AMERICAN INSTITUTES FOR RESEARCH®

Research and Evaluation, International

Impact Evaluation of UNICEF's Let Us Learn Cash Transfer Supplement Programme in Madagascar

Baseline Report

APRIL 2017

Impact Evaluation of UNICEF's Let Us Learn Cash Transfer Supplement Programme in Madagascar

Baseline Report

April 2017

Mitchell Morey
David Seidenfeld

AMERICAN INSTITUTES FOR RESEARCH®

1000 Thomas Jefferson Street NW
Washington, DC 20007-3835
202.403.5000

www.air.org

8607_2/17

Contents

Tables

Page

Figures

Page

Maps

Page

Abbreviations and Acronyms

AIR	American Institutes for Research
FID	Fund for International Development
TMDH	Transferts monétaires pour les droits humains
UNICEF	United Nations Children's Fund
LUL	Let Us Learn Cash Transfer Program

Acknowledgments

This report was written by American Institutes for Research (AIR) under contract to UNICEF Madagascar.

We thank UNICEF Madagascar for the opportunity to carry out this study and for its financial and technical support. We would further like to recognize the many individuals and organizations without whom it would not have been possible to complete this study.

Our special thanks go to Gabriela Guerrero Serdán, Ndriakita Solonionjanirina, Ranto Ramananjato, and Paul Marie Petroch of UNICEF Madagascar for their technical support during the research design and implementation of the evaluation field work. We also appreciate the contributions of Ministère de la Population, de la Protection Sociale et de la Promotion de la Femme (MPPSPF), who oversees and coordinates the national programme and the Fonds d'Intervention pour le Développement (FID) who is in charge of its implementation. We also thank the World Bank for the partnership and supporting the national cash transfer program of which the Let Us Learn program is a top-up.

We thank Josh Martin, Jiyoung Han, and Tina Razafinimanana of Ideas42 for their support during the implementation of the fieldwork. We gratefully acknowledge feedback on the initial evaluation design by members of the UNICEF Office of Research Review Group, including in particular Sudhanshu Handa (now at the University of North Carolina at Chapel Hill) and Amber Peterman.

Our acknowledgments would be incomplete without mentioning our team of very able research assistants. We acknowledge the input of the team of enumerators and supervisors from CAETIC Developpement, whose dedication during data collection ensured that the data collected were of high quality.

The patience exercised by the Madagascar households, community leaders, and community members during interviews is also gratefully acknowledged. It is our hope that the insights from the information they provided will translate into valuable support for their communities.

Mitchell Morey
David Seidenfeld

Executive Summary

This report provides the baseline results of an impact evaluation of the Let Us Learn (LUL) supplementary cash transfer programme in Madagascar. In 2016, the United Nations Children's Fund (UNICEF) started piloting an education-based cash transfer programme designed to support children's transition to and continued enrolment in secondary school. American Institutes for Research (AIR) was contracted by UNICEF Madagascar to help design and implement an impact evaluation of the programme (with an experimental design), based on baseline, midline, and endline followup data.[1] The purpose of the impact evaluation is to monitor the programme's effects on recipients and provide evidence for decisions about the programme's future.

The primary goals of this baseline report are to (1) outline the experimental design for identifying households to participate in the impact evaluation (the study sample); (2) describe the beneficiary households prior to them receiving the programme; and (3) check for equivalence between the evaluation's two treatment arms and control group (i.e., treatment households that receive the programme and control households that do not receive the programme). Describing the beneficiaries at baseline helps stakeholders to check that they have accurately targeted the type of people they want to benefit from the programme. It also helps stakeholders to understand where the programme might have effects, and to identify areas where it is less likely to impact the lives of beneficiaries. We also investigate baseline equivalence in this report (a technical aspect of the study's design) because it helps to determine what factors need to be controlled for in later analyses of impact.

The Programme

The LUL supplementary cash transfer augments the Monetary Transfer for Human Development (TMDH) to promote children's transition to and continued enrolment in secondary school. TMDH is a monthly cash transfer that aims to alleviate the burden on vulnerable households with children. It provides an unconditional monetary transfer to households with young children not yet in school and a monetary transfer to households with primary school-aged children conditional on school attendance. UNICEF designed the LUL programme to increase the transfer to TMDH beneficiary households with a supplementary transfer to support children's transition to and continued enrolment in secondary school. The transition from primary school (7ème) to lower secondary school (6ème) at roughly 10 years of age is a point at which many students leave school. The LUL supplement is a child-targeted transfer based on the child's age and status in school. First, households with a child in the final year of primary school receive a 10,000 Ariary bonus at the beginning and again at the end of the school year. Second, households with a child attending lower secondary school receive monthly transfers of 10,000 Ariary. Distribution of the money occurs in alternating months at the same time the TMDH transfer occurs. LUL transfers are conditioned on the child attending school at least 80 percent of the time.

The LUL and TMDH transfers began in October 2016 and will continue throughout the 2016–2017, 2017–2018, and 2018–2019 school years. We find that 62 percent of the beneficiaries in LUL communes could qualify for the LUL transfer. Some areas will have more LUL-eligible

[1] Ideas42 was contracted by UNICEF to conduct the baseline data collection.

children than others; the largest district is Faratsiho, with 4,575 LUL-recipient children, while the smallest is Toamasina II, with 1,271 children eligible for the LUL supplement.

Evaluation

The impact evaluation of UNICEF's LUL supplement to the TMDH transfer will be a 3.5-year, mixed methods, multi-armed, randomized controlled trial design. The study will generate impact estimates for the effect of the LUL supplement on key outcomes affecting children. It will compare outcomes for households that receive no transfer (control), households that receive the TMDH transfer but not the LUL supplement (TMDH-only), and households that receive the TMDH and LUL transfers (LUL). We will provide rigorous impact estimates because the treatment arm was randomly assigned at the commune level using a two-step process. During the first step, 38 of the 52 communes were randomly assigned to receive the TMDH transfer, while the remaining 14 communes would receive no transfer. During the second step, 26 of the 38 communes were randomly assigned to receive the LUL supplement in addition to the TMDH transfer. We can compare outcomes for all three treatment arms because the random assignment ensures that the communes were similar until the transfer began. Because of random assignment, we can attribute any differences at midline or endline to the transfers.

Education for LUL-Eligible Children (11- to 18-Years Old)

The primary goal of the programme is to increase child enrolment and attendance in school and reduce household reliance on harmful coping strategies, such as child labour and early marriage. We found that, on average, 59 percent of LUL-eligible children reported having been enroled in school during the previous school year, but the enrolment rate consistently decreased by age: 11-year olds (91 percent), 14-year olds (about 56 percent), and 17-year olds (27 percent). Almost all children 11 and 12 years old were enroled in school, thus the programme has little room to improve this indicator for them. However, the programme could have a big impact on older children in the sample, whose enrolment rates are well under 50 percent. Half of the children not enroled in school during the previous year were out of school primarily due to cost; the cash transfer could help to alleviate this barrier. At baseline, we found that LUL-eligible households spend $7.92 per child on school related expenses, not including the forgone labour for the time the child spends in school. Almost all children attend public school (90 percent), and 8 percent attend religious school.

Child Labour for LUL-Eligible Children (11- to 18-Years Old)

We also found that child labour rates increase with age and are quite high for the second half of the age distribution. Just over one-third of children in this age group work for pay. However, the percentage varies by age, with many more children working for pay at the older end of the age range compared to the younger end of the age range. Less than 10 percent of 11-year olds work for pay, roughly 30 percent of 14-year olds work for pay, and more than 65 percent of 17-year olds work for pay. Not only are a lot of children working for pay, but they work a lot of hours. The average LUL-eligible child reported working more than 47 hours during the past two weeks. The cash transfer could help to replace the income from child labour, freeing up time for older children to attend school.

