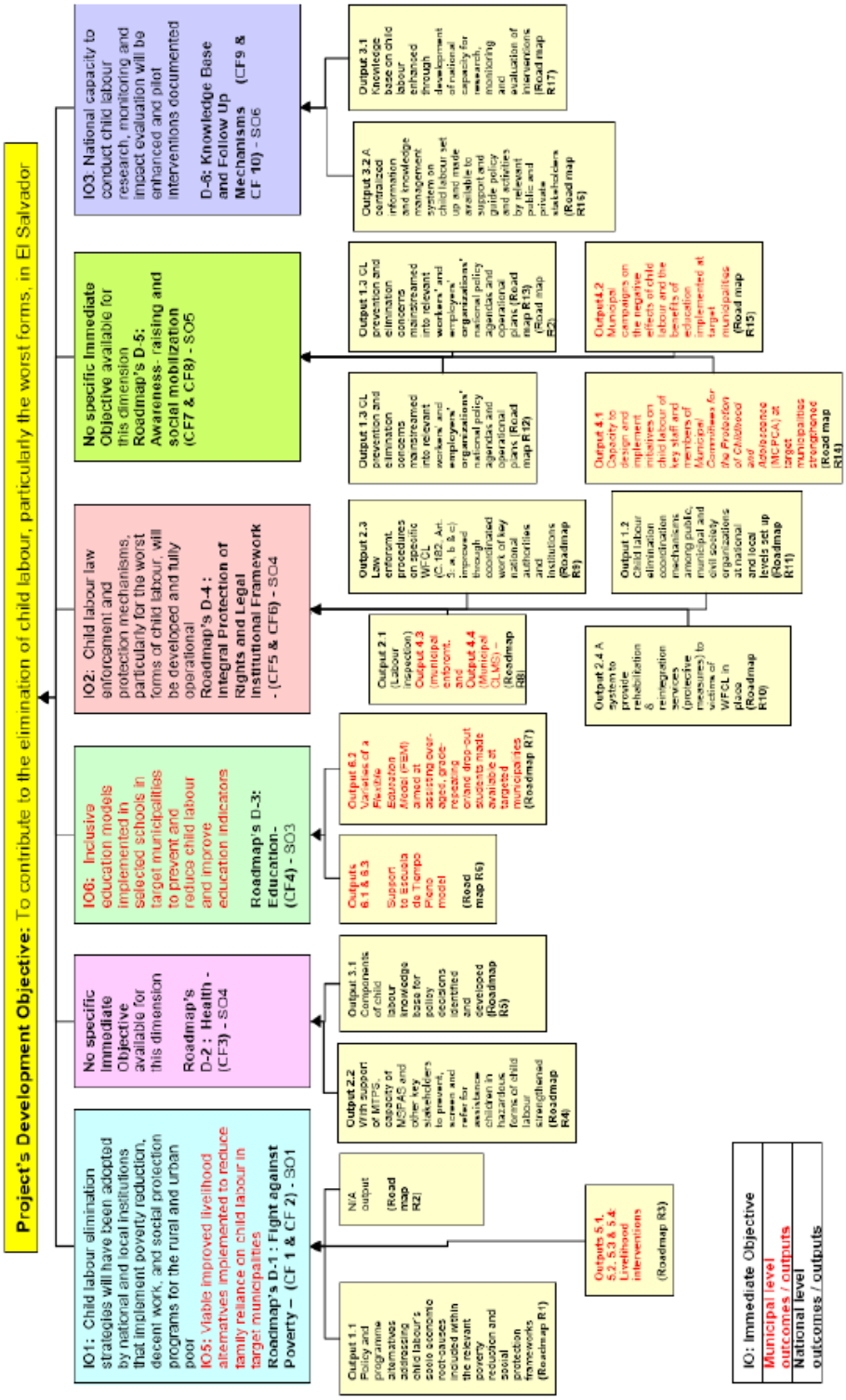
4) By the end of the project, municipal capacity to prevent and eliminate child labour, in particular the worst forms, will have been strengthened;

5) By the end of the project, viable improved livelihood alternatives will have been implemented to reduce family reliance on child labour in target municipalities; and

6) By the end of the project, inclusive education models will have been implemented in selected schools in target municipalities to prevent and reduce child labour and improve education indicators.

Figure 2 provides a bird's eye view of the project's strategic framework and of how the project's six strategic objectives tie in with El Salvador's wider national strategic agenda to eradicate child labour. As shown, the project involves support to a large number of outcomes and associated interventions in order to achieve the six strategic objectives. Some of these interventions are implemented at the national level, some in selected municipalities, some in selected schools, and some are targeted at selected households.

Figure 2. **Strategic framework for the project "Eliminating Child Labour in El Salvador through Economic Empowerment and Social Inclusion"**



Interventions selected for the impact evaluation

Given the complexity of the project and its multilevel structure, it was decided to limit the focus of the impact evaluation to a subset of interventions at the household level, selected in consultation with the Government of El Salvador and the US Department of Labor. This set consisted of the following two components:

1) A support package offered to help the mothers of child labourers start a small enterprise. This support consists of three steps: vocational training of choice;[2] business training and preparation of a business plan; and a starting kit based on the needs identified in the business plan to kick-start the enterprise (value between US$ 100 and US$ 300).

2) If the children living in the households of the eligible women were not attending school according to the baseline information, then they are offered training to help them enter school at the appropriate level for their age. Children are invited to participate in this intervention by means of a sensitization campaign.[3]

However, as discussed below, only a minority of children took up the second component and therefore the impact we attempt to measure here is mainly relative to the support package for mothers.

Similar sets of livelihood and social mobility interventions can be found in other IPEC country-level projects and USDOL programmes in a number of countries, and therefore their impact on child labour is also of a broader interest.

Theory of change

Broadly speaking, the program considered here belongs to a set of interventions that aim to increase productive employment opportunities for the rural poor in low- and lower middle-income countries, and are widely implemented around the world

[2] In each canton a limited number of vocational training courses is offered in areas such as e.g. baking bread, sewing clothes etc. The courses on offer are determined on the basis of an analysis of the local labour market.

[3] Out of school children are not obliged to participate and the mother's participation in the vocational training does not depend on the participation of the child.

(Cho and Honorati, 2014; Banerjee et al., 2015). These programs typically address household capital or skills constraints that can limit the possibility of poor households to cover setup costs and develop potentially profitable farm and non-farm economic activities (Eswaran and Kotwal, 1986). Some programs are targeted explicitly to women, as women are more likely than men to face obstacles in accessing credit and labour markets. In the case of the program considered here, the anticipated improvement in the livelihood of the household is expected also to have a positive effect on the investment in children's human capital.

As discussed in DE Hoop and Rosati (20139, on which this section draws, evidence of the impact of providing physical capital and skills training on children's time use is scarce and results are varied. Banerjee et al. (2011) find limited effects of the Indian THP (Targeting the Hard-core Poor) program on children's school attendance and labour supply. Bandiera et al. (2013), however, find that a similar program in Bangladesh increased children's work in self-employment. Karlan and Valdivia (2011) find that business training in Peru lowered children's participation in work and increased their participation in school, although these effects are not statistically significant.

Del Carpio and Loayza (2012) study the effects of a conditional cash transfer program complemented with a productive investment grant in Nicaragua. Their study focuses on a different program than the one we analyse in this paper, as well as on a different (although not very dissimilar) region. The authors show that the intervention contributed to reduce overall child participation in household chores and agricultural work, but increased child participation in commerce and retail. This is consistent with results in Del Carpio and Macours (2010) on the same intervention, which indicate that the productive investment grant added to a cash transfer reinforced existing specialization in non-agricultural activities and domestic work for girls, but that overall child labour did not increase.

Most recently, De Hoop and Rosati (2015) analysed the impact on education and child labour of a program aimed at increasing women economic participation in Nicaragua. The results point to the importance of women's empowerment in determining the impact of the program on child labour and children's schooling.

The project considered here should result in new economic opportunities for participating women, in turn influencing decisions concerning children's work and schooling through three basic channels.

First, the increased income available to the household through women's new economic opportunities should make the households less reliant on the income and productivity of their child members, and leave them in a better position to afford the direct and indirect costs of their children's schooling.

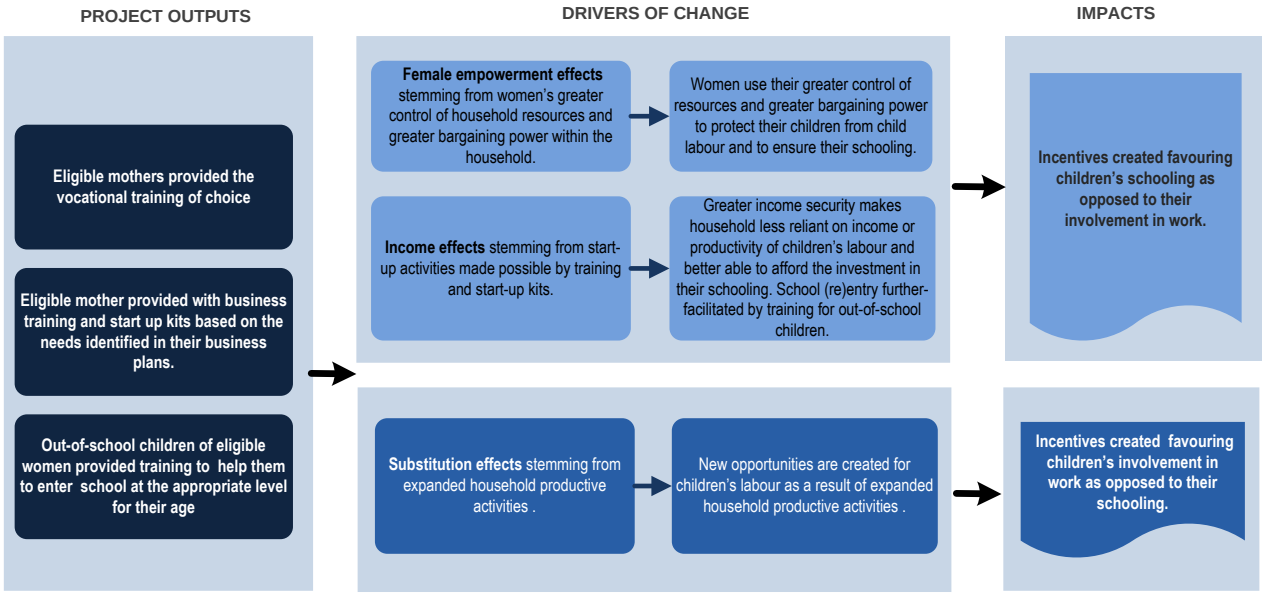
The second channel relates to women's empowerment. The new income opportunities resulting from the training and start-up support are likely to increase women's control of household resources and their bargaining power within the household. Insofar as women attribute more importance than men to children's education, the increased women empowerment generated by the project should contribute to the reduction of child labour and to the increase of school attendance.

The third channel relates to the impact of expanded household business activities in possibly *increasing* children's work: household business activities may increase children's productivity in economic activities or lead to children substituting adults in performing household chores. As long as capital and children's work are gross substitutes, the increased economic activity at the household level is likely to increase the household benefits of children's work or of children's performance of household chores instead of adults.

This third impact channel could limit or counterbalance the positive effects of the project on child labour and education: we cannot, therefore, discount *a priori* the possibility that new production opportunities will also create new work opportunities for children.

However, as the female beneficiaries are drawn from poorest households, where the income effect of new productive opportunities is likely to be greatest, it is reasonable to think that the net impact of the project will be a reduction in child labour and an increase in schooling. The positive change will be supported by training to out-of-school children aimed at facilitating their school (re-)entry. The theory of change is depicted in very basic terms in Figure 3 below.

Figure 3. **Theory of change**



4. EVALUATING THE IMPACT OF THE HOUSEHOLD LEVEL INTERVENTIONS

Selection of the communities and beneficiaries

The project team started by selecting a group of 10 municipalities to participate in the interventions. In order to select these municipalities, the project team first produced a shortlist. To appear on the shortlist, municipalities had to:

- Have a high child labour rate. In order to determine child labour rates, the project team used the 2009 school census which contains information on participation in employment for all children attending school (either basic education, "bachillerato general" or "bachillerato técnico").[4] Municipalities in which involvement in employment among children in school exceeded 6.2% were considered to be municipalities with a high child labour rate.
- Be reasonably safe to ensure that it is possible to implement the necessary fieldwork. Municipalities were considered to be safe if they had a homicide and extortion rate of 128 per 100,000 inhabitants or lower according to the national police.
- Have more than 19,000 inhabitants to make certain that an overall target of 5,000 households with child labourers could be reached by all household level interventions.

A shortlist of 21 municipalities resulted from the application of these criteria, from which a total of five municipalities (i.e., Izalco, San Luiz Herradura, Santiago Nonualco, Tacuba, Tecoluca) within reasonable geographic proximity of each other were eventually selected by the project team for participation in the interventions that were subject of the current impact evaluation.

In order to ensure that the impact evaluation did not capture the effects of other interventions included in the overall project, only the interventions that were the

[4] Basic education in El Salvador consists of 9 years of education divided into 3 cycles of 3 years each. Pupils are supposed to enter basic education when they are 6 years old and finish when they are 15 years old. Basic education is followed by a 2 year "bachillerato" degree.

focus of the impact evaluation were implemented in the selected 10 municipalities.

Table 2 provides an overview of the children's involvement in employment, total population and the crime rate (homicide and extortion per 100,000 inhabitants) in the five municipalities.

Table 2. **Basic information on selected municipalities**

Municipality	Urban or rural	Children's employment (%)[(a)]	Population[(b)]	Crime rate[(c)]
Tacuba	Rural	15.4	30,718	68
Izalco	Urban	8.4	74,085	115
San Luis la Herradura	Rural	7.9	21,388	122
Tecoluca	Rural	7.9	25,344	55
Santiago Nonualco	Rural	6.3	41,287	63

Notes: (a) Children's employment is the percentage of working children identified in the 2010 school census; (b) Population estimates based on 2007 population census; and (c) Crime rates (homicide and extortion per 100,000) based on 2010 national police statistics.

Within each of the selected *municipalities*, a group of cantons was selected into the project. The selection of cantons took place on the basis of the information available from the 2010 school census and the 2007 population census. Cantons were selected if they had high numbers of child labourers according to the school census and had high child labour ratios.[5] However, explicit thresholds for the selection cantons were not established. In total, the project team selected 37 cantons across the five municipalities.

Within each of the selected *cantons*, eligible households were identified on the basis of the data collected at baseline. Baseline data collection consisted of two parts: (1) a short listing questionnaire administered to all households in 37 cantons, and (2) a more in-depth baseline questionnaire administered to all households identified as having working children in the listing exercise. The project team succeeded in tracking and administering the in-depth baseline questionnaire to 3,064 (93%) of the 3,294 households with working children identified in the short listing.

[5] As suggested by the number of child labourers in the school census divided by the total canton population according to the 2007 census.

Households were defined as being *eligible* for participation if (1) they had one or more working child aged 5-17 years and (2) they had one or more literate woman aged 18 to 65 years that was not employed as a salaried worker. Of the 3,064 households with working children interviewed at baseline, 2,098 (68%) had a mother or another woman who was eligible according to these criteria.

The beneficiary households were selected out of the eligible households on the basis of a wealth index constructed using information provided by households during baseline data collection (see UCW 2012 and UCW 2013 for details). The poorest 1,098 households (i.e., the 1,098 households with the lowest wealth index) were selected in to the program, while the remaining 1,000 households served as the control group. Note that the selection on the basis of a wealth index not only ensured a fair distribution of the interventions to those households that were most in need, but also ensured that the causal effect of the set of interventions could be identified in a regression discontinuity framework.

Evaluation strategy

The impact evaluation is aimed at identifying the causal effect (i.e., the impact) of the set of interventions on education, child labour, and participation in labour of adult household members (especially women, as they are the key target group of the interventions). To identify the causal effect, the impact evaluation must estimate a counterfactual outcome: the education and (child) labour outcomes that would have been observed among project beneficiaries in absence of the project. This counterfactual outcome is unobserved by definition. However, a valid counterfactual can be established by identifying a comparison group that is similar to the group of beneficiaries at the start of the project in all respects, except that they do not participate in the intervention.

As explained in detail in UCW (2012), to identify a credible comparison group, the impact evaluation exploits the fact that the set of interventions described above is assigned on the basis of a wealth index using the so-called regression discontinuity methodology.

The intuition behind the regression discontinuity methodology is as follows. All households with working children and a mother who can participate in the intervention are ranked from poorest to richest on the basis of a wealth index

generated using baseline data collected by the project, as described above. The poorest households (i.e., the households in the lower half of the wealth distribution) are assigned to the intervention group. The richest households (i.e. the households in the upper half of the wealth distribution) do not receive any interventions and constitute our control group. While these two groups are obviously not similar before the implementation of the interventions, they may be expected to be virtually identical close to the point in the wealth index that separates the comparatively poor intervention households and the comparatively rich control households. By comparing intervention and control households close to this threshold, we can identify the (local) impact of the program.[6]

[6] For a heuristic discussion see Lee and Lemieux (2010).

5. PROJECT IMPLEMENTATION

Intervention take-up

Monitoring information collected at the time of treatment indicates that there were a total of 680 treated households out of the 1,098 households initially selected as beneficiaries for the support packages to mothers described above. A total of 418 selected households therefore did not accept to participate to the program resulting in the take-up rate of about 62%. As shown in Table 3, Santiago Nonualco municipality was host to the largest number of treated households (206), followed by Tacuba (181), Luis La Herradura (128), Izalco (94) and Tecoluca (71).

Table 3. **Program take up among selected beneficiaries**

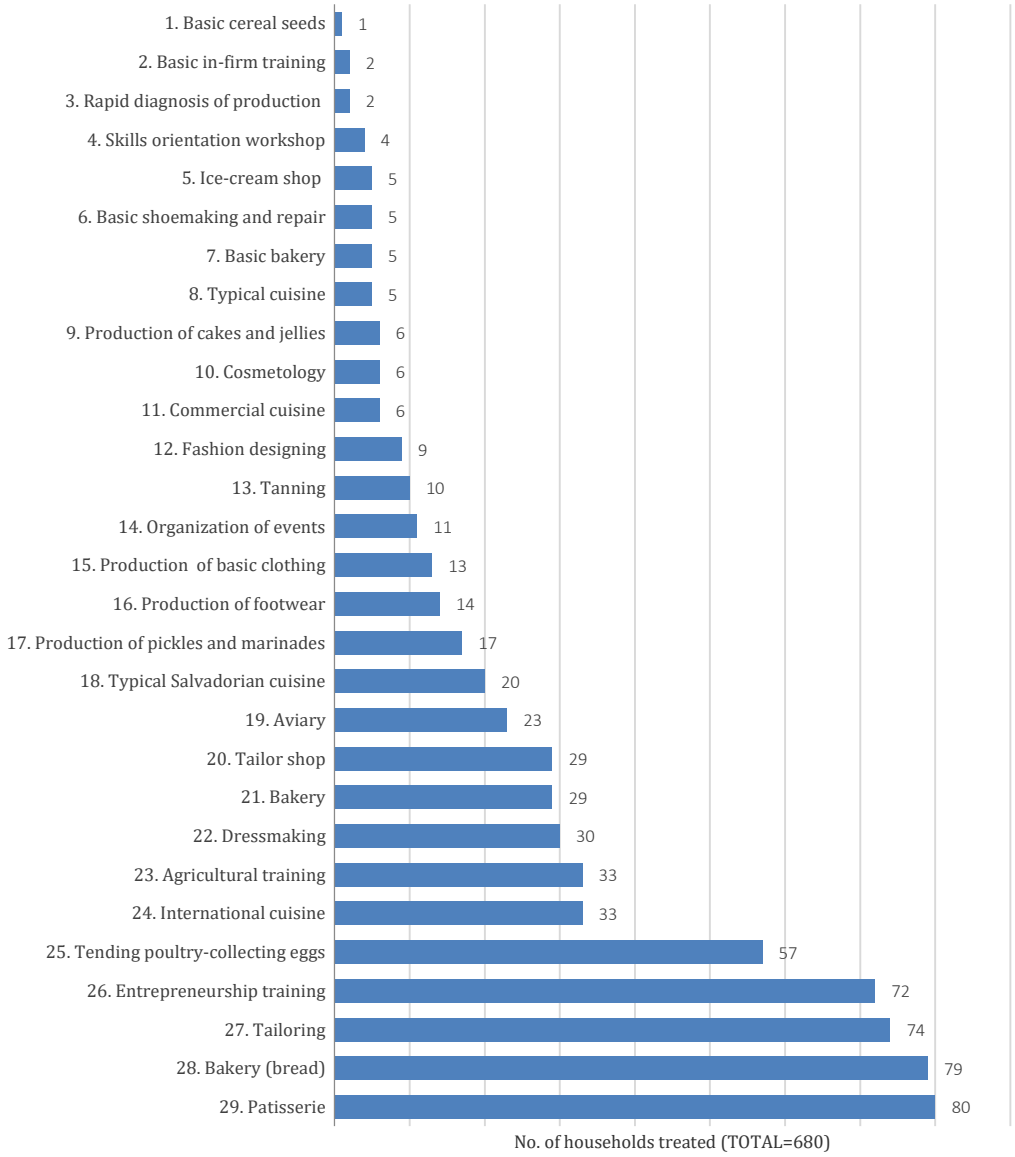
Municipality	Households initially selected as beneficiaries		
	Participated in the program	Did not participate in the program	Total
Tacuba	181	105	286
Izalco	94	36	130
Santiago Nonualco	206	139	345
San Luis la Herradura	128	69	197
Tecoluca	71	69	140
Total	**680**	**418**	**1,098**

Only a minority of children took up the education package, also because of the relatively high level of school attendance, and therefore in what follows our discussion focuses on the package for the mothers.

Interventions provided

Information on the specific interventions received by the treated households, also collected as part of monitoring at the time of treatment, is reported in Figure 4. As shown, the project involved provision of 29 training-related interventions, distributed unequally across the 680 beneficiary households. Patisserie and bakery were the most common, benefiting 80 and 79 households, respectively, followed by tailoring (74 households), training in business (72 households) and chicken breeding (57 households). At the other end of the frequency distribution, fewer than five households were provided with orientation training, e.g. rapid productive assessment.

Figure 4. **Frequency distribution of treated households by specific intervention received**

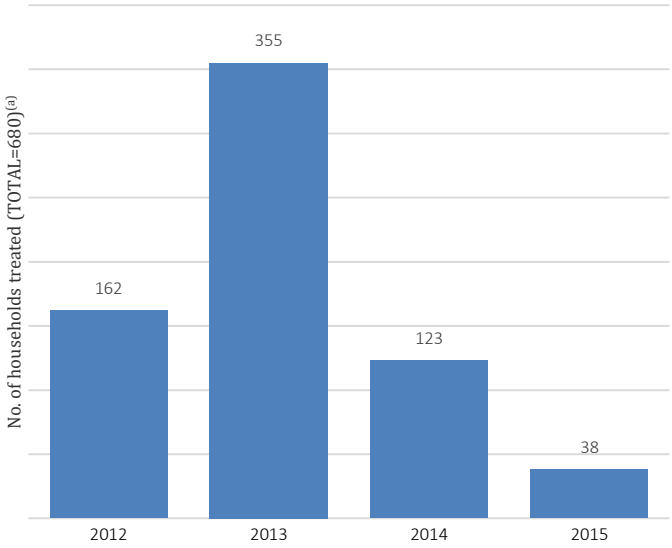


Timing

Implementation began in 2012, when a total of 162 households were treated. Implementation peaked the following year at 355 households, slowing thereafter to 123 households in 2014 and to 38 households in 2015 (Figure 5).[7]

[7] Information on the date of treatment was missing for two households.

Figure 5. **Number of households treated by year**



Notes: (a) Information was missing for two households.

6. DATA COLLECTION

Baseline data were collected in the five participating municipalities at the end of April and in May of 2012 (see UCW 2012 and UCW 2013 for further details).

Follow-up data collection was undertaken primarily in July and August of 2015[8]. The follow-up survey consisted of an in-depth questionnaire administered to the same households identified as having working children in the initial listing exercise. The follow-up survey questionnaire consisted of the following sections:

1) An initial section providing the identity and address of the respondent;
2) A section on the characteristics of the household members;
3) A section on the education status of household members (current school participation, highest level of education attended, ability to read and write);
4) A section on economic activities, vocational/professional training, other income and other activities of all household members aged five years or more;
5) A section on the characteristics of the house inhabited by the household and access to durable goods;
6) A section on the health of household members aged five to 17 years;
7) A section on businesses or enterprises of household members;
8) A section on participation in public or private social protection programs;
9) A section on the respondent's attitudes towards child labour and education;
10) A section on household decision-making; and
11) A section on awareness of the IPEC *Eliminating Child Labour in El Salvador through Economic Empowerment and Social Inclusion* program.

[8] In El Salvador the academic year runs from January to November. Thus, the baseline and follow-up surveys were fielded during the academic year and not during school holidays. Therefore school holidays are not a factor in explaining differences in school attendance and child labour. Both the baseline and follow up surveys were fielded during the rainy season, therefore also excluding seasonal factors in explaining the observed differences between treated and non treated households.

The follow-up survey questionnaire is included as Appendix 7 to the Report. OIT and DEICO (2015), attached as Appendix 6 to the Report, describes the follow-up data collection and discusses the main descriptive results of the follow-up survey (in Spanish).

7. SAMPLE ATTRITION

Sample attrition from the baseline to the follow-up survey was unfortunately substantial. Of the 2,098 eligible households interviewed at baseline , only 1,496 participated in the follow-up survey, for an overall attrition rate of 28.7%. One of the reasons for the high attrition rate was the worsening security situation in the country and in the concerned municipalities that made it difficult and at times impossible to access all of the original households.

Breaking the attrition figure down further, the follow-up survey covered 794 of the initial 1,098 selected beneficiaries (attrition rate of 27.7%) and 702 of the initial 1,000 control households (attrition rate of 29.8%).[9] Attrition rates for the control and intention-to-treat households decomposed by municipality are reported in Table 4. The municipalities of Izalco and San Luois la Herradura had the highest attrition rates, mainly due to the worsening of the security situation in these locations.

Table 4. **Distribution of intention-to-treat and control households by municipality, *baseline and follow-up survey***

Municipality	Control			Intention-to-treat			Total		
	Baseline (no.)	Follow-up (no.)	Attrition (%)	Baseline (no.)	Follow-up (no.)	Attrition (%)	Baseline (no.)	Follow-up (no.)	Attrition (%)
Tacuba	139	122	12.2	286	225	21.3	425	347	18.4
Izalco	109	45	58.7	130	56	56.9	239	101	57.7
Santiago Nonualco	410	296	27.8	345	273	20.9	755	569	24.6
San Luis la Herradura	149	88	40.9	197	138	29.9	346	226	34.7
Tecoluca	193	151	21.8	140	102	27.1	333	253	24.0
Total	**1,000**	**702**	**29.8**	**1,098**	**794**	**27.7**	**2,098**	**1,496**	**28.7**

The relatively high attrition rate observed might invalidate the inference if it is not independent of treatment status and if generates an unbalanced sample in terms of baseline characteristics. Note that, as shown in the baseline report, the impact evaluation sample was well balanced at baseline. In order to exclude these

[9] The follow-up survey covered 522 of the 680 *treated* households (i.e., of the households that the monitoring data indicated actually received the treatment).

possibilities, we carried out a set of tests that confirm independence of attrition from treatment and balance in terms of baseline characteristics.

First of all, we test whether attrition is independent of treatment status. For all 2,098 eligible households, we generate a dummy variable that takes the value 1 if the household was interviewed at follow-up and 0 otherwise. As illustrated graphically in Figure 6 and shown formally in Table 5, the results of this test indicate that the probability of being interviewed at follow-up is not significantly different just above and below the threshold.

Figure 6. **Probability that household is interviewed in the follow-up survey**

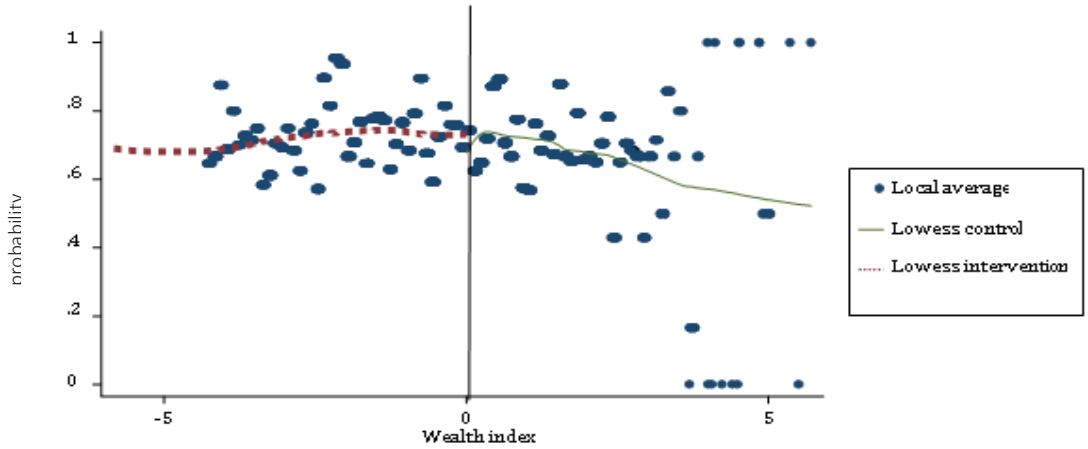


Table 5. **Estimated discontinuities of the probability of being re-interviewed at the follow-up survey**

	Discontinuity	Std. Error	P-value
	(1)	(2)	(3)
Household is interviewed in the follow-up survey	0.015	0.056	0.786

Notes: Column (1) displays estimated discontinuities in the probability of being re-interviewed at the follow-up survey displayed in the stub column at the threshold separating the intervention households from the control households (based on the estimation procedure of Austin Nichols). Columns (2) and (3) respectively show the standard errors and P-values of the estimated coefficients.

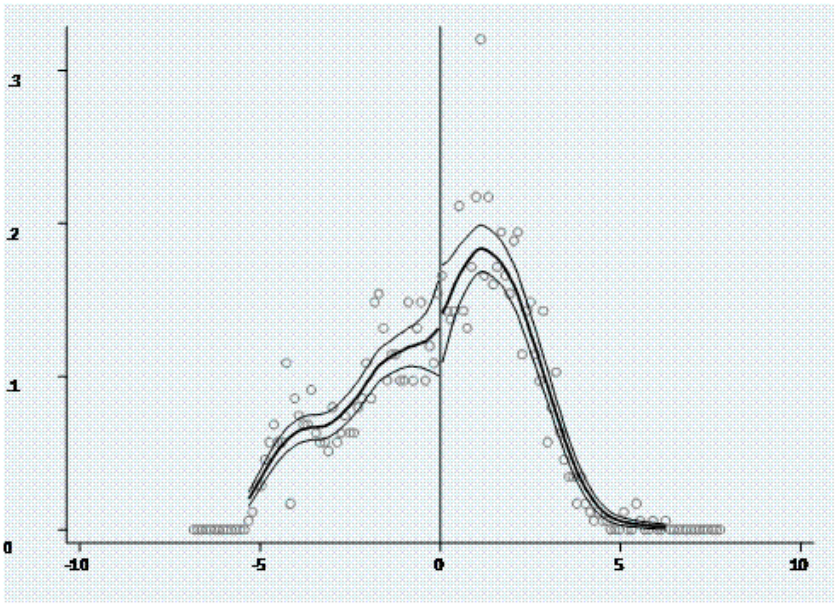
In the baseline survey report (UCW 2013) we showed both graphically and formally that the households in the proximity of the wealth threshold for selection in the treatment (our forcing variable) were similar in terms of wealth characteristics. Moreover, we showed that the density of the wealth index was continuous at the threshold.

In light of the relatively high attrition rate, we now repeat our graphical and formal tests for non-attritees (i.e., for the households re-interviewed at follow-up).

Following McCrary (2008), we examine whether the density of the wealth index is continuous at the threshold. The density of the wealth index *not* being continuous

is an indication that there could be systematic differences between the intervention and the control group. Figure 7, which was generated using McCrary's sub-routine for *Stata*, depicts the density of the wealth index. The density of the wealth index is still reasonably continuous for the group of households also interviewed at follow up. Most importantly, the confidence intervals indicate that the estimated density is not significantly different just above and below the threshold.

Figure 7. **Density of the wealth index**



We then test for the absence of discontinuity in the baseline household characteristics (which will be used as covariates) and in the baseline outcome variables for children, eligible females and adult males. To test whether there are significant discontinuities at the threshold score, we run local linear regressions within an optimal bandwidth around the threshold score (making use of a *Stata* sub-routine written by Austin Nichols).

The scatter plots presented in Appendix 1 (Figure A1 to Figure A4) provide a first indication that non-attrited households just above and below the threshold remain similar in terms of baseline. The scatter plots suggest that the relationship between the wealth index and the covariates is roughly continuous at the threshold for selection into the project. The Lowess regressions for the intervention and control groups hit the threshold roughly at the same value of the wealth indicator.

The formal test also finds no evidence of discontinuities in the household level covariates. Column (1) of Table 6 shows the estimated discontinuity based on the regression discontinuity estimation procedure of Austin Nichols. Columns (2) and (3) show the standard errors and P-values, respectively, of the estimated coefficients. The only significant discontinuities in wealth indicators are found in the surface of land owned by the household. There are also no discontinuities in other important covariates, such as "female headed household" and "literate household head" (Appendix 1 Figure A1.j and Figure A1.k).[10]

Table 6. **Estimated discontinuities in baseline covariates at the threshold in the wealth index: households interviewed in follow-up survey**

Household level indicators	Discontinuity	Std. Error	P-value	Mean full sample
	(1)	(2)	(3)	
TV	0.007	0.049	0.889	0.725
Fridge	-0.008	0.066	0.904	0.352
Oven	-0.034	0.021	0.103	0.023
Access to electricity	-0.013	0.047	0.782	0.737
Bedrooms per capita	0.039	0.028	0.159	0.182
No sanitary facilities	-0.005	0.014	0.709	0.051
Floor made of dirt	-0.057	0.061	0.354	0.375
Roof made of metal sheets	0.058	0.066	0.379	0.477
Wall made of adobe	0.054	0.047	0.251	0.161
Land surface (in manzanas)	0.359	0.176	0.042	0.513
Female headed household	-0.014	0.066	0.836	0.311
Household head is literate	-0.013	0.049	0.786	0.818

Notes: Column (1) displays estimated discontinuities in the household indicators displayed in the stub column at the threshold separating the intervention households from the control households (based on the estimation procedure of Austin Nichols). Columns (2) and (3) respectively show the standard errors and P-values of the estimated coefficients.

In terms of the outcome variables, the non-attrited households also look reasonably similar. As shown in Table 7 and Appendix Figure A2 to Figure A4, there does not appear to be any significant discontinuity.