Households

The median beneficiary household in the sample contains seven people, including almost two children between 11- and 18-years old (LUL cash transfer recipient age) and one child between 6- and 10-years old (TMDH transfer). We therefore expect the average beneficiary household to receive multiple transfers each month because they have more than one child who qualifies for the programme. The beneficiary sample is primarily made up of working-age adults and children, with only 1 percent aged 65 years or older. On average, adults in the sample completed only a few years of education, do not work for pay, and are unlikely to go to the clinic if they are sick. Although 75 percent of adults in the sample attended school at some point in their lives, the average adult completed only 3.67 years of education. Yet, adults expect their children to complete 13 years of education on average, so they seem to desire a different education outcome for their children compared with themselves.

Baseline Equivalence

In addition to describing the beneficiary sample, we also investigated baseline equivalence between the treatment and control groups. We care about baseline equivalence purely as a technical aspect of the study design because it helps to assess the internal validity of the study—that is, the ability of the study to attribute causality to the programme when differences are observed between the treatment and control groups at the end of the study. It also tells us what factors we need to control for in our later analyses of impact. We found that the TMDH and control groups serve as good counterfactuals because they are very similar to the treatment group across domains of interest to the programme, both in terms of outcome indicators and demographic characteristics associated with the outcomes of interest. The study used random assignment to create the three study arms of the study. Only a few indicators differ between the arms. The difference is not consistent across indicators, and the magnitude of the difference is quite small. This suggests that the study design has produced a strong counterfactual that will enable us to attribute differences between treatment and control groups to the cash transfer programme (and not other factors) at the end of the study.

I. Introduction

This report provides the baseline results of an impact evaluation of the Let Us Learn (LUL) Cash Transfer Program in Madagascar (in Malagasy, Ndao Hianatra). In 2016, the United Nations Children's Fund (UNICEF) started piloting an education-based cash transfer programme designed to support children's transition to and continued enrolment in secondary school. American Institutes for Research (AIR) was contracted by UNICEF Madagascar to help design and implement an impact evaluation of the programme (with an experimental design), based on baseline data, midline, and endline followup data.[2] The purpose of the impact evaluation is to monitor the programme's effects on recipients and provide evidence for decisions about the programme's future. The primary goals of this baseline report are to (1) outline the experimental design for identifying households to participate in the impact evaluation (the study sample); (2) describe the beneficiary households prior to them receiving the programme; and (3) check for equivalence between the evaluation's two treatment arms and control group (i.e., treatment households that receive the programme and control households that do not receive the programme).

Context

The socioeconomic situation in Madagascar has deteriorated over the past decade. In February 2009, the president of Madagascar was forced from office and the mayor of the capital assumed power. Many members of the international community withdrew non-emergency support. Foreign aid returned to the country after an internationally recognized election that brought a new president to power in 2014. However, the gross domestic product per capita was still 10 percent lower in 2015 than at its peak in 2008 ($455.22 vs $409.92).

Madagascar has low standards of living that leave the education system without the resources to meet the educational needs of children. Children in Madagascar face direct consequences of this poverty. About 47 percent of children are chronically malnourished, 28 percent are engaged in child labour, and less than 40 percent of children complete primary school.[3]

Schools in Madagascar primarily operate under the auspices of the public schools system. Among children enroled in schools in Madagascar, 71 percent attend public schools and 29 percent attend private schools.[4] The Ministry of National Education oversees public education in Madagascar. There are four levels of public education in Madagascar. Students must pass a national exam after each level of school if they want to progress to the next. The four levels of school in order are:

1. Primary (Ecole Primaire Publique): Children enter the public school system in 11th/11ème and continue in primary school until they reach the final level of primary school, 7th/7ème.
    - ⇒ CEPE (Certificat d'Etudes Primaires Elémentaire): To pass to lower secondary, a student must pass the CEPE exam.

[2] Ideas42 was contracted by UNICEF to conduct the baseline data collection.
[3] UNICEF: State of the World's Children 2015
[4] World Bank: World Development Indicators

2. Lower Secondary (College d'Engeignement General): Children's first year of lower secondary school is spent in 6th/6ème. This level of school lasts for four years and ends with 3rd/3ème.

    ⇒ BEPC (Brevet d'Études du Premier Cycle): To pass to upper secondary, a student must pass the BEPC exam.

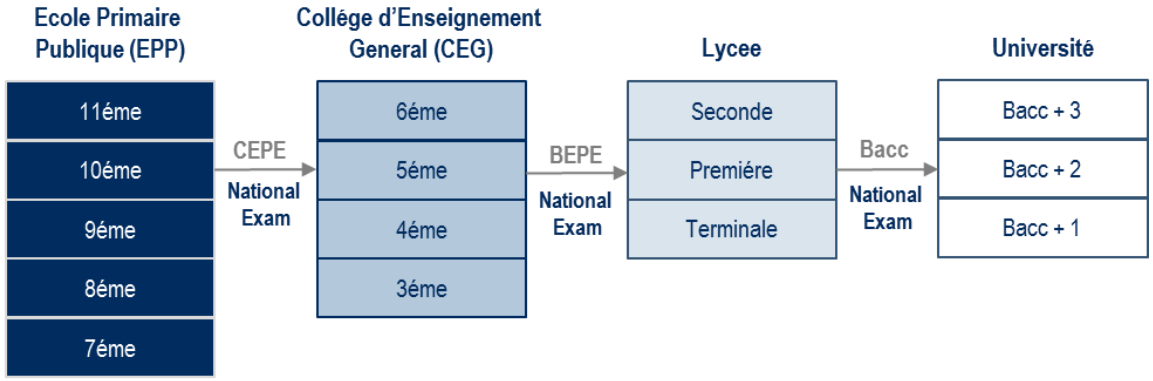
3. Upper Secondary (Lycée): Upper secondary school lasts three years. Students complete Seconde, Premiére, and Terminale in that order. There are three different tracks: A, C, and D.

    ⇒ Baccalaureate: To pass to university, students must pass the Baccalaureate exam.

4. University: University degrees typically require three years of study. There is a network of public universities, which are centered mainly in provincial capitals.

Many children drop out of school before transitioning from one level of school to another. About 79 percent of children attend primary school, whereas school attendance drop to only 27 percent for secondary school.[5] Furthermore, grade repetition is common in Malagasy schools and is likely to cause a student to drop out.[6]

Figure 1.1. Malagasy School System



Source: Morey 2010.

Background

The LUL supplementary cash transfer augments the Monetary Transfer for Human Development (TMDH) to promote children's transition to and continued enrolment in secondary school. The Government of Madagascar's Ministry of Population, Social Protection, and Women (MPPSPF) initiated TMDH as part of a coordinated effort to encourage children to enrol in school, with a particular focus on vulnerable children. MPPSPF selected Fonds d'Intervention pour la Developpment (FID) to execute the program using its experience working with other government agencies and non-government actors. The World Bank and UNICEF sit on a coordinating committee that contributes to TMDH and LUL implementation.

[5] UNESCO Education for All Assessment

[6] Wills, A. R., Reuter, K. E., Gudiel, A. A., Hessert, B. P., & Sewall, B. J. (2014). Barriers to student success in Madagascar. *Global Education Review, 1*(4), 114–134.

TMDH is a monthly cash transfer that aims to alleviate the burden on vulnerable households with children. It provides an unconditional transfer to households with young children not yet in school and a transfer to households with primary school-aged children conditional on school attendance. TMDH is part of a larger effort to increase income, promote access to basic services, protect vulnerable groups, and consolidate social protection programmes.

The TMDH programme targets areas with low school enrolment rates, high malnutrition, and common food insecurity. Out of 53 candidate communes, 39 communes (in six districts across four provinces) were randomly chosen for TMDH eligibility during an event including representatives of each locality. Thirty-nine thousand beneficiaries live in the districts of Mahanoro and Toamasina II in the east, the district of Vohipeno in the southeast, the district of Betioky in the south, and the districts of Faratsiho and Ambohimahasoa in the central plateau.

In each TMDH commune, all villages receive the TMDH transfer. Each village in a transfer commune formed a social protection committee to identify all households that met the four TMDH pre-eligibility criteria: (a) be a village resident, (b) have a child 10 years of age or younger, (c) be among the most in need according to the committee, and (d) be validated as such by the community. Each pre-eligible household completed a proxy means test to determine the household's vulnerability level. Households deemed vulnerable by the proxy means test could register for the TMDH.