[10] These variables are not included in the wealth index because they are endogenous (i.e. they are both an indicator of wealth but also a potential cause of household wealth).

Table 7. **Estimated discontinuities in baseline outcome variables at the threshold in the wealth index: members of households interviewed in follow-up survey**

	Discontinuity	Std. Error	P-value	Mean full sample
	(1)	(2)	(3)	
Outcome variables eligible women				
Working	-0.076	0.072	0.289	0.446
Work in own or household business (self-employed or unpaid family)	-0.025	0.065	0.702	0.297
Monthly wage (conditional on working)	-10.885	17.242	0.528	96.767
Average weekly working hours (conditional on working)	8.573	4.085	0.036	36.810
Outcome variables men aged 18+				
Working	0.013	0.041	0.748	0.897
Work in own or household business (self-employed or unpaid family)	0.062	0.066	0.349	0.481
Outcome variables children 5-17				
In school	-0.027	0.032	0.388	0.859
Literate	-0.004	0.031	0.910	0.878
Working	0.010	0.040	0.796	0.602
Work exclusively	0.007	0.027	0.792	0.093
Study exclusively	-0.028	0.039	0.481	0.351
Work and study	0.002	0.042	0.972	0.508
Idle	0.022	0.019	0.252	0.048
In hazardous work	0.028	0.043	0.515	0.551
In chores	0.022	0.028	0.435	0.866
Weekly hours worked (conditional on working)	8.537	1.828	0.000	17.040
Weekly hours in chores (conditional on being in chores)	3.119	1.033	0.003	12.994

Notes: Column (1) displays estimated discontinuities in outcome variables displayed in the stub column at the threshold separating the intervention households from the control households (based on the estimation procedure of Austin Nichols). Columns (2) and (3) respectively show the standard errors and P-values of the estimated coefficients.

8. METHODOLOGY

In the previous sections we have seen how households close to the threshold for program assignment have similar characteristics at baseline. Also, attrition between the baseline and the follow up surveys appears to be random with respect to program assignment, and households in the follow up survey continue to have similar baseline characteristics close to the threshold for assignment.

We can, therefore, proceed with RD estimates to assess the impact of the program.

As we have seen, the compliance was far from perfect: only 680 out of 1,098 selected beneficiary households took up the program, a take up rate of about 60%. Moreover, only 522 of 680 treated households were re-interviewed in the follow-up survey due to attrition. For these reasons, we estimate both the intent-to-treat and the treatment-on-the-treated effects, as they are likely to differ in our setting. We use the sharp RD design to estimate the intent-to-treat effect (ITT). The treatment-on-the treated effect (TOT) is estimated by applying the fuzzy RD design, using the treatment assignment as an instrument for actual program participation.

To measure the intent-to-treat effect of the program we estimate the following sharp regression discontinuity equation:

$$Y_{ij} = \alpha + \beta D_j + \sum_{k\geq 1} \gamma_k \, (X_j - c)^k + \sum_{k\geq 1} \delta_k \, D_j (X_j - c)^k + \vartheta Z_i + \varepsilon_i \qquad (1)$$

where $c - h \leq X \leq c + h$;

Y_{ih} is the outcome of interest for individual i from household j; α is the intercept; D_j is a dummy taking the value 1 if a household was selected for the interventions (i.e. had e wealth index below the implicit threshold); $\sum_{k\geq 1} \gamma_k \, (X_j - c)^k$ is a polynomial of order k that captures the relationship between the outcome of interest and the distance of a household's wealth index X_j to the threshold c, while the term $\sum_{k\geq 1} \delta_k \, D_j (X_j - c)^k$ allows for a different slope below and above the threshold. Z_i is a vector of the baseline covariates, and ε_i is the error term, and h is a bandwidth. The standard errors are clustered at the municipality level.

The estimated coefficient β identifies the average local ITT effect of households being selected for the interventions.

The fuzzy RD design can be described by the following two equations system:

$$Y_{ij} = \alpha + \beta T_j + \sum_{k\geq 1} \gamma_k \, (X_j - c)^k + \sum_{k\geq 1} \delta_k \, D_j (X_j - c)^k + \vartheta Z_i + \varepsilon_i \qquad (2)$$

$$T_j = \sigma + \tau D_j + \sum_{k\geq 1} \rho_k \left(X_j - c\right)^k + \sum_{k\geq 1} \varphi_k \, D_j \left(X_j - c\right)^k + \theta Z_i + \epsilon_i \qquad (3)$$

where T_j is the treatment dummy variable taking the value 1 if a household actually received the treatment; the other variables are as described in the equation (1).

Choice of the optimal bandwidth and order of polynomial

As is well known, the choice of the optimal bandwidth *h* is the crucial issue for the RD design, since there is always a tradeoff between precision and bias of the estimates. For each outcome, we select the optimal bandwidth using the cross-validation criterion (CVC) proposed by Imbens and Lemieux (2008):

$$CVC_{Y(h)} = \tfrac{1}{N} \sum_{i=1}^{N} (Y_i - \hat{Y}(X_i))^2,$$

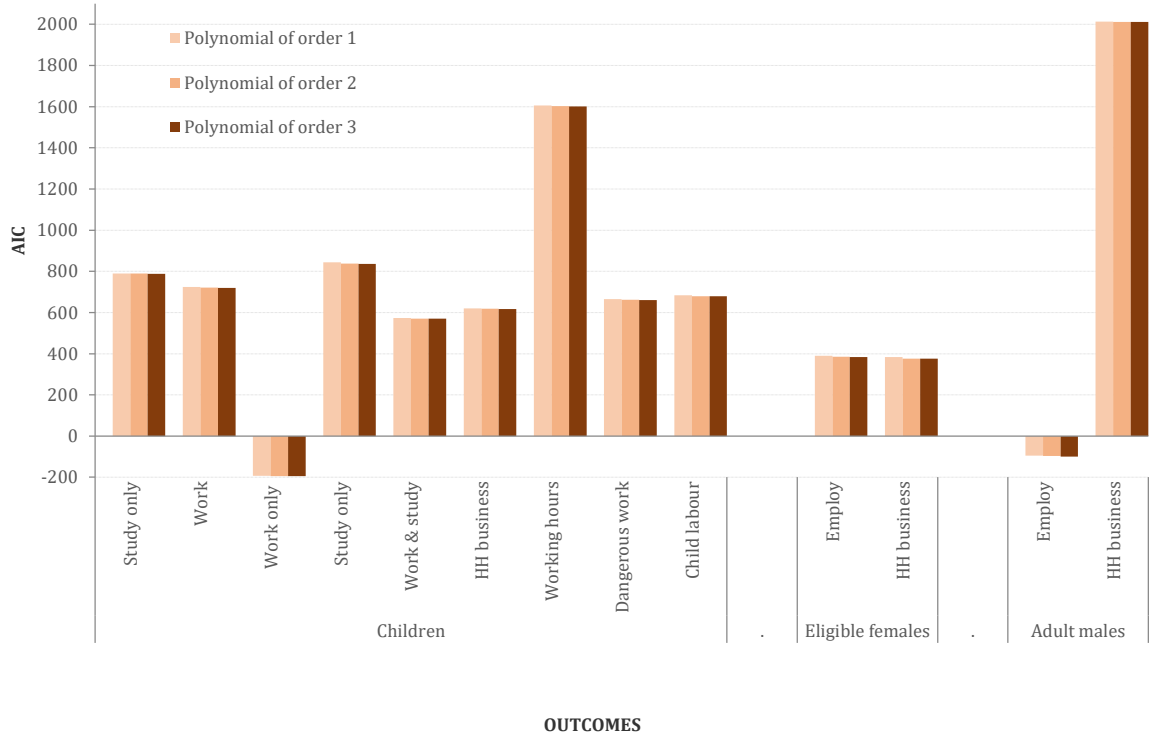
with the preferred bandwidth given by:

$$h_{CV}^{opt} = arg \min_{h} CV_Y \, (h)$$

In particular, we estimate the CVC starting with a bandwidth of 0.2 and proceeding with steps of 0.2. For the fuzzy RD design, we use the same bandwidth selected for the sharp RD estimates.

We choose the order of polynomial of $\sum_{k\geq 1} \gamma_k (X_j - c)^k$ using the Akaike information criterion (AIC). The AIC does not vary in any relevant way with the order of polynomial (Figure 8) at the optimal bandwidth. Therefore, also for the sake of simplicity and to improve the efficiency we use hence the first order polynomial.

Figure 8. **AIC comparison for estimations of equation (1) for the preferred cross-validation criterion and with different orders of polynomial**



The vector Z of baseline covariates for child outcomes includes child age dummies; sex of child; sex, literacy and education level of household head; number of children aged 5-14 years in household; and household wealth characteristics (ownership of TV, refrigerator, oven; access to electricity and sanitary facilities; whether the walls of dwelling are made of adobe; whether the floor of dwelling is made of dirt; whether the roof of dwelling is made of metal sheets; bedrooms per capita; and land surface). The vector Z of baseline covariates for adult outcomes includes a second order age polynomial, education level; number of children aged 5-14 years in household; and household wealth characteristics as described above for children's outcomes.

9. RESULTS

We now turn to the impact of the program on eligible woman, men from eligible households, and, most importantly, on children. Table 9 to Table 19 show the results of the impact estimates for both the *treatment-on-the-treated* (TOT) and the *intent-to-treat* (ITT) groups; [11] for each outcome variable the table also report the optimal bandwidth on which the estimates are based. Standard errors are clustered at the municipality level. These estimates are based on the optimal bandwidth, a first order polynomial and include the set of covariates described above. The set of complete results with and without covariates and for different bandwidths can be found in Appendix 3. Table 8 presents the definitions of the variables used in the estimates.

Table 8. **Variable definitions**

School attendance
A child is defined as attending school if he/she is in attendance at any regular accredited educational institution or program for organized learning.

School attendance regularity
A child's attendance regularity reflects whether school days were missed during the past week.

School expenditures
School expenditures comprise monthly expenditures for enrolment, books, uniform, footwear, other materials, parent fee, tuition and transport.

Literacy
An individual is defined as literate if he/she can read and write.

Employment
An individual is defined as employed if he/she worked in the past week or in the past 12 months. In particular, if she/he 1) worked in past week at least 1 hour; or 2) has a job but did not work during past week for some reason (sickness, maternity leave, change of shift, and etc.); or 3) in past week participated in any remunerated activities cash or in-kind; or/and 4) in the past 12 months worked in a non -agricultural enterprise; or/and 5) in the past 12 months was involved in any farming activities; or/and 6) in the past 12 months worked in an enterprise owned by himself/herself.

Household chores
A child is defined as performing household chores if he/she performs at least one of the following activities: cleaning the house, fetching wood; fetching water; taking care on small/old/sick members in the household; cooking; washing dishes; repair work; and etc.

Own or household business
An individual is defined as working in own or household business if he/she works as an employer, self-employed or unpaid family worker in the main or secondary activities.

Work in hazardous conditions
A child is defined as working in hazardous conditions if his or her work involves: work in dusty, smoky, noisy environment; work in extreme hot or cold; work with dangerous tools, chemical pesticides; work during night or early morning; carrying heavy loads; work in rivers, lakes or under water.

Child labour
A child is defined as involved in child labour if he or she falls into one of the following categories: aged 5-13 years in employment; aged 14-15 years working in hazardous conditions or employed for more than 34 hours a week; or aged 16-17 working in hazardous conditions.

[11] Also shown are the standard errors and bandwidths on which the estimates are based and the mean of outcome variable in the full sample.

The estimated effects of the interventions are, not surprisingly, larger for the *treatment-on-the-treated* (TOT) group, as it reflects those that actually participated in the program. The results for the *intent-to-treat* group differ in terms of magnitude, but otherwise are largely consistent with the TOT. Note that most of our findings are robust to the exclusion of covariates, to variation of bandwidths. The cases in which the results are not robust are mentioned in the text.

Impact on households

Adult labour market outcomes

The program had the expected impact on the **employment of eligible women**. Among the women actually taking part in the program, employment increased by 40 percentage points as result of the program (Table 9a).[12] This rise in women's employment was largely driven by involvement in own or household business, which increased by 44 percentage points among who took up the program.[13]

Table 9. **Impact on adult female labour market outcomes**

(a) Treatment-on-the-treated: 2SLS estimates

	Employment	Own/household business(1)
Impact estimate	0.403*** (0.123)	0.439** (0.201)
Bandwidth	0.6	0.6
Num. observations	295	295
Mean full sample	0.54	0.39

(b) Intent-to-treat: OLS estimates

	Employment	Own/household business(1)
Impact estimate	0.230*** (0.084)	0.250** (0.108)
Bandwidth	0.6	0.6
Num. observations	295	295
Mean full sample	0.54	0.39

Notes: all estimates are based on a first order polynomial and include the covariates described in section 8. Standard errors (in parentheses) are clustered at the municipality level. (1) Work as self-employed or unpaid family worker in the main or secondary activities.
** Statistical significance at 10%; ** Statistical significance at 5%; *** Statistical significance at 1%*

[12] ITT effect 23 percentage points (Table 9b).

[13] ITT effect 23 percentage points (Table 9b).

The increase in women self employment did not generate a reduction in other forms of economic activities. There is no significant reduction in the involvement of women in paid work as a consequence of the program. As shown in the Appendix the impact on female paid employment is very small and not significant.

This increase in female employment does not appear to spill over to other members of the family. **Adult males from eligible households** did not increase their participation in economic activities or their involvement in own household business. While the TOT estimates do in fact indicate a positive effect on adult male employment, this effect is only marginally significant and also not robust to changes in the bandwidth (Table 10). This result should, therefore, be considered with care.

Table 10. **Impact on adult male labour market outcomes**

(a) Treatment-on-the-treated: 2SLS estimates

	Employment	Own/household business(1)
Impact estimate	0.063* (0.037)	-0.026 (0.082)
Bandwidth	0.6	Full sample
Num. observations	331	1,591
Mean full sample	0.93	0.60

(b) Intent-to-treat: OLS estimates

	Employment	Own/household business(1)
Impact estimate	0.036 (0.023)	-0.017 (0.053)
Bandwidth	0.6	full sample
Num. observations	331	1,591
Mean full sample	0.93	0.60

Notes: all estimates are based on a first order polynomial and include the covariates described in section 8. Standard errors (in parentheses) are clustered at the municipality level.
(1) Work as employer, self-employed or unpaid family worker in the main or secondary activities.
** Statistical significance at 10%; ** Statistical significance at 5%; *** Statistical significance at 1%*

Household income and expenditures

Notwithstanding the substantial increase in women participation to economic activity and in their own business in particular, it is not possible to identify a significant impact on household income and expenditures.

The point estimates indicate a large increase in the labour income of treated women: almost 50 per cent for the TOT estimates. The coefficients are, however,

not significant. This might be due to the small sample size at the optimal bandwidth and/or to measurement errors that are known to affect income reporting especially for non-wage employment. However, as we have no way to test for this, the positive coefficient must be taken at most as a possible indication of direction of impact.

Similarly, the program shows a positive, but small and non significant, impact on household per capita labour income and household per capita expenditures.

Table 11. **Female labour income, household adult labour income per capita and household expenditure per capita.**

RD estimates of the effects of interventions on labour income of eligible females; household adult labour income p.c. and household total expenditure p.c.

(a) Intent-to-treat: OLS estimates

	Labour income of eligible females	Household adult labour income p.c.	Household total expenditure p.c.
Impact estimate	19.009	2.171	2.383
	(24.493)	(6.011)	(2.981)
Bandwidth	0.8	Full sample	Full sample
Num. observations	384	1,463	1,496
Mean full sample	72.60	57.81	30.47

(b) Treatment-on-the-treated: 2SLS estimates

	Labour income of eligible females	Household adult labour income p.c.	Household total expenditure p.c.
Impact estimate	31.736	3.383	*3.704*
	(40.715)	(9.395)	*(4.644)*
Bandwidth	0.8	Full sample	Full sample
Num. observations	384	1,463	1,496
Mean full sample	72.60	57.81	30.47

Notes: all estimates are based on a first order polynomial and include variables displayed in section 8 as controls. Standard errors (in parentheses) are clustered at the municipality level.
* Statistical significance at 10%; ** Statistical significance at 5%; *** Statistical significance at 1%

Household decision making

The program affected apparently affected the "balance of power" within the household. The follow up survey contain a section of decision making within the households. In particular, it is asked which individual contribute to the decisions regarding a large set of activities ranging from purchase of food to education, investments and loans. We have estimated the impact of the project on the probability that a beneficiary woman contributed to the decisions in the set of

categories detailed below. As can be seen from Table 12 the project has substantially increased beneficiary women decision-making role within the household with respect to the control group. The impact appears positive for all the categories, but large and significant only for a subset of them. Of particular relevance is the large increase in the role of women with respect to children's school attendance and on household investments.