All beneficiaries will receive the TMDH on a monthly basis. It will provide a monthly transfer of 10,000 Ariary (approximately 3.30 USD) to poor households with children up to age 10. The TMDH transfer will further provide a 5,000 Ariary ($1.65) per child enroled in/attending primary school. Households maintain eligibility if they have a child 5 years of age or younger or if they have a 6- to 10-year-old child who attends primary school 80 percent of the time. These transfers should focus on the goals of supporting children's introduction to primary school and promoting improved nutrition among younger children.

MPPSPF and partners designed the LUL programme to increase the transfer to TMDH beneficiary households with a supplementary transfer to support children's transition to and continued enrolment in secondary school. The transition from primary school (7ème) to lower secondary school (6ème) at roughly 10 years of age is a point at which many students leave school. While 57 percent of children in Madagascar complete primary school, only 31 percent of children enrol in lower secondary school.[7] The LUL transfer targets children at the point when these 26 percent leave school. UNICEF identified three goals for the LUL programme to accomplish by 2019:

1. A substantial number of girls and boys registered in school and the dropout rate is reduced
2. A large proportion of children have access to basic education, especially the most excluded children
3. Social protection dialogues are in place, as well as measures to incorporate social protection into relevant programme areas

[7] Plan d'action Madagascar 2012: un plan audacieux pour le développement rapide.

UNICEF will use the LUL supplement transfer to extend the support of TMDH to benefit older siblings of lower secondary school age. From the 39 TMDH communes, 27 were randomly assigned to receive the LUL supplement during a separate drawing involving local representatives. To qualify, potential beneficiaries must meet TMDH criteria and (a) have a child in the final year of primary school or (b) have an 11- to 18-year-old child who has not completed lower secondary school nor dropped out of school during the previous school year. Thus, all LUL recipients will have at least two children—one younger (TMDH beneficiary child) and one older (LUL beneficiary child). The eligibility criteria and conditions of the LUL and TMDH transfers are summarized in Table 1.1.

The LUL and TMDH transfers began in October 2016 and will continue throughout the 2016–2017, 2017–2018, and 2018–2019 school years. Based on preliminary estimates, 51 percent of the beneficiaries in LUL communes will qualify for the LUL transfer based solely on their age. A further 5.4 percent of children should qualify for the LUL transfer based on enrolment in Septième. This assumption implies that approximately 7,400 households will receive the LUL transfer. Some areas will have more LUL-eligible children than others; the largest district is Vohipeno, with 5,640 individuals in LUL-eligible households, while the smallest is Toamasina II, with 1,217 individuals in LUL-eligible households. Roughly 45% of LUL supplement households will have a single LUL-eligible child and half will have multiple LUL-eligible children.

The LUL supplement is a child-targeted transfer based on the child's age and status in school. First, households with a child in the final year of primary school receive a 10,000 Ariary bonus at the beginning and again at the end of the school year. Second, households with a child attending lower secondary school receive monthly transfers of 10,000 Ariary. Distribution of the money occurs in alternating months at the same time the TMDH transfer occurs. LUL transfers are conditioned on the child attending school at least 80 percent of the time. Thus, a household may leave the programme if the qualifying child drops out, finishes school, or dies.

Table 1.1. Summary of TMDH and LUL Transfers

Transfer Type	Amount	Age (years) Requirement	Frequency	Conditions
TMDH base transfer	10,000 Ariary/household	0–10	Monthly	None for children 0- to 5-years old; school attendance for children 6- to 10-years old
TMDH primary school incentive	5,000 Ariary/child	6–10	Monthly	Child attends primary school; payment capped at two children/household
LUL 7ème bonus	10,000 Ariary/child	Any age	Twice: beginning and end of school year	Child enroled in 7ème.
LUL secondary school incentive	10,000 Ariary/child	11–18	Monthly	First transfer unconditional; subsequent transfers require school attendance; payment capped at two children/household

II. Research Questions

The overarching research questions below will guide the impact evaluation.

Relevance

- How relevant is the LUL-cash component for target groups?
- How relevant is the LUL-cash component to meet government needs and priorities?
- To what extend the program was aligned to policies and strategies in Madagascar; and how relevant is to implement the social protection policy in Madagascar?

Efficiency

- Where the program implemented as planned?
- Have beneficiaries received complete payments on time?
- Where capacities built or in place to ensure implementation?

Effectiveness

- Were the planned objectives and outcomes of the project achieved?
- Has there been any differentiated effects with regards to gender and regional contexts?
    1. Does the program affect male- and female-headed households differently?

Impact

- Has the program had an impact targeted families and children? Are there any differences by gender and regional context?
    1. Does the LUL supplement increase secondary school attendance?
        a. Do beneficiary children enrol at higher rates?
        b. Do beneficiary children attend more frequently?
    2. Do children receiving the LUL supplement have greater success completing and advancing grade levels?
        a. Do beneficiary children pass their last grade?
        b. Do beneficiary children progress to the next grade in the upcoming year?
    3. Do children receiving the LUL supplement spend more time studying?
- What has been the differentiated impact of the LUL top-up on household's consumption, food security, production, savings and revenues?
    1. Do LUL recipient households spend more money on children's needs?
        a. Does the household spend more on children's clothing?
        b. Does the household spend more on school fees?
        c. Does the household spend more on school supplies?
- What has been the differentiated impacts of the LUL top-up on women's empowerment?
    1. Do parents receiving a LUL supplement have higher aspirations for their child's future?
        a. Do beneficiary parents plan for their children to complete more years of school?

b. Do beneficiary parents plan for their children to delay marriage longer?

- Has the program had an effect on poverty reduction in selected districts and/or reduce vulnerability of poor households?
  1. Does the LUL supplement reduce child labour?
     a. How does time spent on paid labour change?
     b. How does time spent on unpaid labour change?
     c. How does time spent on household chores change?
  2. Are LUL recipient children more likely to possess basic personal items?
     a. Is the status of children's UNGASS material needs improved?
        i. Do they own a blanket?
        ii. Do they own a second set of clothes?
        iii. Do they own a pair of shoes?
  3. Are LUL recipient children healthier due to the transfer?
     a. Are they sick less often?
     b. Are sick children more likely to receive medical treatment?
  4. Do LUL recipient households make greater investments in productive assets than TMDH-only households?
     a. Are beneficiaries more likely to own livestock?
     b. Are beneficiary households more likely to own and rent out land?
     c. Do beneficiaries improve the quality of their housing materials?

<u>Partnerships</u>

- To what extent were partnerships sought of and synergies created with other national and international stakeholders?
- Where mechanism put in place to ensure coordinated actions?
- Has the program approached leveraged resources of other stakeholders and government?

<u>Sustainability</u>

- To what extend financial resources (from national funds or donors) are likely to continue after the program?
- Is national support and involvement as well as of other stakeholders likely to continue after the three year program period?

III. Theory of Change

Policy-relevant research should be built on a theory of change that maps out the causal chain across activities, outputs, outcomes, and impacts, as well as the assumptions that underlie that theory of change.

The LUL supplement transfer provides cash to households with older children to support lower secondary school enrolment. All beneficiaries qualify for the LUL transfer because they have both young and adolescent children. Also, the TMDH proxy means test determined they were among the most vulnerable. For households already consuming so little, the marginal propensity to consume will be almost 100 percent; that is, they will spend all of any additional income rather than save it. Thus, we expect the immediate impact of the programme will be to raise spending levels on school fees and associated school costs. With any remaining money, beneficiaries would be able to increase spending on food, clothing, and shelter, some of which will influence children's health, nutrition, and material well-being. Once immediate basic needs are met, and possibly after a period of time, the sustained influx of cash beyond the cost of school may then trigger further responses within the household economy; for example, by providing room for investment and other productive activity, the use of school services for nontargeted siblings, the use of health or other social services, and the ability to free up children from work in the time not spent in school.