Table 12. **RD estimates of the effects of interventions on women decision-making within household**

(a) Intent-to-treat: OLS estimates

	1. Purchases: Food	2. Purchases: Child clothes	3. Purchases: Electrical (household) appliances	4. Child school attendance	5. Visits to hospital when children are sick	6. Investments to family business	7. Family planning	8. Loans	9. Participation in the community activities	10. Expenses to improve housing
Impact estimate	0.048**	0.088	0.065	0.114*	0.104	0.179**	0.119	0.110**	0.048	0.047**
	(0.022)	(0.064)	(0.052)	(0.066)	(0.082)	(0.084)	(0.115)	(0.054)	(0.073)	(0.022)
Bandwidth	1.6	0.8	1.6	1.0	1.0	1.0	0.6	1.6	1.8	1.6
Num. observations	726	365	718	438	447	428	247	648	776	719
Mean full sample	0.84	0.83	0.74	0.83	0.84	0.71	0.71	0.63	0.75	0.72

(b) Treatment-on-the treated: 2SLS estimates

	1. Purchases: Food	2. Purchases: Child clothes	3. Purchases: Electrical (household) appliances	4. Child school attendance	5. Visits to hospital when children are sick	6. Investments to family business	7. Family planning	8. Loans	9. Participation in the community activities	10. Expenses to improve housing
Impact estimate	0.076*	0.150	0.104	0.178*	0.166	0.300*	0.183	0.178**	0.080	0.076***
	(0.040)	(0.105)	(0.089)	(0.104)	(0.133)	(0.162)	(0.189)	(0.072)	(0.127)	(0.029)
Bandwidth	1.6	0.8	1.6	1.0	1.0	1.0	0.6	1.6	1.8	1.6
Num. observations	726	365	718	438	447	428	247	648	776	719
Mean full sample	0.84	0.83	0.74	0.83	0.84	0.71	0.71	0.63	0.75	0.72

Notes: all estimates are based on a first order polynomial and include variables displayed in table 5 as controls. Standard errors (in parentheses) are clustered at the municipality level.
* Statistical significance at 10%; ** Statistical significance at 5%; *** Statistical significance at 1%

Impact on children

The effects of the project on household behavior set the stage for analyzing the impact on children and understanding the reasons of the observed changes, if any.

Children's education and work

The program had a large impact on **children's school attendance**. As reported in Table 13a, the probability of school attendance increased by 7.6 percentage points as a result of the program,[14] a substantial increase given the already high level of school attendance at baseline. In fact, if taken at face value, the program appears to have brought about universal school attendance to children in the treated households.

The design of the evaluation does not permit the precise identification of the mechanisms that determined the observed change. It is likely, however, that mothers who were provided livelihood opportunities were in a better position to afford the direct and indirect costs associated with sending their children to school. At the same time, training and sensitization efforts likely helped smooth children's school (re)entry. These effects, however, may have been partially offset by the increase in the productivity of children's work due to the increased level of own business activity. The fact that there was also no change in terms of children's involvement in the household business (Table 17) is an indication that the program did not generate additional demand for children's work, as a result of the increased level of household economic activity.

[14] The increase is 2.5 percentage points according to the ITT estimates, Table 13b.

Table 13. **RD estimates of the effects of interventions on children's school attendance, regularity of school attendance and school expenditures, children aged 5-15 years in the baseline survey**

(a) Treatment-on-the-treated: 2SLS estimates

	School attendance	Regularity of school attendance[a]	School expenditures[b]
Impact estimate	*0.076**** *(0.026)*	-0.019 (0.026)	4.868 (3.185)
Bandwidth	1.8	4.2	Full sample
Num. observations	1,308	1,581	2,025
Mean full sample	0.83	0.84	9.32

(b) Intent-to-treat: OLS estimates

	School attendance	Regularity of school attendance[1]	School expenditures[2]
Impact estimate	*0.046**** *(0.015)*	-0.013 (0.017)	3.191 (2.166)
Bandwidth	1.8	4.2	Full sample
Num. observations	1,308	1,581	2,025
Mean full sample	0.83	0.84	9.32

Notes: (a) Did a child miss any school day during last week? (b) School expenditures include monthly expenditures for enrollment, books, uniform, footwear, other materials, parent fee, tuition and transport. All estimates are based on a first order polynomial and include covariates described in section 8. Standard errors (in parentheses) are clustered at the municipality level.
** Statistical significance at 10%; ** Statistical significance at 5%; *** Statistical significance at 1%*

The regularity of school attendance did not change significantly as a result of the interventions (Table 13), indicating that once the children began to attend school they behaved more or less like other students. The fact that ITT regularity of school attendance did not decrease seems to indicate that the children who started to attend school but did not stop working (see discussion below) made their work compatible with education, at least as reflected by the regularity of their school attendance.

We could also check self-reported information on attendance and regularity of attendance against information collected directly at the school level.

The school survey asks school teachers about the regularity of students' school attendance. The survey covers 637 children aged 5-17 years from eligible households.

Children's' school attendance from school module almost perfectly coincides with self-reported school attendance. The majority of 637 children (603 children) attend school always or regularly according to the school survey. Of the 603 children reported to attend school, 592 did self-report to attend school. The data from the

school survey appear to confirm the reliability of self-reported information on school attendance.

Table 14. **Comparison of attendance from school survey and self-reported school attendance , children aged 5-17 in the follow-up survey**

Attendance from school survey	Self-reported school attendance		
	Not attend	Attend	Total
Always	10	**530**	540
Regularly	1	**62**	63
Sometimes	0	15	15
Infrequently	0	7	7
Never	4	8	12
Total	15	622	637

The impact on school expenditures is positive and large, and robust across bandwidths. This impact is not, however, statistically significant (Table 13). There is hence an indication that the program might also have induced households to increase expenditures on their children's education, but this effect cannot be identified precisely.

Children's involvement in **employment** and in **household chores** did not change as a result of the program: the coefficient is positive but small and the standard error is much larger than the coefficients themselves (Table 15).

Table 15. **RD estimates of the effects of interventions on children's involvement in employment and household chores, children aged 5-15 years in the baseline survey**

(a) Treatment-on-the-treated: 2SLS estimates

	Employment	Household chores
Impact estimate	0.039 (0.084)	0.182 (0.242)
Bandwidth	1.0	0.4
Num. observations	801	339
Mean full sample	0.25	0.54

(b) Intent-to-treat: OLS estimates

	Employment	Household chores
Impact estimate	0.026 (0.055)	0.100 (0.128)
Bandwidth	1.0	0.4
Num. observations	801	339
Mean full sample	0.25	0.54

Notes: all estimates are based on a first order polynomial and include covariates described in section 8. Standard errors (in parentheses) are clustered at the municipality level.
** Statistical significance at 10%; ** Statistical significance at 5%; *** Statistical significance at 1%*

The picture changes somewhat, however, when we look more closely at how the program affected the division of children's time between work and schooling. The share of **children working only** (i.e., without also attending school), one of the worst-off categories of child workers, declined significantly. As reported in Table 16a, the share of children working only from treated households declined by 3.8 percentage points as a result of the program.[15] Again, while we cannot identify with certainty the specific mechanism of this change, it is worth noting that it was this group of out-of-school children that was specifically targeted by the program with special training and sensitization efforts aimed at encouraging their school (re)entry. The decline in the working only group was mirrored by an apparent rise in those **working and attending school** (although this latter result is not robust across all bandwidths). This suggests that families responded to the program by sending their children to school *without* fully withdrawing them from work at the same time.

[15] The ITT effect was 2.5 percentage points, Table 16b.

Table 16. **RD estimates of the effects of interventions on child time use, children aged 5-15 years in the baseline survey**

(a) Treatment-on-the-treated: 2SLS estimates

	Work exclusively	Study exclusively	Work and study	Idle
Impact estimate	-0.038*** (0.014)	*-0.006* *(0.103)*	0.121 (0.116)	*-0.034* *(0.045)*
Bandwidth	2.6	1.0	1.0	1.0
Num. observations	1,760	*801*	801	801
Mean full sample	0.07	0.66	0.17	0.09

(b) Intent-to-treat: OLS estimates

	Work exclusively	Study exclusively	Work and study	Idle
Impact estimate	-0.025*** (0.008)	-0.004 (0.069)	0.081 (0.076)	-0.022 (0.029)
Bandwidth	2.6	1.0	1.0	1.0
Num. observations	1,760	801	801	801
Mean full sample	0.07	0.66	0.17	0.09

Notes: all estimates are based on a first order polynomial and include covariates described in section 8. Standard errors (in parentheses) are clustered at the municipality level.
** Statistical significance at 10%; ** Statistical significance at 5%; *** Statistical significance at 1%*

The program interventions resulted in a notable reduction in the time children spent in employment. Children worked an estimated 13.6 fewer hours each week due to the program (Table 17a),[16] a decline of almost one-half, leaving them more time for their studies and leisure, and reducing the length of their exposure to any workplace hazards. While families did not fully withdraw their children from work when sending them to school in response to the program, therefore, it nonetheless appears clear that more classroom time served to crowd out time that might have otherwise been spent working.

The reduction in the working hours was not accompanied by a shift in the **nature of the work performed by children**. Of particular importance in this regard, the program interventions did not result in a significant change in work in hazardous conditions or in work constituting child labour in accordance with national legislation (Table 17). We tried to identify whether the large reduction in working hours also translated into a reduction of children whose working hours exceeded the hours threshold for light work. However, given the small number of observations for this group and the consequently low power, we could not identify

[16] The ITT effect was 7 hours, Table 17b.

any significant effect. There was also no change in terms of children's involvement in the household business.

Again, the key impact of the program appears to have been a substitution of work time with classroom time, rather than a reduction in the incidence of work or a change in its characteristics.

Table 17. **RD estimates of the effects of interventions on child involvement in own or household business, working hours, work in hazardous conditions and child labour, children aged 5-15 years in the baseline survey**

(a) Treatment-on-the-treated: 2SLS estimates

	Own/household business[1]	Weekly working hours cond. on working	Work in hazardous conditions[2]	Child labour[3]
Impact estimate	*0.068* *(0.122)*	-13.593*** (3.327)	*0.033* *(0.064)*	0.030 (0.062)
Bandwidth	1.0	1.0	1.0	1.0
Num. observations	801	195	793	794
Mean full sample	0.20	24.8	0.22	0.23

(b) Intent-to-treat: OLS estimates

	Own/household business[1]	Weekly working hours cond. on working	Work in hazardous conditions[2]	Child labour[3]
Impact estimate	0.046 (0.079)	-6.979** (3.227)	0.022 (0.042)	0.020 (0.041)
Bandwidth	1.0	1.0	1.0	1.0
Num. observations	801	195	793	794
Mean full sample	0.20	24.8	0.22	0.23

Notes: all estimates are based on a first order polynomial and include covariates described in section 8. Standard errors (in parentheses) are clustered at the municipality level.
(1) Work as self-employed or unpaid family worker in the main or secondary activities.
(2) Work in hazardous conditions includes: work in dusty, smoky, noisy environment; work in extreme hot or cold; work with dangerous tools, chemical pesticides; work during night or early morning; carrying heavy loads; work in rivers, lakes or under water.
(3) Child labor includes all children aged 5-13 years in employment; children aged 14-15 years working in hazardous conditions or employed for more than 34 hours a week; and children aged 16-17 working in hazardous conditions.
** Statistical significance at 10%; ** Statistical significance at 5%; *** Statistical significance at 1%*

Parent's attitudes

The program appears to have had some impact on parent's attitudes towards child labour employment and schooling. As reported in Table 18a, treated households are significantly less likely to agree with statements favourable to child labour such as "work keeps children out of trouble" and "working children are stronger and healthier". Similarly, for schooling, treated households are significantly *less* likely to agree with statements downplaying the importance of schooling such as "education is only one of the factors that influence the success of a person" and "education is not important to success in life" (Table 19a).

Table 18. **RD estimates of the effects of interventions on the attitudes of the household head towards children's employment**

(a) Treatment-on-the-treated: 2SLS estimates

	My children work because it will give them more opportunities in the future	Work keeps children out of trouble/gives them direction	Working children are more responsible than non-working children	Working children are stronger and healthier than non-working children
Impact estimate	0.011 (0.211)	-0.137** (0.067)	-0.007 (0.056)	-0.729** (0.298)
Bandwidth	1.8	1.2	3.4	0.2
Num. observations	838	592	1,262	96
Mean full sample	0.62	0.58	0.85	0.62

(b) Intent-to-treat: OLS estimates

	My children work because it will give them more opportunities in the future	Work keeps children out of trouble/gives them direction	Working children are more responsible than non-working children	Working children are stronger and healthier than non-working children
Impact estimate	0.007 (0.127)	-0.084** (0.039)	-0.005 (0.036)	-0.403** (0.197)
Bandwidth	1.8	1.2	3.4	0.2
Num. observations	838	592	1,262	96
Mean full sample	0.62	0.58	0.85	0.62

Notes: all estimates are based on a first order polynomial and include variables displayed in Table 6 as controls. Standard errors (in parentheses) are clustered at the municipality level.
** Statistical significance at 10%; ** Statistical significance at 5%; *** Statistical significance at 1%*

Table 19. **RD estimates of the effects of interventions on the attitudes of the household head towards children's schooling**

(a) Treatment-on-the-treated: 2SLS estimates

	Education is the only way to succeed in life	Education is only one of the factors that influence the success of a person	Ensure that my children go to college is far from my economic possibilities	Education is not important to success in life
Impact estimate	0.066 (0.087)	-0.110** (0.045)	0.014 (0.043)	-0.281*** (0.088)
Bandwidth	1.2	0.4	1.0	0.4
Num. observations	592	184	493	184
Mean full sample	0.76	0.84	0.87	0.56

(b) Intent-to-treat: OLS estimates

	Education is the only way to succeed in life	Education is only one of the factors that influence the success of a person	Ensure that my children go to college is far from my economic possibilities	Education is not important to success in life
Impact estimate	0.107 (0.150)	-0.181** (0.072)	0.028 (0.075)	-0.465*** (0.174)
Bandwidth	1.2	0.4	1.0	0.4
Num. observations	592	184	493	184
Mean full sample	0.76	0.84	0.87	0.56

Notes: all estimates are based on a first order polynomial and include variables displayed in Table 6 as controls. Standard errors (in parentheses) are clustered at the municipality level.
** Statistical significance at 10%; ** Statistical significance at 5%; *** Statistical significance at 1%*

10. CONCLUSIONS

There are no impact evaluations of programs targeting child labour through support to women's businesses that we can use to frame the results presented here. However, some limited evidence exists on the impact of programs providing business training and seed capital to households. This evidence is reviewed in detail in De Hoop and Rosati (2013), from which the discussion below is taken.

Banerjee et al. (2011) study the effects of a program in India targeting women in the poorest of the poor households aimed at lifting them out of poverty by improving their income generating capacity. They find that the program increased the time spent at school by children, but did not reduce the time spent working. A comparable program (implemented by the same NGO) in Bangladesh (Bandera et al. 2013) resulted in a small but significant increase in the working hours of children in economic activities and in household business in particular.

Evidence from the Nicaragua's Results Based Initiative, which provided business training and start-up capital to selected women in poor rural communities (De Hoop, Rosati, Vakis 2015), led to an increase in children's school attendance, without any significant change in the involvement of children in economic activities.

In the light of this evidence, the impact of the El Salvador program was substantially positive, although the IE design does not allow us to identify the mechanisms through which it operated.[17] The program analysed in this Report produced substantial changes in household behaviour. The participation of women in economic activities, and in own business in particular, increased substantially, but without generating relevant changes in the labour supply of other members of the households.

Children appear to have benefited substantially from the program. Their school attendance increased significantly and household expenditures on education

[17] This is a common situation when there is more than one possible channel through which a program can affects the relevant outcomes. The random or as good as random (as in the present case) variation allow to identify the reduced formed effect, but not the structural parameters. A much more complex, and often unfeasible, design would be required to identify the structural parameters and hence the relative importance of the different channels.

showed signs (albeit not robust) of an increase. Children were not driven to work in the newly created or expanded household businesses, not an unusual outcome in this kind of programs, but they did not stop working either. Rather, they experienced a marked reduction (by about one half) in their weekly working hours, making more than enough room for a regular school attendance.

The data do not allow, because of lack of power, the determination of whether the reduction in working hours also resulted in a reduction of the number of children working excessive hours. Even if we cannot identify a reduction in the child labour headcount, it is clear that the program succeeded in improving the current conditions and the future perspectives of child labourers. Whether such improvements will be sustained in the long run is of course a question that remains open, but goes beyond the aim of the present impact evaluation.

With only one instrument, namely the allocation of the program on the base of the wealth index, it is not possible to identify the exact mechanism that was behind the observed results. However, the evidence shows that the increased involvement in economic activity of women did result in a substantial increase in their decision making capability within the household and in a possible, albeit not well identified, increase in household income. These two effects appear to have dominated any possible increase in child labour due to an higher demand for children's time generated by the expanded household business activities.