Figure 3.1 brings together these ideas in a conceptual framework that shows how the LUL supplement can affect household activities, the causal pathways involved, and the potential moderator and mediator factors. The diagram is read from left to right. The immediate impact of the transfer is to subsidize the cost of school fees so enrolment is less costly or even free. If the value of the transfer exceeds the total cost of education, including foregone wages earned by the child, then the household will have extra money available to meet members' basic needs or even invest in productive assets. Sociological and economic theories of human behaviour suggest that the impact of the cash may work through several mechanisms (mediators), including the quality of schools that parents select for their children, households' proximity to those schools, and the amount paid for school fees. Similarly, the impact of the cash transfer may be weaker or stronger depending on local conditions in the community. These moderators include the child's gender or disability status, return on educational investment, parents' time preferences and education level, and shocks. We believe being a girl or disabled may make a child particularly vulnerable to exclusion from the transfer's benefits. Moderating effects are shown with dotted lines that intersect with the solid lines to indicate that they can influence the strength of the direct effect.[8]

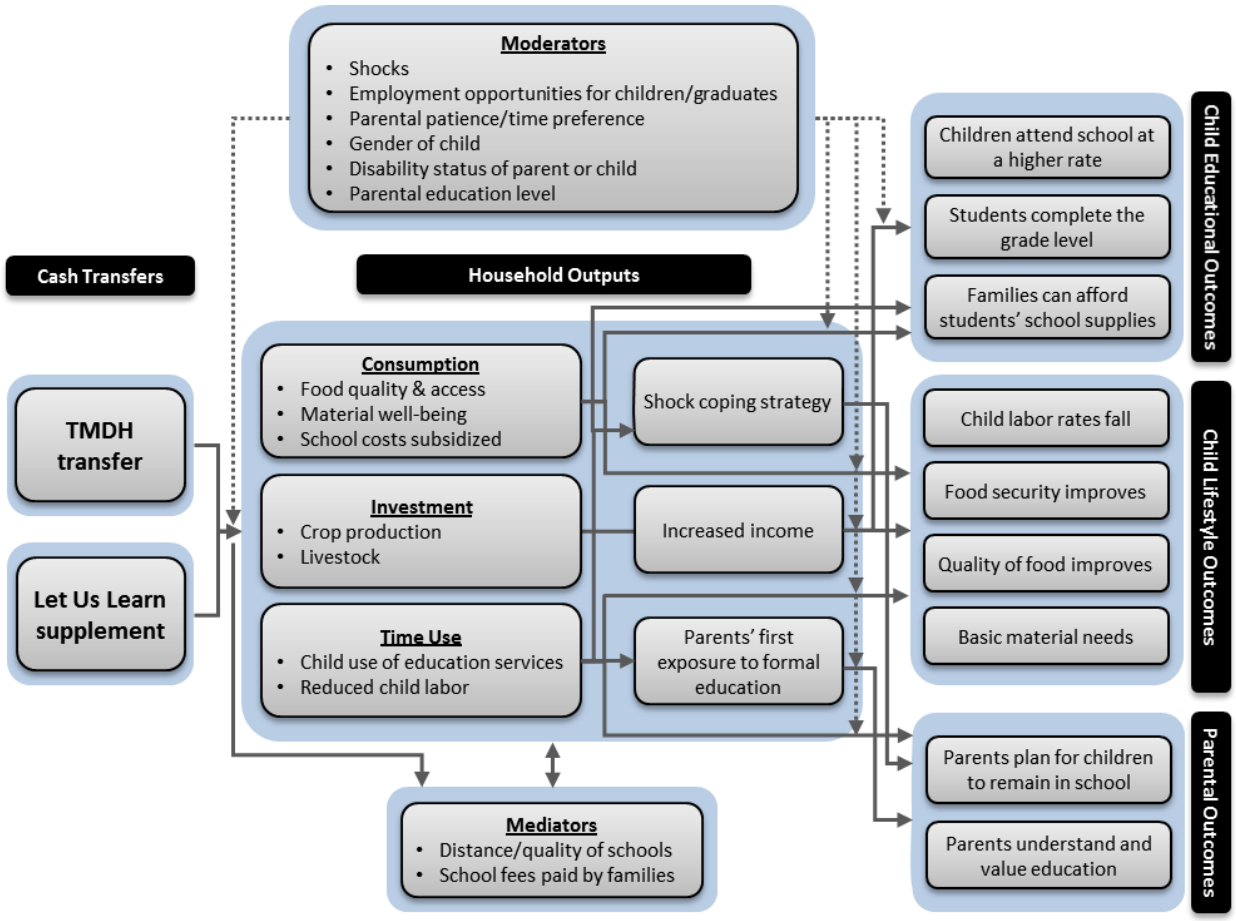
The next step in the causal chain is the effect on children—which we separate into effects on a child's educational outcomes, a child's lifestyle outcomes, and parental outcomes—because the transfer can affect different dimensions of a child's life. It is important to recognize that any potential impact of the programme on children must work through the household by its effect on

[8] A mediator is a factor that can be influenced by the programme and so lies directly within the causal chain. A moderator, in contrast, is not influenced by the programme. Thus, service availability is a moderator, whereas women's bargaining power may be either a moderator or a mediator depending on whether it is itself changed by the programme. Maternal literacy is a moderator and not a programme outcome, unless the programme inspires caregivers to learn to read and write.

spending or time allocation decisions (including school attendance and use of other services). The link between the household and children can also be moderated by environmental factors, such as distance to schools, as indicated in the diagram, and household-level characteristics themselves, such as the parents' willingness to forego a child's current earnings. Indeed, from a theoretical perspective, some factors cited as mediators may actually be moderators, such as women's empowerment. We can test for moderation versus mediation through established statistical techniques,[9] and this information will be important to help us understand the actual impact of the programme on behaviour.

Figure 3.1 identifies some of the key indicators along the causal chain that we analyse in the evaluation of the LUL supplement transfer. These measures are consistent with the log frame of the project and are all measured using established items in existing national sample surveys, such as the Living Conditions Monitoring Survey.

Figure 3.1. Theory of Change



[9] Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology*, *51*(6), 1173–1182.

IV. Study Design

The impact evaluation of UNICEF's LUL supplement to the TMDH transfer will be a 3.5-year, mixed methods, multi-armed, randomized controlled trial design. The study will generate impact estimates for the effect of the LUL supplement on key outcomes affecting children. It will compare outcomes for households that receive no transfer (control), households that receive the TMDH transfer but not the LUL supplement (TMDH-only), and households that receive the TMDH and LUL transfers (LUL).

We will provide rigorous impact estimates because the treatment arm was randomly assigned at the commune level using a two-step process. During the first step, 39 of the 53 communes were randomly assigned to receive the TMDH transfer, while the remaining 14 communes would receive no transfer. During the second step, 20 of the 39 communes were randomly assigned to receive the LUL supplement in addition to the TMDH transfer. One TMDH commune received transfers as part of a pilot so the total study sample drops to 52 communes (12 TMDH). We can compare outcomes for all three treatment arms because the random assignment ensures that the communes were similar until the transfer began. Because of random assignment, we can attribute any differences at midline or endline to the transfers.

Sampling

Baseline data collection was the first step in assembling a multiyear longitudinal sample. The study will collect three rounds of data: baseline (August–December 2016), 1-year followup (mid-2017), and endline (mid-2019). Households in both treatment and control groups will complete surveys during each round. Participants of the baseline survey were randomly selected from a roster of eligible households.

All survey respondents qualified for the study by scoring below a threshold set in a proxy means test. The proxy means text occurred roughly one to two months before the baseline survey. Surveys in Betioky, Mahanoro, Toamasina II, and Vohipeno occurred in August and September 2017. Due to delays in the proxy means test, surveys in Ambohimahasoa and Faratsiho occurred in November and December 2017.

At baseline, 4,484 households participated in the survey. Of these, 2,799 households had children meeting LUL age requirements: 423 LUL-eligible comparison observations in TMDH-only communes, 395 LUL-eligible control households, and 1,981 LUL supplement recipients. Six communes in the LUL sample representing 343 households were originally part of the TMDH-only group. A random selection reassigned them to LUL treatment to satisfy programmatic requirements. Table 4.1 summarizes the number of observations in each treatment arm. LUL communes were purposely oversampled to better understand the effects of the transfer.

Table 4.1. Baseline Sample Size

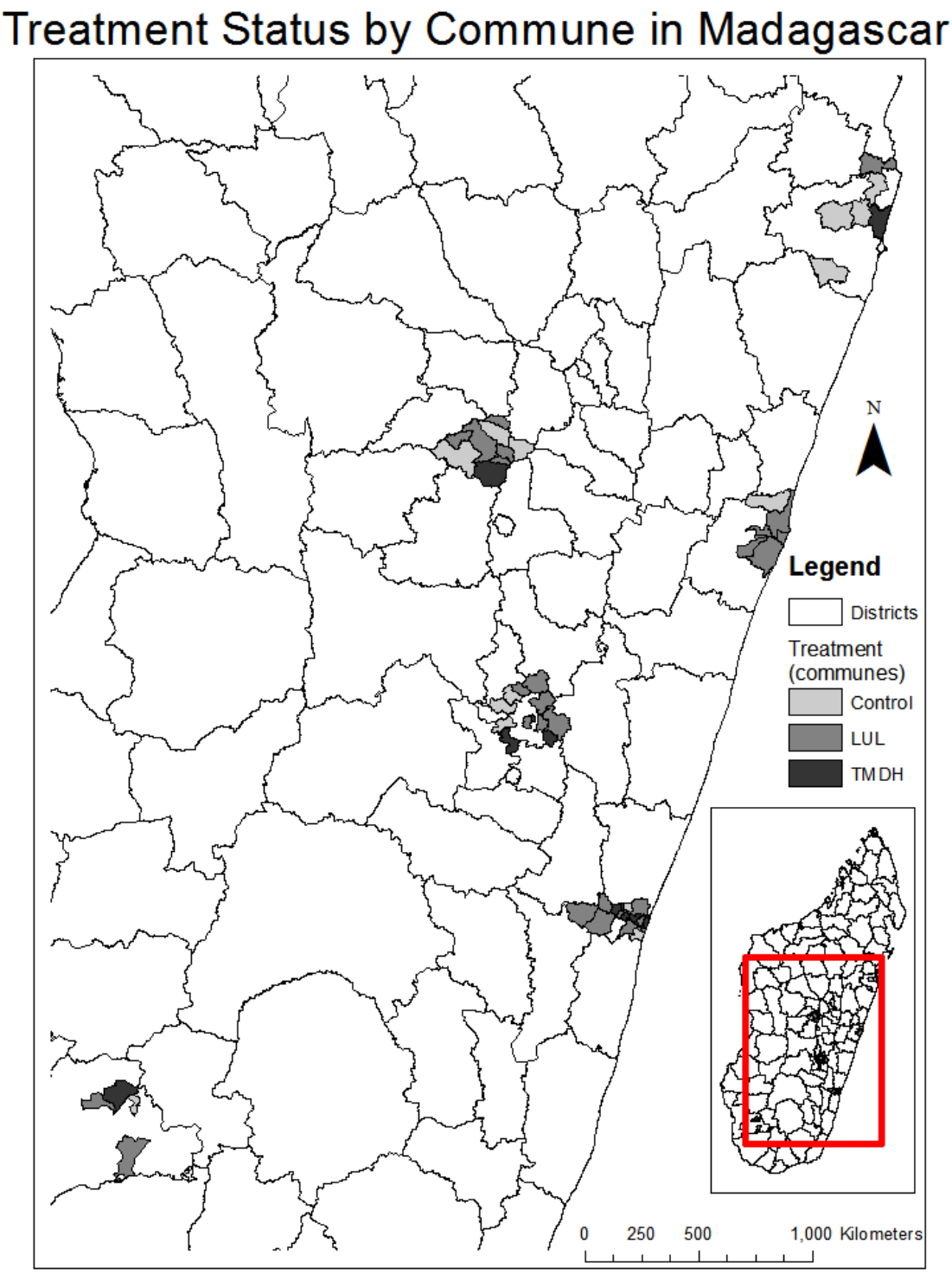
	Number of communes	Main sample individuals	Main sample households	LUL-Eligible individuals	LUL-Eligible households
Control	14	3,864	601	2,816	395
TMDH-only	12	3,901	687	2,726	423
LUL recipient	26	19,672	3,196	13,801	1,981
Total across communes	**52**	**27,437**	**4,484**	**19,343**	**2,799**

This study focuses only on a subset of respondents—those meeting both the TMDH and LUL inclusion criteria. We excluded households that do not meet LUL eligibility criteria. About 62 percent of households (70.5 percent of individuals studied) are eligible for the LUL supplement, meaning they have a 0- to 10-year-old child (TMDH requirement) and an 11- to 18-year-old child (LUL requirement). So, our analysis includes 2,799 households of the 4,484 that completed a survey. According to Table 4.2, the distribution of communes varies across treatments; the total distribution of beneficiaries across districts will vary accordingly. The programmatic requirements for a minimum number of beneficiaries skews the distribution toward LUL communes. Map 4.1 shows the location of the 52 communes in the study. The communes are grouped into six districts.

Table 4.2. Geographic Distribution of Sample Communes

District	Number of control communes	Number of TMDH-only communes	Number of LUL communes	Total
Faratsiho	3	1	5	9
Ambohimahasoa	3	3	6	12
Vohipeno	2	6	9	17
Mahanoro	1	0	3	4
Toamasina II	4	1	1	6
Betioky	1	1	2	4
Total	**14**	**12**	**26**	**52**

Map 4.1. Location of Study Areas



V. Overview of Baseline Data Collection

UNICEF and its research partners hired ideas42 to oversee data collection activities. In turn, ideas42 hired CAETIC Developpement, a locally based research and data collection organization, to oversee and coordinate quantitative data collection via household questionnaires in the Ambohimahasoa, Betioky, Faratsiho, Mahanoro, Toamasina II, and Vohipeno districts. CAETIC and ideas42 facilitated data collection training among data collectors during the first week of August 2016. AIR and ideas42 accompanied CAETIC to the field to observe the first week of data collection. CAETIC began collecting household data on August 12, 2016, in LUL, TMDH, and control communes in Betioky and Toamasina II.

Outcomes and Measures of Interest

The evaluation relies on a single household survey instrument to collect quantitative baseline data. The theory of change and research questions motivate the domains covered in the baseline data collection. These domains, which are displayed in Table 5.1, include the following: household demographics, living conditions, economic and poverty status, parent characteristics, and child characteristics. Indicators in these domains relate to control variables, moderating variables, or outcome variables. Control variables are those that would not likely change as a result of the programme but might affect the outcome variable, such as household size, marital status, and parents' education level. Moderating variables might affect the programme's ability to affect outcomes, such as distance to the nearest school and access to other programmes and services. Outcome variables are indicators that the programme strives to affect as either intermediate or final goals, such as child enrolment and attendance in school, child labour, child health, and child food security.

Table 5.1. Topics in Survey Questionnaire

Household Survey
Roster
Education
Main economic activity — 5+ years old
Income
Household expenditures
Agricultural production
Household enterprises
Female empowerment
Self-assessed poverty and food security

Data Collection Challenges

The nature of the study resulted in several data collection challenges, for example:

1. **Delays in proxy means tests.** Proxy means tests were not completed on time, so there was a significant delay in data collection in two of the six districts.
2. **Access to communities.** Some rural areas of the study were very suspicious of outsiders coming into their community. Community leaders told CAETIC that some households were afraid that the data collection activities were part of a plan to kidnap children. The study team worked with local leaders to ease these concerns.
3. **Delays in survey administration.** There were significant delays in the implementation of the baseline survey. This is primarily due to delays in completing the proxy means test. The proxy means test was completed by several different data collection firms. Once ready for the survey, CAETIC was able to complete baseline data collection in a timely manner.
4. **Refusal to complete the survey.** Potential respondents occasionally refused to complete the survey. Some refused the survey out of distrust, as discussed previously. Others had letters from FID stating that they had been selected as a control commune that would not receive the transfer.