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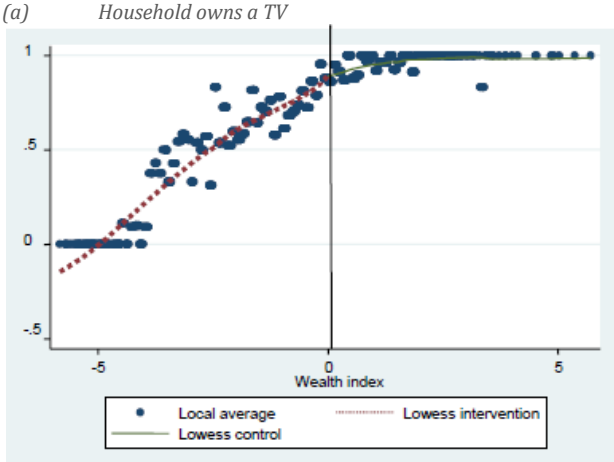
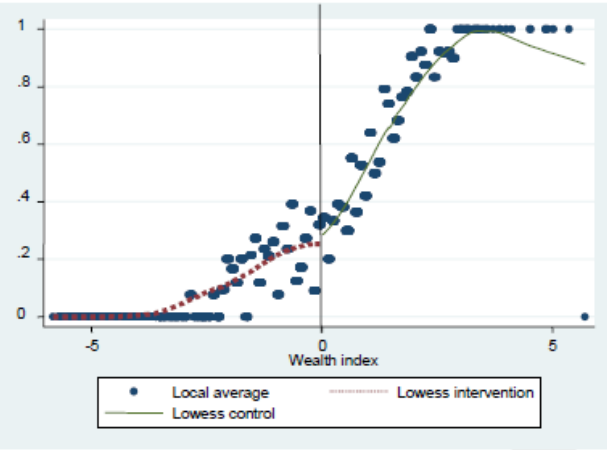
APPENDIX 1. VARIABLE DISCONTINUITY: SCATTER PLOTS

Figure A1. **Household level wealth indicators**

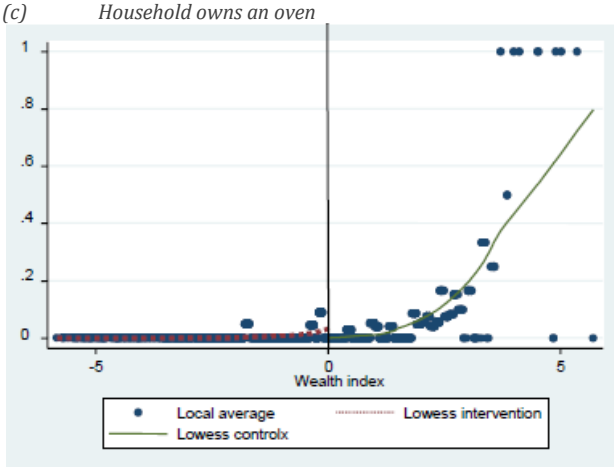
(a) Household owns a TV



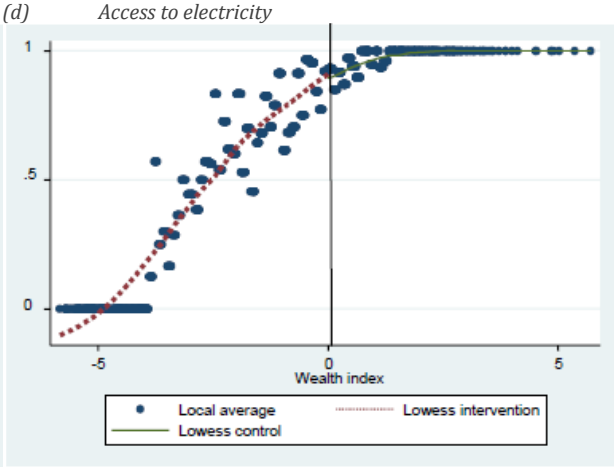
(b) Household owns a fridge



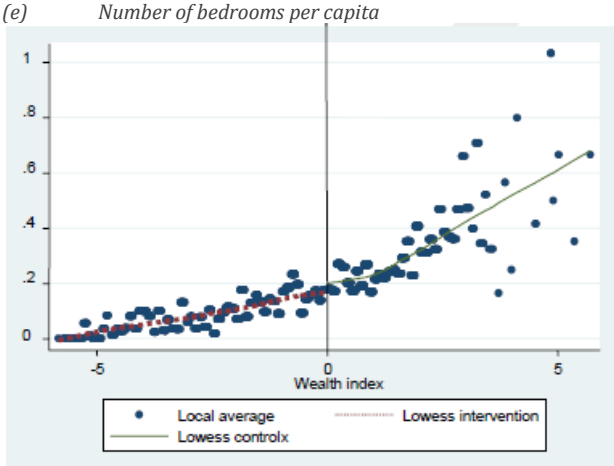
(c) Household owns an oven



(d) Access to electricity



(e) Number of bedrooms per capita



(f) Dwelling has no sanitary facilities

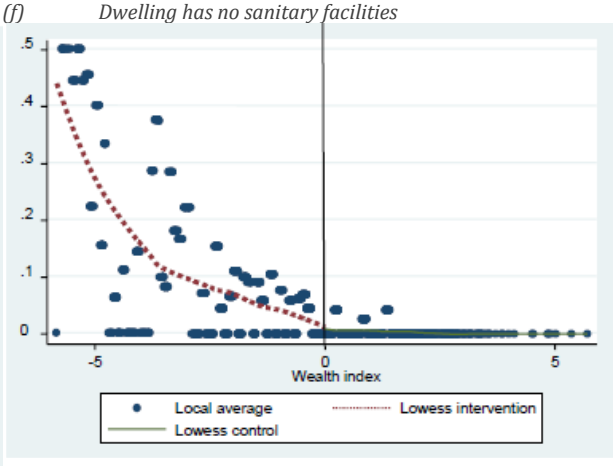
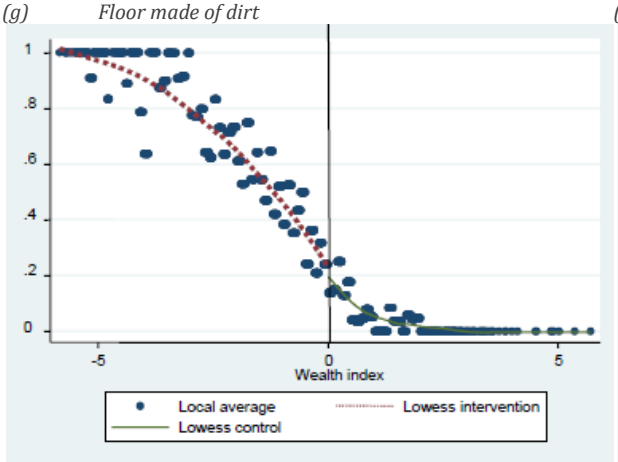
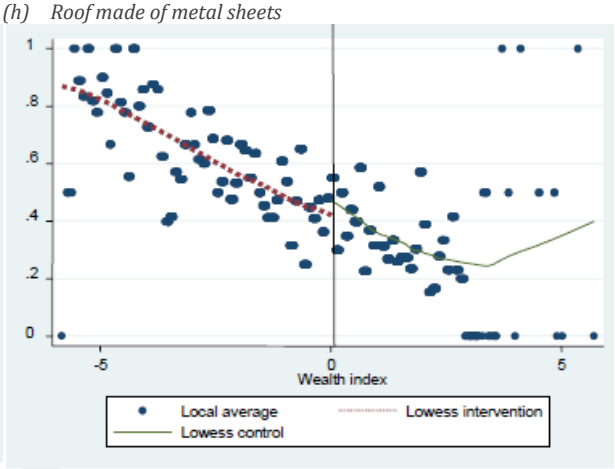


Figure A1.Cont'd

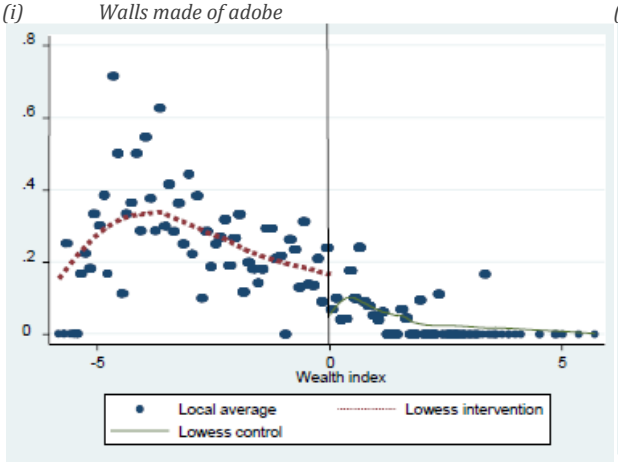
(g) Floor made of dirt



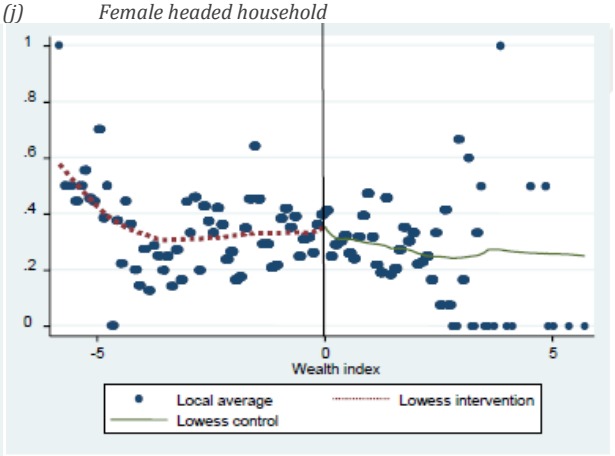
(h) Roof made of metal sheets



(i) Walls made of adobe



(j) Female headed household



(k) Household head literate

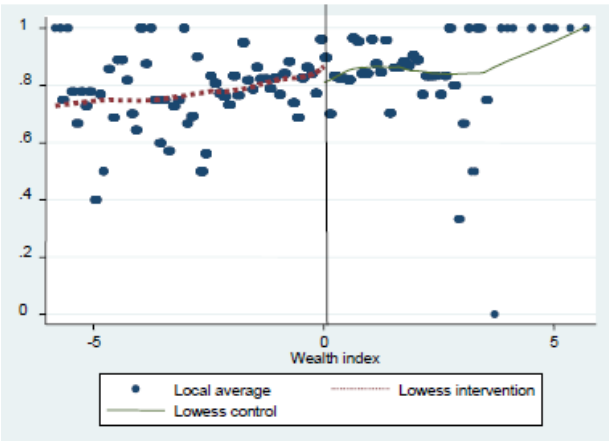
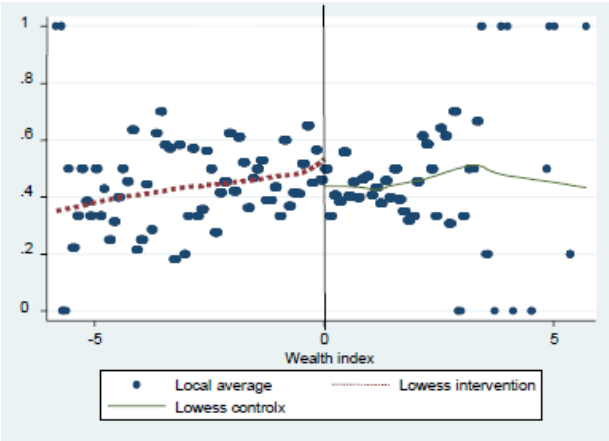
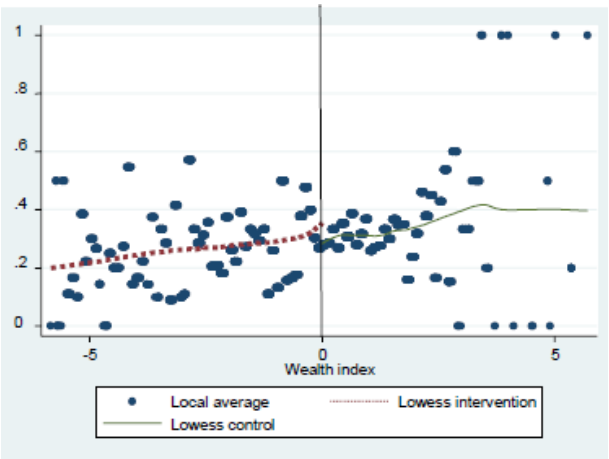


Figure A2. **Outcome variables: eligible women**

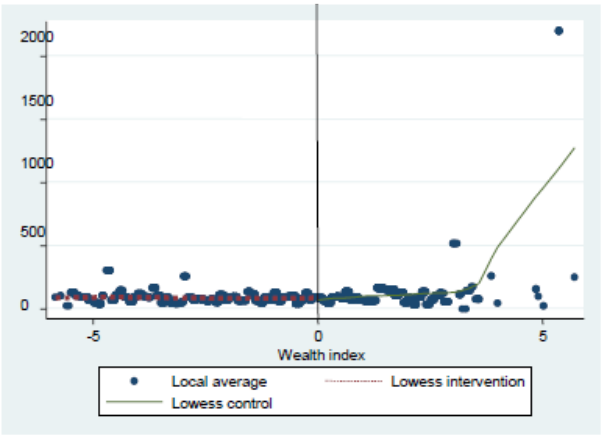
(a) Eligible women in work



(b) Eligible woman in own or household business



(c) Monthly wage of eligible women



(d) Weekly hours worked by eligible women

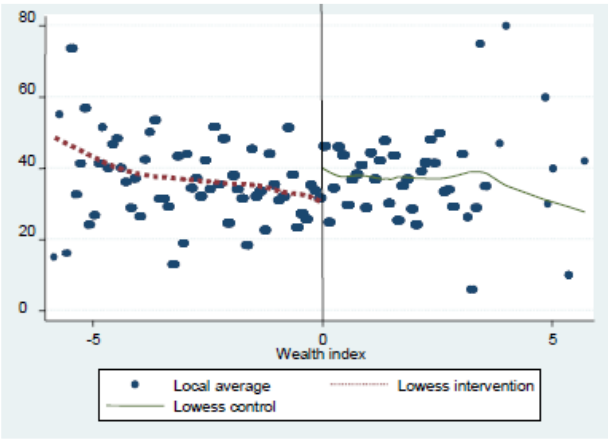


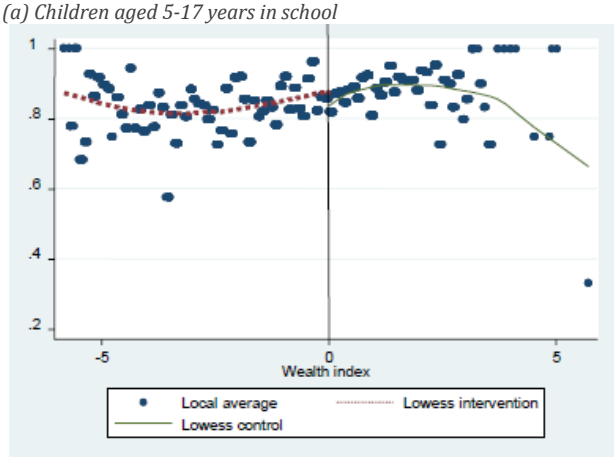
Figure A3. **Outcome variables: men aged 18+**

(a) Adult males in work

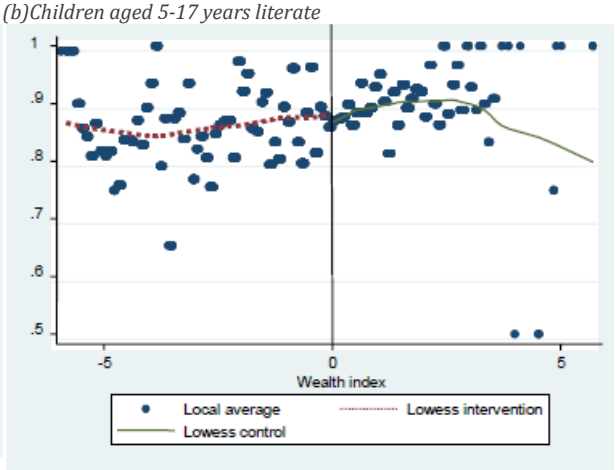
(b) Adult males in own or household business