Throughout the data collection process, CAETIC maintained close communication with ideas42 and AIR.

VI. Sample Description

It is important to understand the conditions of beneficiaries before receiving the transfer so that we can evaluate whether the programme affects key outcomes, can control for confounding factors, and can understand how moderating factors might affect the transfer's ability to produce effects. Here, we summarize the characteristics of transfer beneficiaries—that is, households targeted to receive the LUL supplement cash transfer—focusing on older children (11- to 18-years old) who can receive LUL and TMDH, younger children (6- to 10-years old) who can receive only TMDH, household demographics, housing conditions, economic well-being, and adults.

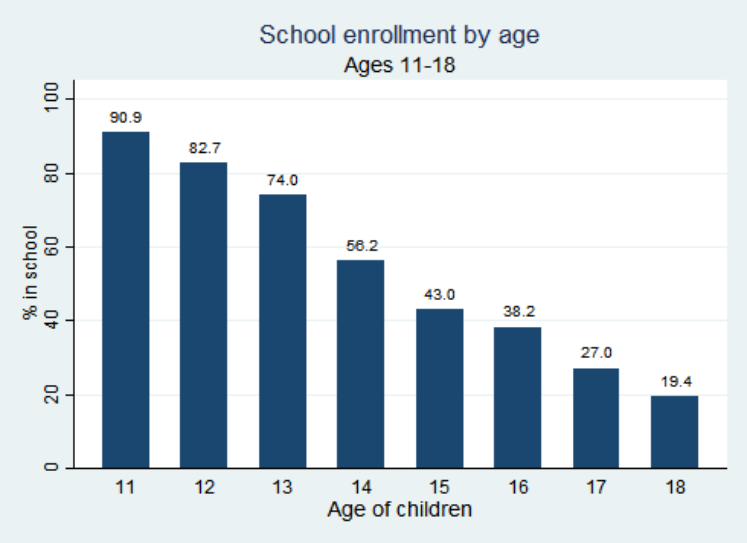
The primary goal of the LUL programme is to increase child enrolment and attendance in secondary school and reduce harmful coping strategies, such as child labour and early marriage. The LUL programme targets households with 11- to 18-year-old children. We begin by describing the children in this age group who qualify for the LUL cash transfer, focusing on child labour, education, and marriage indicators. Next we present information about 6- to 10-year-old children in the sample who receive the TMDH primary school transfer. We also present household expenditures on education, since the cash transfer is meant to help alleviate this burden. We continue with a description of household demographics to understand the size and composition of the households, with respect to the age and gender of family members. Understanding household composition will help us to understand the amount of money these households will likely receive from the programme, depending on the age and number of children they have.

We conclude by describing the adults in the households. Adult factors—such as education level, employment status, and beliefs about education—are often highly correlated with their children's educational attainment, so these measures can serve as both control and moderating variables in the model.

Children 11- to 18-Years Old

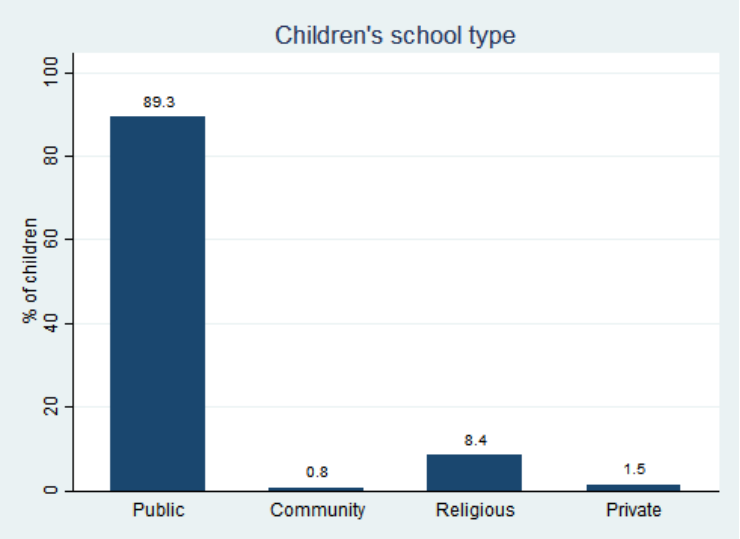
There are 3,918 children between the ages of 11- and 18-years old in the beneficiary households; 48 percent are female. These children qualify for the LUL and the TMDH transfers. Just over half attended school the previous year (59 percent); however, the enrolment rate consistently decreases by age: 11-year olds (91 percent), 14-year olds (about 56 percent), and 17-year olds (27 percent). Figure 6.1 shows enrolment during the previous school year among 11- to 18-year olds. These enrolment rates are roughly the same for girls and boys. Of the children who were enroled in school the previous year, 77 percent attended class at least 90 percent of the time. This statistic is the same for girls and boys.

Figure 6.1. School Enrolment Among 11- to 18-Year Old Children



More than half of the children (53 percent) who were not enroled the previous year claimed to have dropped out of school because of cost, indicating that the cash transfer might be able to help address this problem. Five percent of the 15- to 18-year olds are married. Of the children in this age group enroled in school during the previous year, 90 percent reported attending public school, and 8 percent attending religious school; very few reported attending private or community schools. Figure 6.2 shows the types of schools that 11- to 18-year-old children attended the previous year. Twenty-two percent of children in this age group reported being sick in the past two months. Of those who were sick, 28 percent went to the clinic. These statistics are the same for boys and girls.

Figure 6.2. Types of Schools Attended by 11- to 18-Year-Old Children



Just over one-third of the children in this age group work for pay (36 percent). However, the percentage varies by age, with many more children working for pay at the older end of the age range compared with the younger end of the age range. Less than 10 percent of 11-year olds work for pay, roughly 30 percent of 14-year olds work for pay, and more than 75 percent of 18-year olds work for pay. Figure 6.3 shows the percentage of children working for pay by age. These statistics are similar for girls and boys. Children who work for pay reported working roughly 47 hours during the past two weeks. This intensive margin of work increases slightly with age, as 11-year olds reported working on average 38 hours over two weeks and 18-year olds reported working 50 hours over two weeks. Figure 6.4 shows the hours spent working for pay during the past two weeks by age. Nearly two-thirds (62 percent) of children who work for pay reported working in temporary positions, 21 percent in agriculture, and 9 percent in handiwork.

Figure 6.3. Percentage of Time Working for Pay Among 11- to 18-Year-Old Children

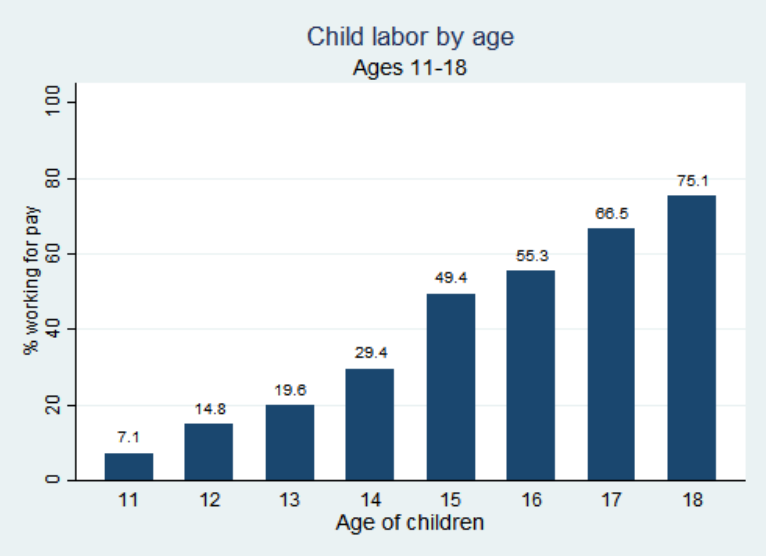
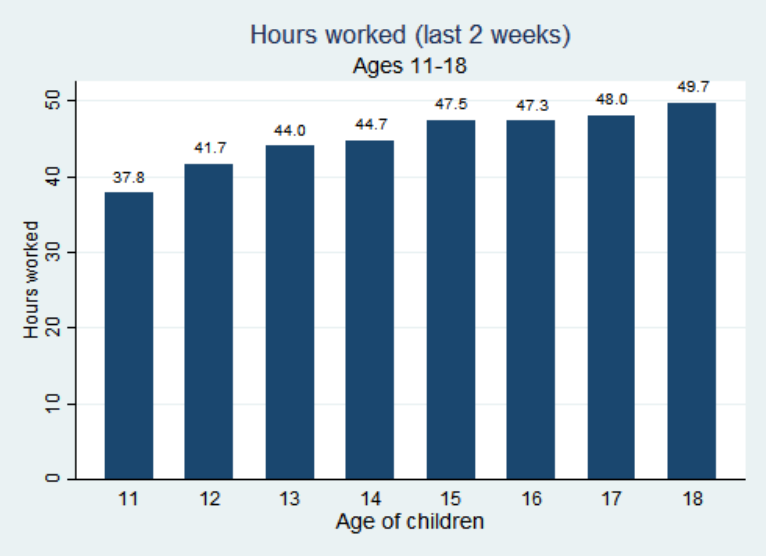