Figure A4. **Outcome variables children: aged 5-17 years**

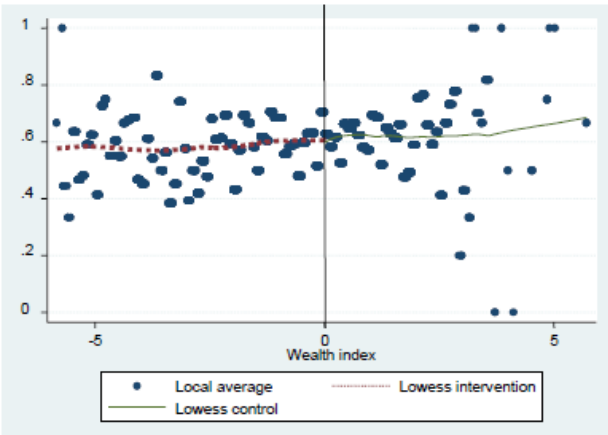
(a) Children aged 5-17 years in school



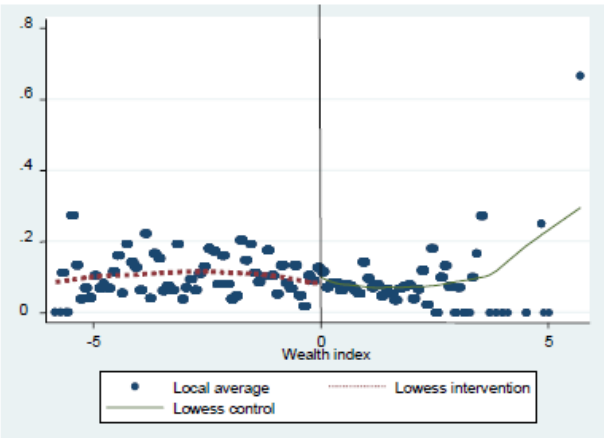
(b)Children aged 5-17 years literate



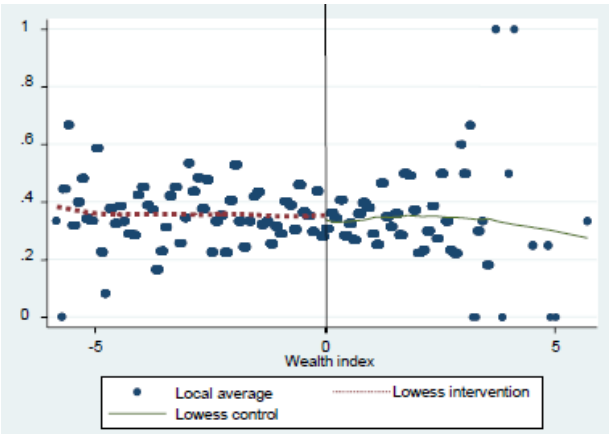
(c) Children aged 5-17 years in work



(d) Children aged 5-17 years in work exclusively



(e) Children aged 5-17 years in school exclusively



(f) Children aged 5-17 years in work and in school simultaneously

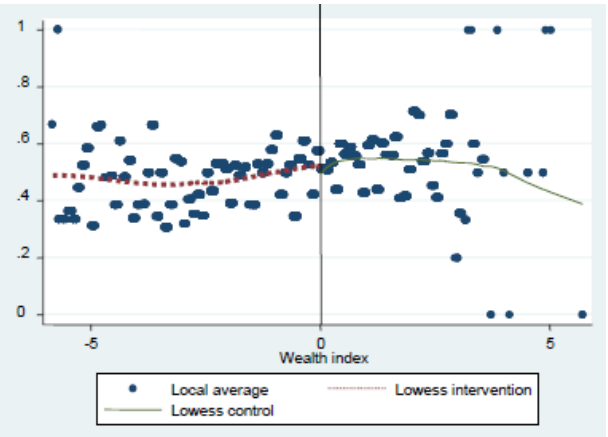
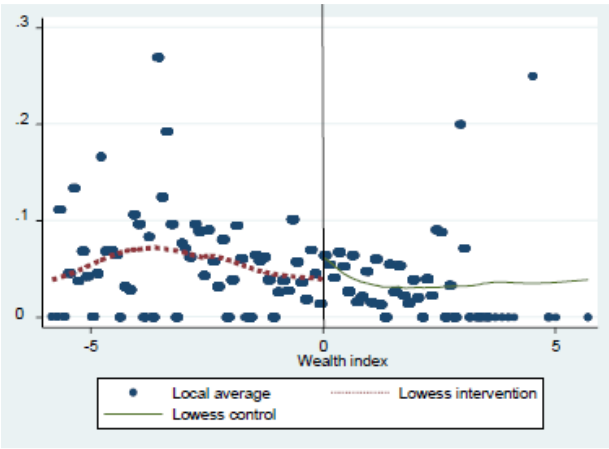
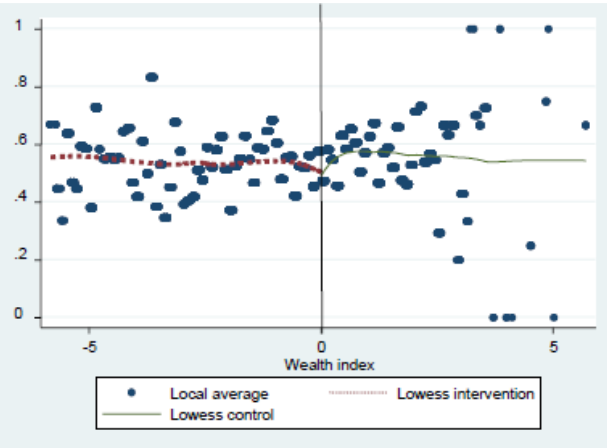


Figure A4.Cont'd

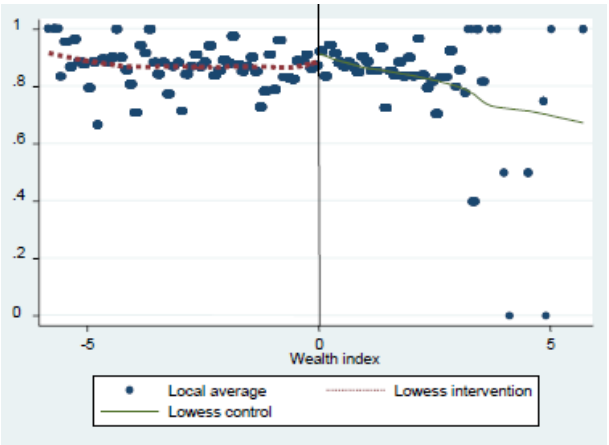
(g) Children aged 5-17 years in neither work nor school



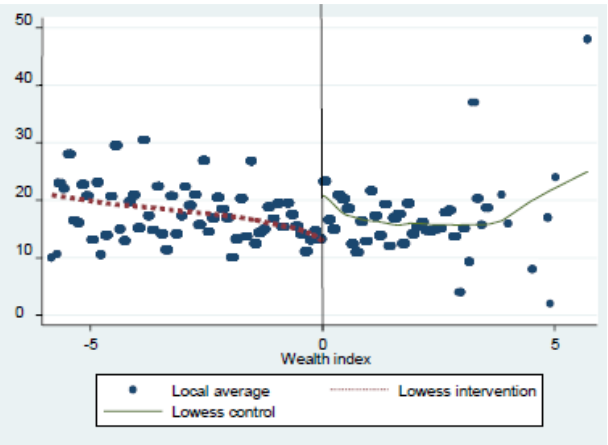
(h) Children aged 5-17 years in hazardous work



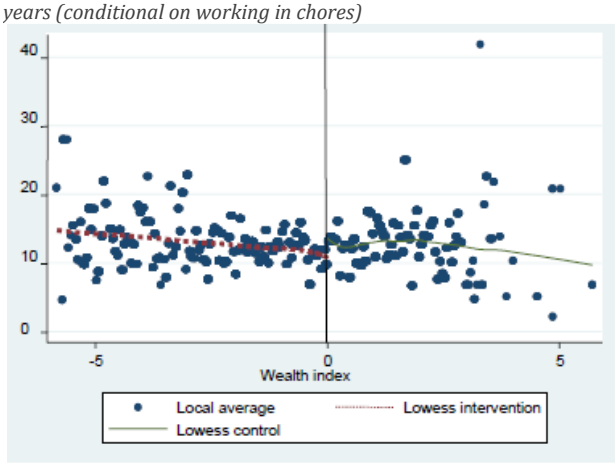
(i) Children aged 5-17 years in chores



(j) Weekly hours worked by children aged 5-17 years (conditional on working)



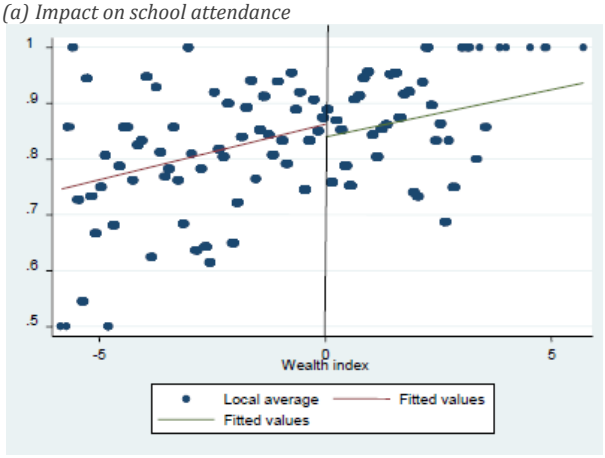
(k) Weekly hours worked in chores by children aged 5-17 years (conditional on working in chores)



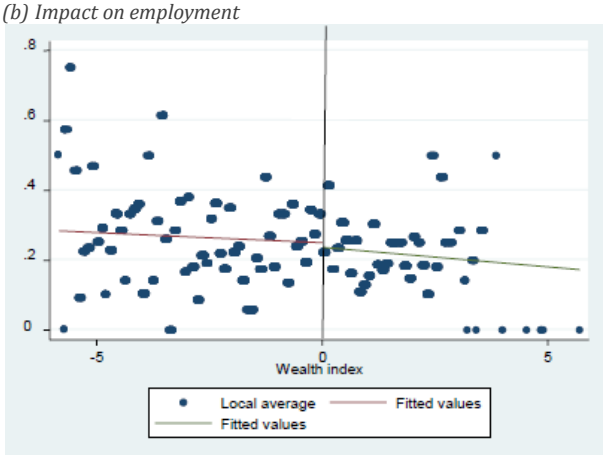
APPENDIX 2. ESTIMATES OF THE EFFECT OF INTERVENTIONS: SCATTER PLOTS

Figure A5. **Impact of interventions: children aged 5-15 years at the time of the baseline survey**

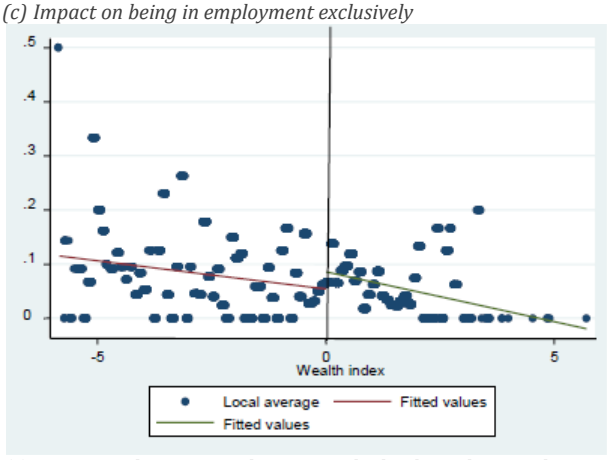
(a) Impact on school attendance



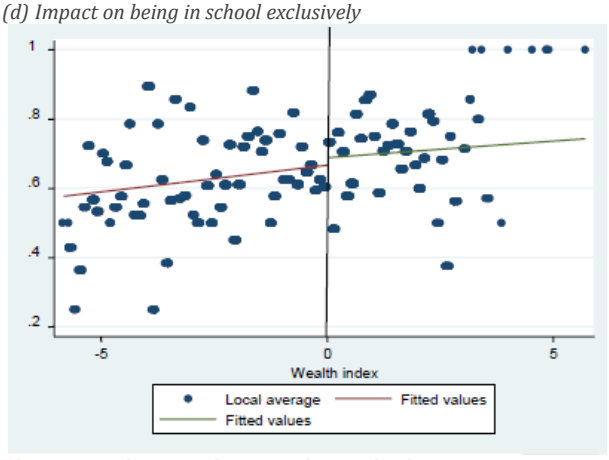
(b) Impact on employment



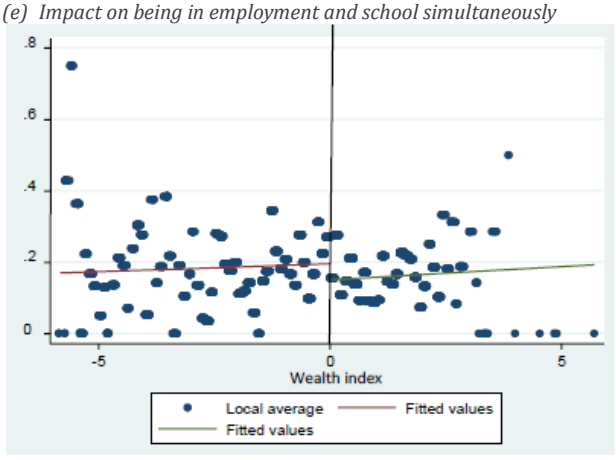
(c) Impact on being in employment exclusively



(d) Impact on being in school exclusively



(e) Impact on being in employment and school simultaneously



(f) Impact on being neither in work nor school

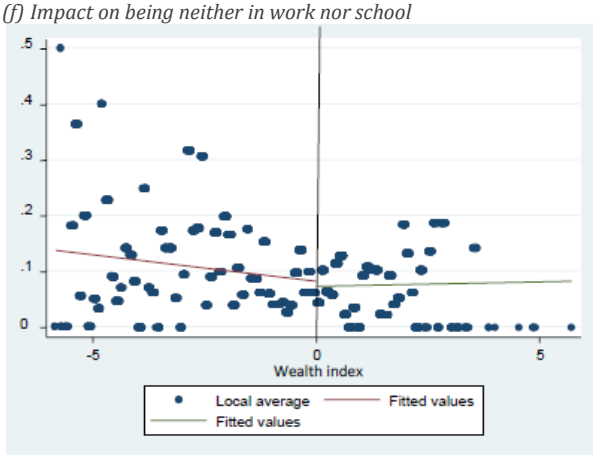
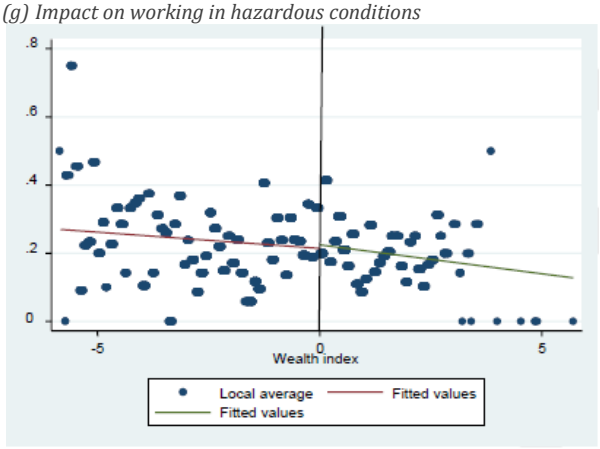
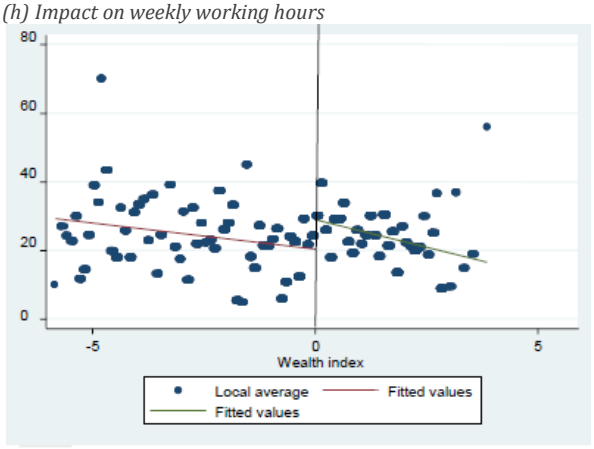


Table A5.Cont'd

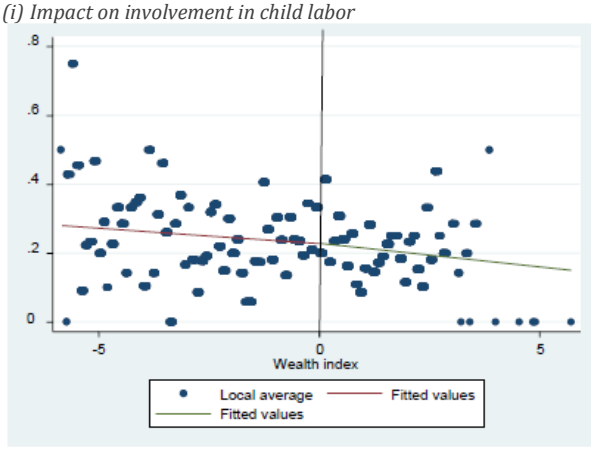
(g) Impact on working in hazardous conditions



(h) Impact on weekly working hours

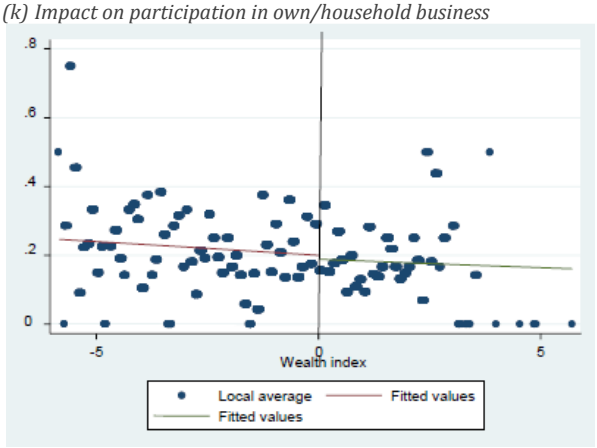


(i) Impact on involvement in child labor

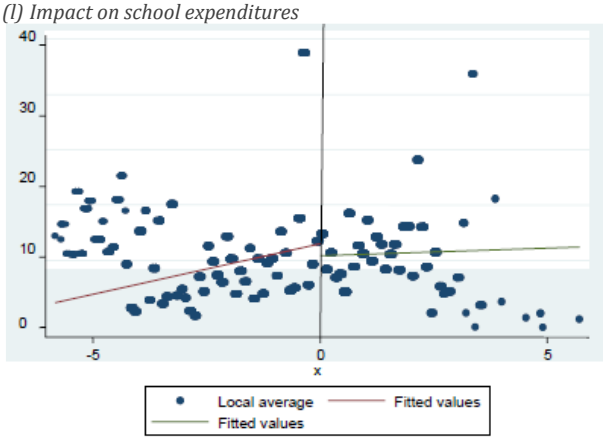


(j) Impact on being involved in household chores

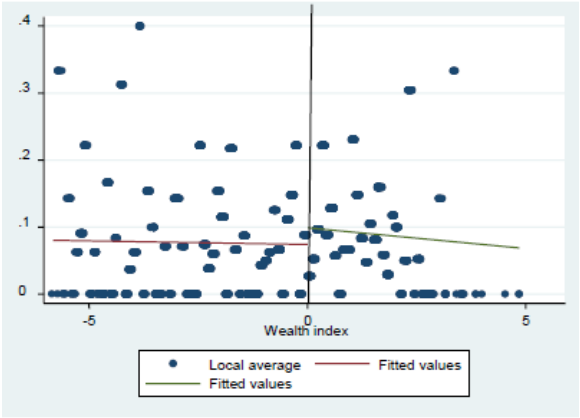
(k) Impact on participation in own/household business



(l) Impact on school expenditures



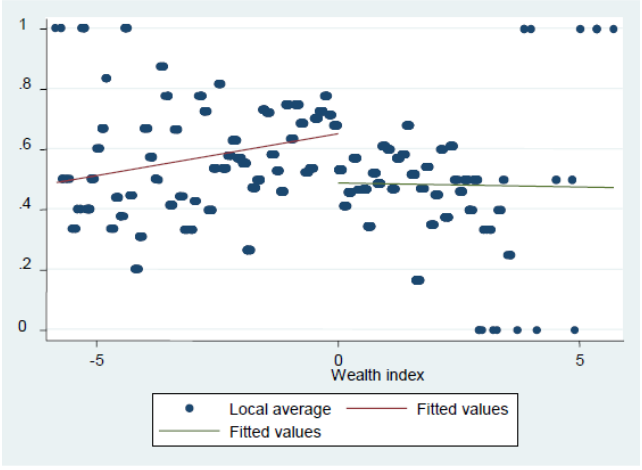
(m) Impact on occurrence of missed school days during last week



Notes: Dots present local averages at a bin size of 0.1 and the lines represent linearly fitted regressions.

Figure A6. **Impact of interventions: eligible female**

(a) Impact on the participation in employment

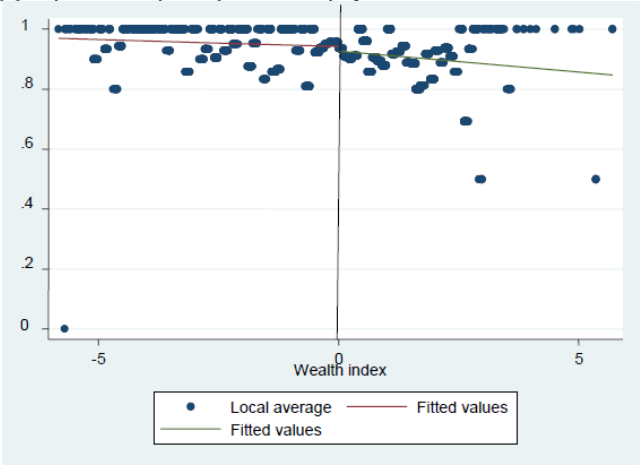


(b) Impact on participation in own/household business

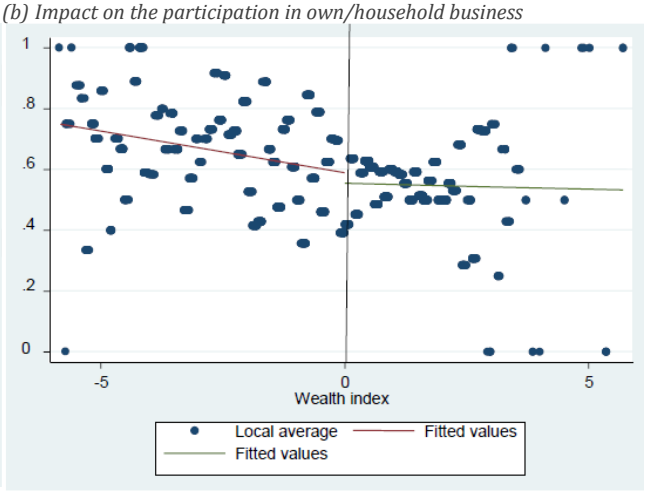
Notes: Dots present local averages at a bin size of 0.1 and the lines represent linearly fitted regressions.

Figure A7. **Impact of interventions: adult males from eligible households**

(a) Impact on the participation in employment



(b) Impact on the participation in own/household business



Notes: proportion of adult males worked as self-employed or unpaid family workers in year 2015 as a function of the intervention forcing variable. Dots present local averages at a bin size of 0.1 and the lines represent linearly fitted regressions.

APPENDIX 3. RD ESTIMATES OF THE EFFECT OF INTERVENTIONS: FULL RESULTS

Table A1. **RD Estimates of the effect of interventions on child outcome variables, children aged 5-15 in the baseline survey**

Intent-to-treat: OLS estimates

Bandwidth		Optimal		Small (1.0)		Middle (3.0)		Full sample		Mean full sample
		No covariates	With Covariates	No covariates	With Covariates	No covariates	With Covariates	No covariates	With Covariates	
Employ	Polynomial of order 1	0.059 (0.058)	0.026 (0.055)	-0.014 (0.069)		0.051 (0.057)	0.048 (0.046)	0.014 (0.053)	0.016 (0.030)	0.25
	Num observations (bandwidth)	*1,434 (2.0)*	*801 (1.0)*	*801 (1.0)*	*opt*	*1,898 (3.0)*	*1,898 (3.0)*	*2,430*	*2,430*	
Attend	Polynomial of order 1	0.039* (0.021)	0.046*** (0.015)	0.065*** (0.021)	0.077*** (0.022)	0.039 (0.038)	0.038 (0.031)	0.022 (0.027)	0.009 (0.021)	0.83
	Num observations (bandwidth)	*1,308 (1.8)*	*1,308 (1.8)*	*801 (1.0)*	*801 (1.0)*	*1,898 (3.0)*	*1,898 (3.0)*	*2,430*	*2,430*	
Work only	Polynomial of order 1	-0.028*** (0.009)	-0.025*** (0.008)	-0.059*** (0.022)	-0.054* (0.031)	-0.023** (0.012)	-0.022*** (0.008)	-0.033 (0.022)	-0.028** (0.011)	0.07
	Num observations (bandwidth)	*1,760 (2.6)*	*1,760 (2.6)*	*801 (1.0)*	*801 (1.0)*	*1,898 (3.0)*	*1,898 (3.0)*	*2,430*	*2,430*	
Study only	Polynomial of order 1	-0.059 (0.079)	-0.004 (0.069)	0.020 (0.079)		-0.036 (0.079)	-0.032 (0.064)	-0.026 (0.058)	-0.035 (0.038)	0.66
	Num observations (bandwidth)	*1,308 (1.8)*	*801 (1.0)*	*801 (1.0)*	*opt*	*1,898 (3.0)*	*1,898 (3.0)*	*2,430*	*2,430*	
Work and Study	Polynomial of order 1	0.093* (0.049)	0.081 (0.076)	0.045 (0.086)		0.075 (0.046)	0.071* (0.038)	0.047 (0.036)	0.045* (0.026)	0.17
	Num observations (bandwidth)	*1,434 (2.0)*	*801 (1.0)*	*801 (1.0)*	*opt*	*1,898 (3.0)*	*1,898 (3.0)*	*2,430*	*2,430*	
Idle	Polynomial of order 1	-0.006 (0.030)	-0.022 (0.029)			-0.015 (0.028)	-0.016 (0.026)	0.011 (0.012)	0.019 (0.014)	0.09
	Num observations (bandwidth)	*801 (1.0)*	*801 (1.0)*	*opt*	*opt*	*1,898 (3.0)*	*1,898 (3.0)*	*2,430*	*2,430*	
										24.8

Bandwidth		Optimal		Small (1.0)		Middle (3.0)		Full sample		Mean full sample
Weekly working hours cond. on working	Polynomial of order 1	-9.971*** (1.938)	-6.979** (3.227)	-9.634** (4.727)		-9.517*** (2.972)	-7.980*** (3.227)	-8.017*** (2.551)	-6.944*** (2.577)	
	Num observations (bandwidth)	*225 (1.2)*	*195 (1.0)*	*195 (1.0)*	*opt*	*430 (3.0)*	*430 (3.0)*	*574*	*574*	
Work in hazardous conditions[(1)]	Polynomial of order 1	0.040 (0.054)	0.022 (0.042)	-0.017 (0.061)		0.037 (0.052)	0.038 (0.041)	-0.008 (0.051)	-0.005 (0.028)	0.22
	Num observations (bandwidth)	*1,825 (2.8)*	*793 (1.0)*	*793 (1.0)*	*opt*	*1,883 (3.0)*	*1,883 (3.0)*	*2,413*	*2,413*	
Child labour[(2)]	Polynomial of order 1	0.043 (0.054)	0.020 (0.041)	-0.015 (0.061)		0.036 (0.052)	0.036 (0.042)	0.001 (0.050)	0.005 (0.027)	0.23
	Num observations (bandwidth)	*1,425 (2.0)*	*794 (1.0)*	*794 (1.0)*	*opt*	*1,887 (3.0)*	*1,887 (3.0)*	*2,419*	*2,419*	
In own or household business as main or secondary activity[(3)]	Polynomial of order 1	0.058 (0.059)	0.046 (0.079)	-0.005 (0.091)		0.044 (0.069)	0.040 (0.057)	0.013 (0.059)	0.011 (0.041)	0.20
	Num observations (bandwidth)	*1,434 (2.0)*	*801 (1.0)*	*801 (1.0)*	*opt*	*1,898 (3.0)*	*1,898 (3.0)*	*2,430*	*2,430*	
In household chores	Polynomial of order 1	0.120 (0.145)	0.100 (0.128)	0.120 (0.145)	0.134 (0.144)	0.000 (0.091)	0.018 (0.100)	-0.016 (0.089)	0.006 (0.088)	0.54
	Num observations (bandwidth)	*1.0 (868)*	*339 (0.4)*	*1.0 (868)*	*868 (1.0)*	*2,065 (3.0)*	*2,065 (3.0)*	*2,623*	*2,623*	
Child attendance regularity during last week	Polynomial of order 1	-0.012 (0.023)	-0.013 (0.017)	0.016 (0.032)	0.040 (0.044)	-0.010 (0.025)	-0.012 (0.025)	-0.025 (0.026)	-0.019 (0.014)	0.084
	Num observations (bandwidth)	1,581 *(4.2)*	1,581 *(4.2)*	*598 (1.0)*	*598 (1.0)*	*1,393 (3.0)*	*1,393 (3.0)*	*1,768*	*1,768*	
Monthly school expenditures	Polynomial of order 1	1.712 (1.779)	3.191 (2.166)	4.864 (3.673)	4.904 (6.100)	3.699 (2.692)	4.129 (3.230)			9.32
	Num observations (bandwidth)	2,025 (full sample)	2,025 (full sample)	*681 (1.0)*	*681 (1.0)*	*1,599 (3.0)*	*1,599 (3.0)*	*opt*	*opt*	

Notes:
(1) Work in hazardous conditions includes: work in dusty, smoky, noisy environment; work in extreme hot o cold; work with dangerous tools, chemical pesticides; work during night or early morning; carrying heavy loads; work in rivers, lakes or under water.
(2) Child labor comprises all children aged 5-13 years in employment; children aged 14-15 years working in hazardous conditions or employed for more than 34 hours a week; and children aged 16-17 working in hazardous conditions.
(3) Work as employers, self-employed or unpaid family worker in the main or secondary activities.
Standard errors (in parentheses) are clustered at the municipality level.
** Statistical significance at 10%; ** Statistical significance at 5%; *** Statistical significance at 1%*

Table A2. **RD Estimates of the effect of interventions on child outcome variables, children aged 7-15 in the follow-up survey**

Intent-to-treat: OLS estimates

Bandwidth		Optimal		Small (1.0)		Middle (3.0)		Full sample		Mean full sample
		No covariates	With Covariates	No covariates	With Covariates	No covariates	With Covariates	No covariates	With Covariates	
Child labour based on the work for excessive hours [1]	Polynomial of order 1	0.035 (0.044)	0.050 (0.037)	0.035 (0.058)		0.040 (0.039)	0.045 (0.036)	0.025 (0.019)	0.030 (0.019)	0.11
	Num observations (bandwidth)	1,138 *(2.2)*	*589 (1.0)*	*589 (1.0)*	*opt*	*1,409 (3.0)*	*1,409 (3.0)*	*1,818*	*1,818*	

Notes:
Standard errors (in parentheses) are clustered at the municipality level.
(1) Child labor based on work for excessive hours comprises all children aged 5-13 years in employment; children aged 14-15 years employed for more than 34 hours a week.
** Statistical significance at 10%; ** Statistical significance at 5%; *** Statistical significance at 1%*

Table A3. **RD Estimates of the effect of interventions on child outcome variables, children aged 5-15 years in the baseline survey**

Treatment-on-the-treated: 2SLS estimates

Bandwidth		Optimal		Small (1.0)		Middle (3.0)		Full sample		Mean full sample
		No covariates	With Covariates	No covariates	With Covariates	No covariates	With Covariates	No covariates	With Covariates	
Employ	Polynomial of order 1	0.096 (0.094)	0.039 (0.084)	-0.021 (0.100)		0.079 (0.087)	0.074 (0.070)	0.022 (0.079)	0.025 (0.044)	0.25
	Num observations (bandwidth)	*1434 (2.0)*	*801 (1.0)*	*801 (1.0)*	*opt*	*1,898 (3.0)*	*1,898 (3.0)*	*2,430*	*2,430*	
Attend	Polynomial of order 1	*0.064* (0.036)*	*0.076*** (0.026)*	*0.095*** (0.035)*	*0.115*** (0.040)*	*0.059 (0.061)*	*0.058 (0.050)*	*0.033 (0.042)*	*0.014 (0.033)*	0.83
	Num observations (bandwidth)	*1,308 (1.8)*	*1,308 (1.8)*	*801 (1.0)*	*801 (1.0)*	*1,898 (3.0)*	*1,898 (3.0)*	*2,430*	*2,430*	
Work only	Polynomial of order 1	-0.044*** (0.017)	-0.038*** (0.014)	-0.086*** (0.030)	-0.081* (0.046)	-0.036* (0.019)	-0.034*** (0.012)	-0.050 (0.036)	-0.042** (0.019)	0.07
	Num observations (bandwidth)	*1,761 (2.6)*	*1,760 (2.6)*	*801 (1.0)*	*801 (1.0)*	*1,898 (3.0)*	*1,898 (3.0)*	*2,430*	*2,430*	
Study only	Polynomial of order 1	*-0.097 (0.129)*	*-0.006 (0.103)*	*0.029 (0.116)*		*-0.055 (0.120)*	*-0.049 (0.096)*	*-0.039 (0.086)*	*-0.053 (0.056)*	0.66
	Num observations (bandwidth)	*1,308 (1.8)*	*801 (1.0)*	*801 (1.0)*	*opt*	*1,898 (3.0)*	*1,898 (3.0)*	*2,430*	*2,430*	
Work and Study	Polynomial of order 1	0.152* (0.082)	0.121 (0.116)	0.066 (0.127)		0.114 (0.072)	0.108* (0.059)	0.072 (0.052)	0.067* (0.038)	0.17
	Num observations (bandwidth)	*1434 (2.0)*	*801 (1.0)*	*801 (1.0)*	*opt*	*1,898 (3.0)*	*1,898 (3.0)*	*2,430*	*2,430*	
Idle	Polynomial of order 1	*-0.008 (0.044)*	*-0.034 (0.045)*			*-0.023 (0.044)*	*-0.024 (0.041)*	*0.017 (0.018)*	*0.028 (0.021)*	0.09
	Num observations (bandwidth)	*801 (1.0)*	*801 (1.0)*	*opt*	*opt*	*1,898 (3.0)*	*1,898 (3.0)*	*2,430*	*2,430*	
Weekly working hours cond. on working	Polynomial of order 1	-19.501*** (4.386)	-13.593*** (3.327)	-17.784** (7.395)		-16.314*** (4.780)	-12.947*** (4.119)	*-12.551*** (4.776)*	-10.298** (4.384)	24.8
	Num observations (bandwidth)	*225 (1.2)*	*195 (1.0)*	*195 (1.0)*	*opt*	*430 (3.0)*	*430 (3.0)*	*574*		
										0.22

Bandwidth		Optimal		Small (1.0)		Middle (3.0)		Full sample		Mean full sample
Work in hazardous conditions	Polynomial of order 1	0.062	*0.033*	*-0.025*		*0.057*	*0.057*	-0.012	*-0.008*	
		(0.084)	*(0.064)*	*(0.089)*		*(0.082)*	*(0.064)*	*(0.078)*	*(0.042)*	
	Polynomial of order 3	0.044	*0.235*	*0.116***		*0.034*	*0.044*	0.036	*0.038*	
		(0.122)	*(0.144)*	*(0.049)*		*(0.128)*	*(0.085)*	*(0.146)*	*(0.128)*	
	Num observations	*1,825*	*793*	*793*	*opt*	*1,883*	*1,883*	*2,413*		
	(bandwidth)	*(2.8)*	*(1.0)*	*(1.0)*		*(3.0)*	*(3.0)*			
Child labour	Polynomial of order 1	*0.071*	0.030	-0.021		0.055	0.055	0.002	0.008	0.23
		(0.090)	(0.062)	(0.089)		(0.081)	(0.065)	(0.075)	(0.041)	
	Num observations	*1,425*	*794*	*794*	*opt*	*1,887*	*1,887*	*2,419*		
	(bandwidth)	*(2.0)*	*(1.0)*	*(1.0)*		*(3.0)*	*(3.0)*			
In own or household business as main or secondary activity	Polynomial of order 1	0.095	*0.068*	*-0.007*		*0.068*	*0.061*	*0.019*	*0.016*	0.20
		(0.098)	*(0.122)*	*(0.132)*		*(0.106)*	*(0.086)*	*(0.089)*	*(0.061)*	
	Num observations	*1,434*	*801*	*801*	*opt*	*1,898*	*1,898*	*2,430*	*2,430*	
	(bandwidth)	*(2.0)*	*(1.0)*	*(1.0)*		*(3.0)*	*(3.0)*			
In household chores	Polynomial of order 1	0.179	0.182		0.203	0.001	0.028	-0.024	0.010	0.54
		(0.236)	(0.242)		(0.242)	(0.139)	(0.150)	(0.134)	(0.130)	
	Num observations	*868*	*339*	opt	*868*	*2,065*	*2,065*	*2,623*	*2,623*	
	(bandwidth)	*(1.0)*	*(0.4)*		*(1.0)*	*(3.0)*	*(3.0)*			
Child attendance regularity during last week	Polynomial of order 1	-0.019	-0.019	0.021	0.055	-0.016	-0.018	-0.039	-0.029	0.84
		(0.034)	(0.026)	(0.044)	(0.060)	(0.038)	(0.038)	(0.038)	(0.021)	
	Num observations	*1,581*	*1,581*	*598*	*598*	1,393	1,393	1,768	1,768	
	(bandwidth)	*(4.2)*	*(4.2)*	*(1.0)*	*(1.0)*	*(3.0)*	*(3.0)*			
Monthly school expenditures	Polynomial of order 1	2.655	4.868	7.015	7.202	5.707	6.303			9.32
		(2.771)	(3.185)	(5.271)	(8.704)	(4.008)	(4.697)			
	Num observations	*2,025*	*2,025*	*681*	*681*	*1,599*	*1,599*	*opt*	*opt*	
	(bandwidth)	*(full sample)*	*(full sample)*	*(1.0)*	*(1.0)*	*(3.0)*	*(3.0)*			