Figure 6.4. Hours Worked for Pay Among 11- to 18-Year-Old Children



Eleven- to seventeen-year-old children have access to a blanket and at least two sets of clothing (95 percent and 76 percent, respectively); however, only 16 percent own a pair of shoes. These three items comprise UNICEF's material needs indicator. Although almost all of the children in this age group have blankets and clothing, there is an opportunity for the cash transfer to affect children's access to shoes.

Children 6- to 10-Years Old

Younger children between the ages of 6- and 10-years old in the sample will not receive the LUL supplement transfer, but they may live in houses with siblings that will and thus could benefit from the additional resources in the household. These younger children are eligible for the TMDH primary school transfer, thus they could benefit directly from the TMDH transfer and indirectly from the LUL transfer. There are 2,748 children between the ages of 6- and 10-years old in LUL beneficiary households in the sample, 50 percent of whom are female. Almost all of these children (94 percent) were enroled in school during the previous year and the enrolment is the same across ages. Figure 6.5 shows school enrolment during the previous year among 6- to 10-year olds. These enrolment rates are the same for girls and boys. Among these children who were enroled in school during the previous year, 74 percent attended class at least 90 percent of the time. This statistic is the same for girls and boys.

One-third of the children (36 percent) who were not enroled in school during the previous year reported dropping out of school because of cost, indicating that the cash transfer might be able to help address this problem. However, these students represent a very small percentage of the total sample in this age group, since only 6 percent were not enroled in school during the previous year and only one-third of them claimed cost as the main reason. Of the children in this age group enroled in school during the previous year, 90 percent attended public school and 8 percent attended religious school; very few attended private or community schools. Figure 6.6 shows the types of schools that 6- to 10-year-old children attended the previous year. Twenty-five percent of children in this age group reported being sick in the past two months. Of those who were sick, 31 percent went to the clinic. These statistics are the same for boys and girls. There is almost no child labour for pay in this age group; only 3 percent of children in this age group work for pay. Most all of the children in this age group who work are 10-years old (5 percent of them).

Children's material needs (blanket, two sets of clothing, and shoes) are fairly similar to their older siblings. Almost everyone has access to a blanket (93 percent); most have two sets of clothing (73 percent); but very few have a pair of shoes (8 percent).

Figure 6.5. School Enrolment Among 6- to 10-Year-Old Children

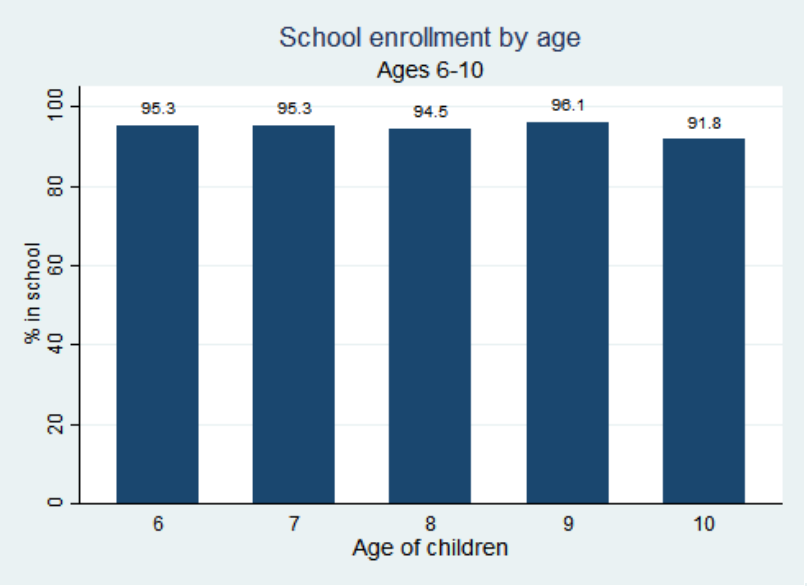
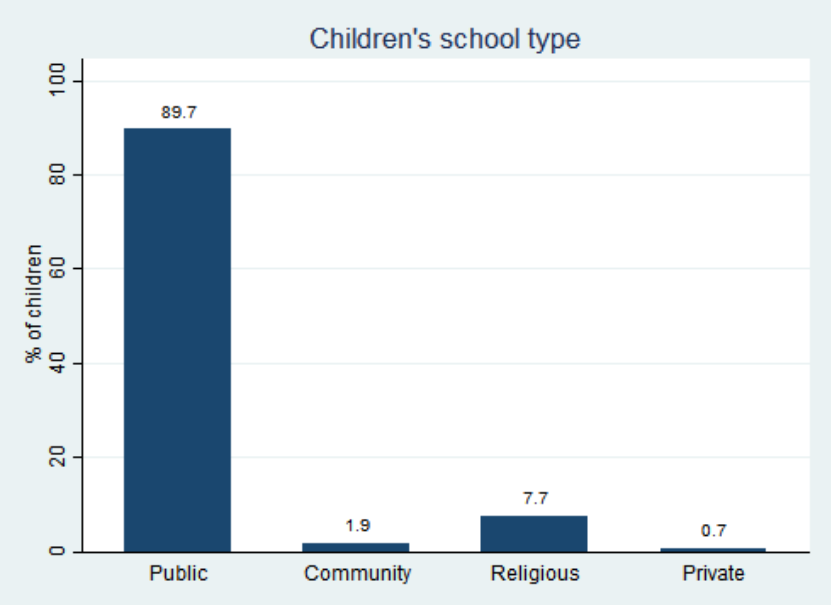