Notes:
(1) Work in hazardous conditions includes: work in dusty, smoky, noisy environment; work in extreme hot o cold; work with dangerous tools, chemical pesticides; work during night or early morning; carrying heavy loads; work in rivers, lakes or under water.
(2) Child labor comprises all children aged 5-13 years in employment; children aged 14-15 years working in hazardous conditions or employed for more than 34 hours a week; and children aged 16-17 working in hazardous conditions.
(3) Work as employers, self-employed or unpaid family worker in the main or secondary activities.
Standard errors (in parentheses) are clustered at the municipality level.
** Statistical significance at 10%; ** Statistical significance at 5%; *** Statistical significance at 1%*

Table A4. **RD Estimates of the effect of interventions on child outcome variables, children aged 7-15 in the follow-up survey**

Treatment-on-the-treated: 2SLS estimates

Bandwidth		Optimal		Small (1.0)		Middle (3.0)		Full sample		Mean full sample
		No covariates	With Covariates	No covariates	With Covariates	No covariates	With Covariates	No covariates	With Covariates	
Child labour based on the work for excessive hours [1]	Polynomial of order 1	0.055 (0.074)	0.071 (0.065)	0.049 (0.087)		0.060 (0.061)	0.067 (0.057)	0.039 (0.029)	0.044 (0.030)	0.11
	Num observations (bandwidth)	*1,138 (2.2)*	*589 (1.0)*	*589 (1.0)*	*opt*	*1,409 (3.0)*	*1,409 (3.0)*	*1,818*	*1,818*	

Notes: (1) Child labor based on work for excessive hours comprises all children aged 5-13 years in employment; children aged 14-15 years employed for more than 34 hours a week.
Standard errors (in parentheses) are clustered at the municipality level.
** Statistical significance at 10%; ** Statistical significance at 5%; *** Statistical significance at 1%*

Table A5. **RD Estimates of the effect of interventions on employment of eligible females and adult males from eligible households**

Intent-to-treat: OLS estimates

Bandwidth		Optimal		Small (1.0)		Middle (2.0)		Full sample		Mean full sample
		No covariates	With Covariates	No covariates	With Covariates	No covariates	With Covariates	No covariates	With Covariates	
Female in employment	Polynomial of order 1	0.234*** (0.087)	0.230*** (0.084)	0.240*** (0.074)	0.214*** (0.083)	0.243*** (0.056)	0.273*** (0.065)	0.164*** (0.033)	0.194*** (0.039)	0.54
	Num observations (bandwidth)	*295 (0.6)*	*295 (0.6)*	*470 (1.0)*	*470 (1.0)*	*869 (2.0)*	*869 (2.0)*	*1,399*	*1,399*	
Female in own or household business[(1)]	Polynomial of order 1	0.320*** (0.093)	0.250** (0.108)	0.282*** (0.093)	0.228*** (0.080)	0.268*** (0.024)	0.276*** (0.019)	0.186*** (0.039)	0.202*** (0.033)	0.39
	Num observations (bandwidth)	*384 (0.8)*	*295 (0.6)*	*470 (1.0)*	*470 (1.0)*	*869 (2.0)*	*869 (2.0)*	*1,399*	1, 399	
Females in paid employment as main activity	Polynomial of order 1	-0.027 (0.036)	-0.013 (0.033)	-0.035 (0.094)	0.001 (0.102)	-0.039 (0.044)	-0.015 (0.050)			0.12
	Num observations (bandwidth)	*1,399 (full sample)*	*1,399 (full sample)*	*470 (1.0)*	*470 (1.0)*	*869 (2.0)*	*869 (2.0)*	*opt*	*opt*	
Adult male in employment	Polynomial of order 1	0.044 (0.038)	0.036 (0.023)	0.003 (0.048)	0.011 (0.034)	-0.002 (0.029)	-0.006 (0.021)	0.019 (0.016)	0.014 (0.016)	0.93
	Num observations (bandwidth)	*331 (0.6)*	*331 (0.6)*	*528 (1.0)*	*470 (1.0)*	*967 (2.0)*	*967 (2.0)*	*1,591*	*1,591*	
Adult male in own or household business [(1)]	Polynomial of order 1	0.038 (0.065)	-0.017 (0.053)	0.062 (0.092)	0.069 (0.072)	0.071 (0.086)	0.015 (0.079)			0.60
	Num observations (bandwidth)	*1,591 (full sample)*	*1,591 (full sample)*	*528 (1.0)*	*528 (1.0)*	*967 (2.0)*	*967 (2.0)*	*opt*	*opt*	

Notes:
(1) Work as employer, self-employed or unpaid family worker in the main or secondary activities.

Standard errors (in parentheses) are clustered at the municipality level.
** Statistical significance at 10%; ** Statistical significance at 5%; *** Statistical significance at 1%*

Table A6. **RD Estimates of the effect of interventions on employment of eligible females and adult males from eligible households**

Treatment-on-the-treated: 2SLS estimates

Bandwidth		Optimal		Small (1.0)		Middle (2.0)		Full sample		Mean full sample
		No covariates	With Covariates	No covariates	With Covariates	No covariates	With Covariates	No covariates	With Covariates	
Female in employment	Polynomial of order 1	0.399*** (0.125)	0.403*** (0.123)	0.381*** (0.074)	0.331*** (0.091)	0.395*** (0.101)	0.448*** (0.107)	0.252*** (0.055)	0.300*** (0.058)	0.54
	Num observations (bandwidth)	*295 (0.6)*	*295 (0.6)*	*470 (1.0)*	*470 (1.0)*	*869 (2.0)*	*869 (2.0)*	*1,399*	*1,399*	
Female in own or household business (1)	Polynomial of order 1	0.531*** (0.136)	0.439** (0.201)	0.446*** (0.123)	0.352*** (0.121)	0.435*** (0.038)	0.454*** (0.030)	0.287*** (0.046)	0.311*** (0.046)	0.39
	Num observations (bandwidth)	*384 (0.8)*	*295 (0.6)*	*470 (1.0)*	*470 (1.0)*	*869 (2.0)*	*869 (2.0)*	*1,399*	*1,399*	
Females in paid employment as main activity	Polynomial of order 1	*-0.041 (0.053)*	*-0.019 (0.051)*	*-0.055 (0.151)*	*0.002 (0.157)*	*-0.063 (0.069)*	*-0.024 (0.081)*			0.12
	Num observations (bandwidth)	*1,399 (full sample)*	*1,399 (full sample)*	*470 (1.0)*	*470 (1.0)*	*869 (2.0)*	*869 (2.0)*	*1,399 opt*	*1,399 opt*	
Adult male in employment	Polynomial of order 1	0.073 (0.060)	0.063* (0.037)	0.005 (0.076)	0.017 (0.053)	-0.004 (0.047)	-0.010 (0.033)	0.030 (0.023)	0.021 (0.024)	0.93
	Num observations (bandwidth)	*331 (0.6)*	*331 (0.6)*	*528 (1.0)*	*528 (1.0)*	*967 (2.0)*	*967 (2.0)*	1,591	1,591	
Adult male in own or household business (1)	Polynomial of order 1	0.058 (0.098)	-0.026 (0.082)	0.098 (0.145)	0.109 (0.115)	0.116 (0.137)	0.025 (0.127)			0.60
	Num observations (bandwidth)	*1,591 opt*	*1,591 opt*	*528 (1.0)*	*528 (1.0)*	*967 (2.0)*	*967 (2.0)*	*1,591 opt*	*1,591 opt*	

Notes:
(1) Work as employer, self-employed or unpaid family worker in the main or secondary activities.
Standard errors (in parentheses) are clustered at the municipality level.

** Statistical significance at 10%; ** Statistical significance at 5%; *** Statistical significance at 1%*

Table A7. **RD Estimates of the effect of interventions on the attitudes of the household head towards children's employment and schooling**

Intent-to-treat: OLS estimates

Bandwidth		Optimal		Small (1.0)		Middle (2.0)		Full sample		Mean full sample
		No covariates	With Covariates	No covariates	With Covariates	No covariates	With Covariates	No covariates	With Covariates	
My children work, because it will give them greater opportunities in the future	Polynomial of order 1	0.008	0.007	0.033	0.069	0.007	0.003	0.022	0.010	0.62
		(0.123)	(0.127)	(0.114)	(0.125)	(0.111)	(0.113)	(0.047)	(0.042)	
	Num observations (bandwidth)	*838 (1.8)*	*838 (1.8)*	*493 (1.0)*	*493 (1.0)*	*917 (2.0)*	*917 (2.0)*	*1,495*	*1,495*	
Work keeps children out of trouble/gives them direction	Polynomial of order 1	-0.084*	-0.084**	-0.045	-0.022	-0.027	-0.031	-0.027	-0.023	0.58
		(0.048)	(0.039)	(0.043)	(0.046)	(0.027)	(0.026)	(0.055)	(0.055)	
	Num observations (bandwidth)	*592 (1.2)*	*592 (1.2)*	*493 (1.0)*	*493 (1.0)*	*917 (2.0)*	*917 (2.0)*	*1,495*	*1,495*	
Working children are more responsible than non-working children	Polynomial of order 1	-0.002	-0.005	-0.011	0.006	-0.002	0.003	-0.004	0.013	0.85
		(0.030)	(0.036)	(0.065)	(0.077)	(0.039)	(0.038)	(0.025)	(0.026)	
	Num observations (bandwidth)	*1,373 (4.4)*	*1,262 (3.4)*	*493 (1.0)*	*493 (1.0)*	*917 (2.0)*	*917 (2.0)*	*1,495*	*1,495*	
Working children are stronger and healthier than non-working children	Polynomial of order 1	-0.339**	-0.403**	-0.116*	-0.121**	-0.065	-0.076	-0.018	-0.032	0.62
		(0.153)	(0.197)	(0.061)	(0.061)	(0.062)	(0.055)	(0.058)	(0.053)	
	Num observations (bandwidth)	*96 (0.2)*	*96 (0.2)*	*493 (1.0)*	*493 (1.0)*	*917 (2.0)*	*917 (2.0)*	*1,495*	*1,495*	
Education is the only way to succeed in life	Polynomial of order 1	0.071	0.066	0.060	0.054	0.079	0.067	0.018	0.016	0.76
		(0.091)	(0.087)	(0.096)	(0.094)	(0.050)	(0.049)	(0.023)	(0.025)	
	Num observations (bandwidth)	*592 (1.2)*	*592 (1.2)*	*493 (1.0)*	*493 (1.0)*	*917 (2.0)*	*917 (2.0)*	*1,495*	*1,495*	
Education is only one of the factors that influence the success of a person	Polynomial of order 1	-0.105**	-0.110**	-0.011	-0.016	-0.016	-0.015	-0.007	-0.003	0.84
		(0.041)	(0.045)	(0.036)	(0.037)	(0.021)	(0.016)	(0.026)	(0.031)	
	Num observations (bandwidth)	*184 (0.4)*	*184 (0.4)*	*493 (1.0)*	*493 (1.0)*	*917 (2.0)*	*917 (2.0)*	*1,495*	*1,495*	

Bandwidth		Optimal		Small (1.0)		Middle (2.0)		Full sample		Mean full sample
Ensure that my children go to college is far from my economic possibilities	Polynomial of order 1	0.014	0.018			0.011	0.016	-0.026	-0.010	0.87
		(0.043)	(0.047)			(0.042)	(0.045)	(0.024)	(0.018)	
	Num observations (bandwidth)	*493 (1.0)*	*493 (1.0)*	*opt*	*opt*	*917 (2.0)*	*917 (2.0)*	*1,495*	*1,495*	
Education is not important to success in life	Polynomial of order 1	-0.223**	-0.281***	0.019	0.008	-0.054**	-0.057*	0.017	0.003	0.56
		(0.096)	(0.088)	(0.070)	(0.085)	(0.024)	(0.032)	(0.026)	(0.028)	
	Num observations (bandwidth)	*184 (0.4)*	*184 (0.4)*	*493 (1.0)*	*493 (1.0)*	*917 (2.0)*	*917 (2.0)*	*1,495*	*1,495*	

Notes:
Standard errors (in parentheses) are clustered at the municipality level.
** Statistical significance at 10%; ** Statistical significance at 5%; *** Statistical significance at 1%*

Table A8. **RD Estimates of the effect of interventions on the attitudes of the household head towards children's employment and schooling**

Treatment-on-the-treated: 2SLS estimates

Bandwidth		Optimal		Small (1.0)		Middle (2.0)		Full sample		Mean full sample
		No covariates	With Covariates	No covariates	With Covariates	No covariates	With Covariates	No covariates	With Covariates	
My children work, because it will give them greater opportunities in the future	Polynomial of order 1	0.013	0.011	0.053	0.106	0.012	0.005	0.034	0.016	0.62
		(0.208)	(0.211)	(0.185)	(0.202)	(0.185)	(0.187)	(0.075)	(0.067)	
	Num observations (bandwidth)	*838 (1.8)*	*838 (1.8)*	*493 (1.0)*	*493 (1.0)*	*917 (2.0)*	*917 (2.0)*	*1,495*	*1,495*	
Work keeps children out of trouble/gives them direction	Polynomial of order 1	*-0.139**	*-0.137***	*-0.072*	*-0.033*	*-0.044*	*-0.051*	*-0.042*	*-0.035*	0.58
		(0.081)	*(0.067)*	*(0.065)*	*(0.070)*	*(0.045)*	*(0.045)*	*(0.087)*	*(0.086)*	
	Num observations (bandwidth)	*592 (1.2)*	*592 (1.2)*	*493 (1.0)*	*493 (1.0)*	*917 (2.0)*	*917 (2.0)*	*1,495*	*1,495*	
Working children are more responsible than non-working children	Polynomial of order 1	-0.003	-0.007	-0.018	0.009	-0.003	0.005	-0.006	0.020	0.85
		(0.045)	(0.056)	(0.104)	(0.119)	(0.064)	(0.062)	(0.039)	(0.041)	
	Num observations (bandwidth)	*1,373 (4.4)*	*1,262 (3.4)*	*493 (1.0)*	*493 (1.0)*	*917 (2.0)*	*917 (2.0)*	*1,495*	*1,495*	
Working children are stronger and healthier than non-working children	Polynomial of order 1	*-0.630***	*-0.729***	*-0.185**	*-0.188**	*-0.108*	*-0.125*	*-0.028*	*-0.049*	0.62
		(0.249)	*(0.298)*	*(0.103)*	*(0.099)*	*(0.096)*	*(0.083)*	*(0.089)*	*(0.081)*	
	Num observations (bandwidth)	*96 (0.2)*	*96 (0.2)*	*493 (1.0)*	*493 (1.0)*	*917 (2.0)*	*917 (2.0)*	*1,495*	*1,495*	
Education is the only way to succeed in life	Polynomial of order 1	0.118	0.107	0.097	0.083	0.132	0.111	0.027	0.024	0.76
		(0.158)	(0.150)	(0.160)	(0.152)	(0.089)	(0.086)	(0.037)	(0.039)	
	Num observations (bandwidth)	*592 (1.2)*	*592 (1.2)*	*493 (1.0)*	*493 (1.0)*	*917 (2.0)*	*917 (2.0)*	*1,495*	*1,495*	
Education is only one of the factors that influence the success of a person	Polynomial of order 1	*-0.172***	*-0.181***	*-0.018*	*-0.025*	*-0.026*	*-0.024*	*-0.011*	*-0.004*	0.84
		(0.072)	*(0.072)*	*(0.055)*	*(0.054)*	*(0.035)*	*(0.026)*	*(0.040)*	*(0.049)*	
	Num observations (bandwidth)	*184 (0.4)*	*184 (0.4)*	*493 (1.0)*	*493 (1.0)*	*917 (2.0)*	*917 (2.0)*	*1,495*	*1,495*	

Bandwidth		Optimal		Small (1.0)		Middle (2.0)		Full sample		Mean full sample
Ensure that my children go to college is far from my economic possibilities	Polynomial of order 1	0.022	0.028			0.019	0.027	-0.041	-0.016	0.87
		(0.071)	(0.075)			(0.070)	(0.074)	(0.036)	(0.029)	
	Num observations (bandwidth)	*493 (1.0)*	*493 (1.0)*	*opt*	*opt*	*917 (2.0)*	*917 (2.0)*	*1,495*	*1,495*	
Education is not important to success in life	Polynomial of order 1	*-0.366***	*-0.465****	*0.030*	*0.012*	*-0.091***	*-0.094**	*0.026*	*0.005*	0.56
		(0.185)	*(0.174)*	*(0.109)*	*(0.131)*	*(0.043)*	*(0.056)*	*(0.039)*	*(0.043)*	
	Num observations (bandwidth)	*184 (0.4)*	*184 (0.4)*	*493 (1.0)*	*493 (1.0)*	*917 (2.0)*	*917 (2.0)*	*1,495*	*1,495*	

Notes:
Standard errors (in parentheses) are clustered at the municipality level.
** Statistical significance at 10%; ** Statistical significance at 5%; *** Statistical significance at 1%*