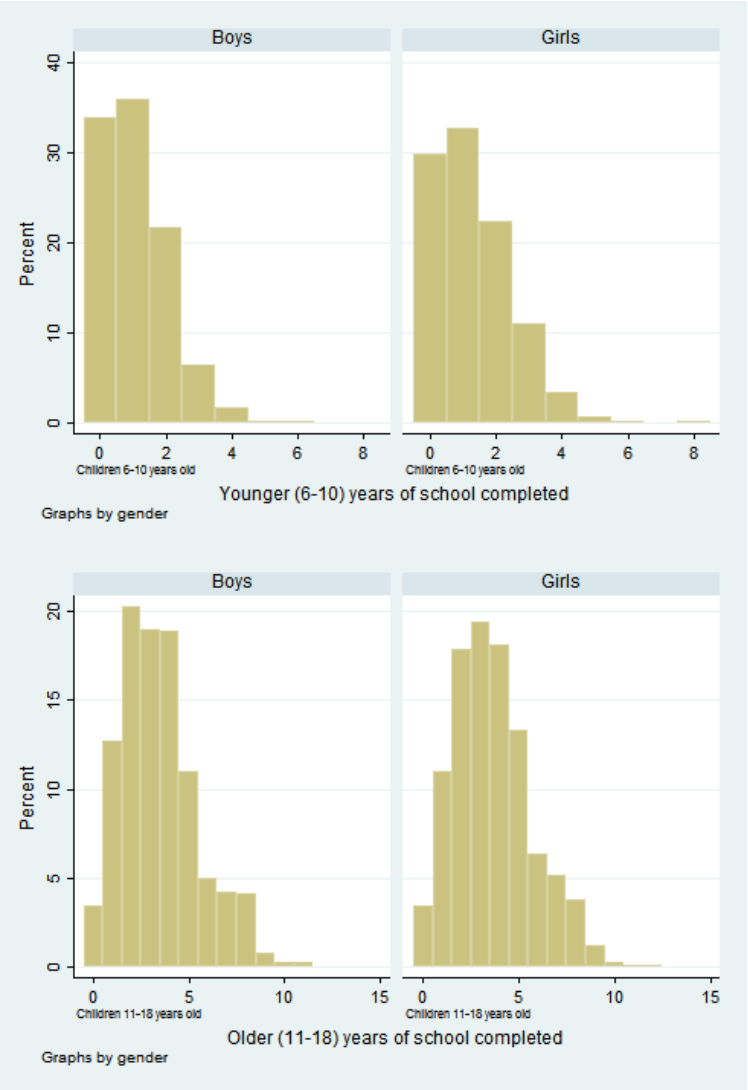
Figure 6.6. Types of Schools Attended by 6- to 10-Year-Old Children



Gender Dynamics

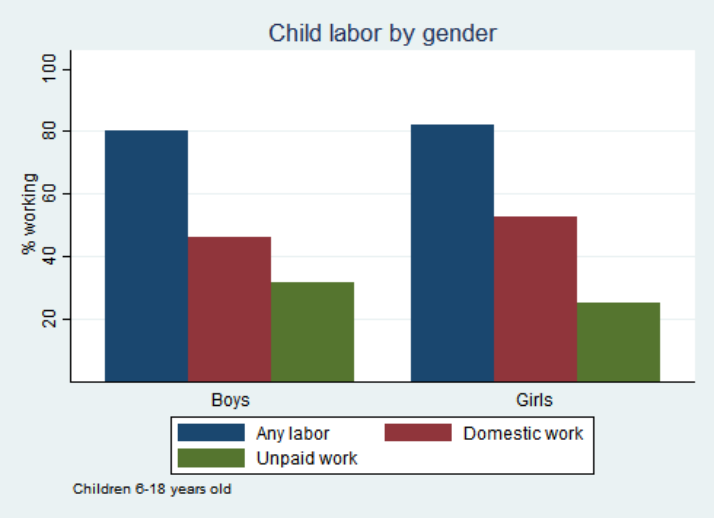
We study the differences in outcomes between boys and girls. The summary statistics for all child outcomes by gender appear in Table A.4. We discuss here the outcomes that are statistically significantly different for boys and girls. Girls complete more school than boys throughout their youth. For children between ages of 6 and 10, the average girl completes 0.22 more years of school than boys (1.29 versus 1.07, t=4.58). This difference persists as they grow older. Girls between ages 11 and 18 complete 0.13 more years of school than boys.

Figure 6.7. Years of schools completed



Girls are more likely to be working than boys but the type of work is different. Among 6- to 18-years-old, 83 percent of girls were engaged in any form of labor. This rate is statistically significantly higher than boys (81 percent, t=1.75). Among the children who are working, we find differences in what types of work they are doing. We find that girls are more likely to be engaged in domestic work than boys (50 percent versus 43 percent, t=5.32). On the other hand, we find that boys are more likely to be engaged unpaid work (31 percent versus 25 percent, t=4.82). We do not find any difference between boys and girls in the likelihood that they work for pay. However, among those working for pay, we find that boys spend more time at work. Over the previous two weeks, boys working for pay spend 48.3 hours working while girls spend 44.0 hours working (t=3.22).

Figure 6.8. Hours Worked for Pay Among 11- to 18-Year-Old Children



Girls 15- to 18-years-old are more likely to be married than girls which coincides with the fact that parents also wanted their daughters married at a younger age. Slightly over 8 percent of 15- to 18-years-old girls are married while slightly under 2 percent of boys are married. Similarly, parents hope their sons will marry at 24.1 years of age and hope for their daughters to marry at 21.9 years (t=25.73).

Figure 6.9. Child Marriage Among 15- to 18-Year-Old Children

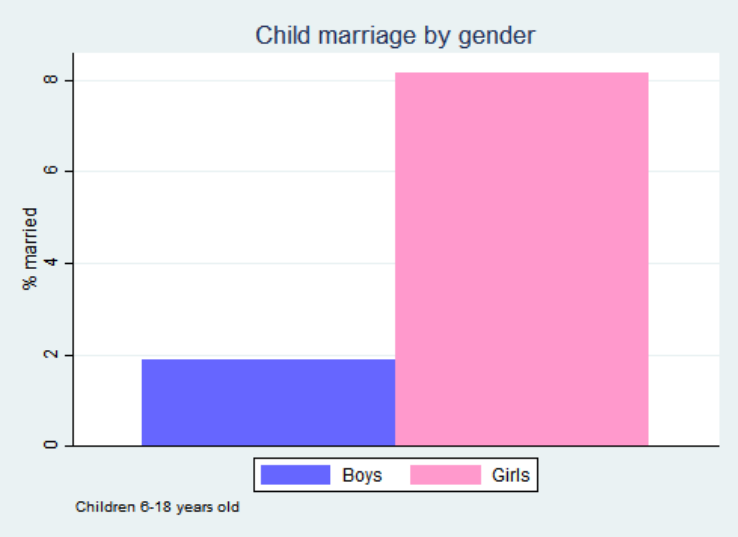
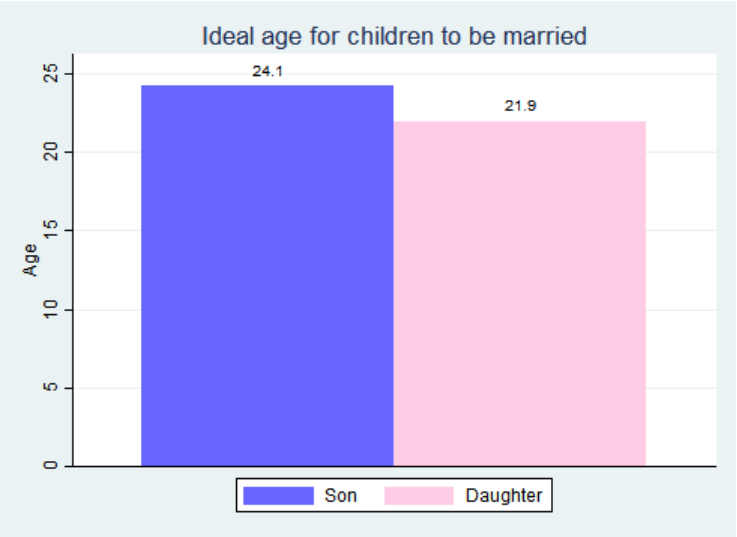


Figure 6.10. Ideal age at marriage



School Expenditures

In theory, the cash transfer can help improve children's school enrolment and attendance by covering some of the expenses related to education. At baseline, we found that LUL-eligible households spend $8.38 per child on school-related expenses over the past year, not including the forgone labour for the time the child spends in school. During the previous year, 72 percent of households paid school tuition at $3.20 on average per child. Roughly half (46 percent) of the households paid school fees, such as Parent-Teacher Association, at $1.43 on average per child over the previous year. Meanwhile, 80 percent of households purchased school supplies in the last year, spending on average $1.95 per child. Lastly, 76 percent of households purchased clothing for their children, spending $1.80 on average per child per year. Over half (56 percent) of the households borrowed money during the previous year and had on average $2.82 of debt outstanding per person. A nationally representative survey called the Millennium Development Goals National Monitoring Survey found that the average household spent $13.59 per child on education expenses. Families clearly face a real cost to send their children to school that is fairly great in proportion to the amount of debt they carry and compared with the national average.

Demographics

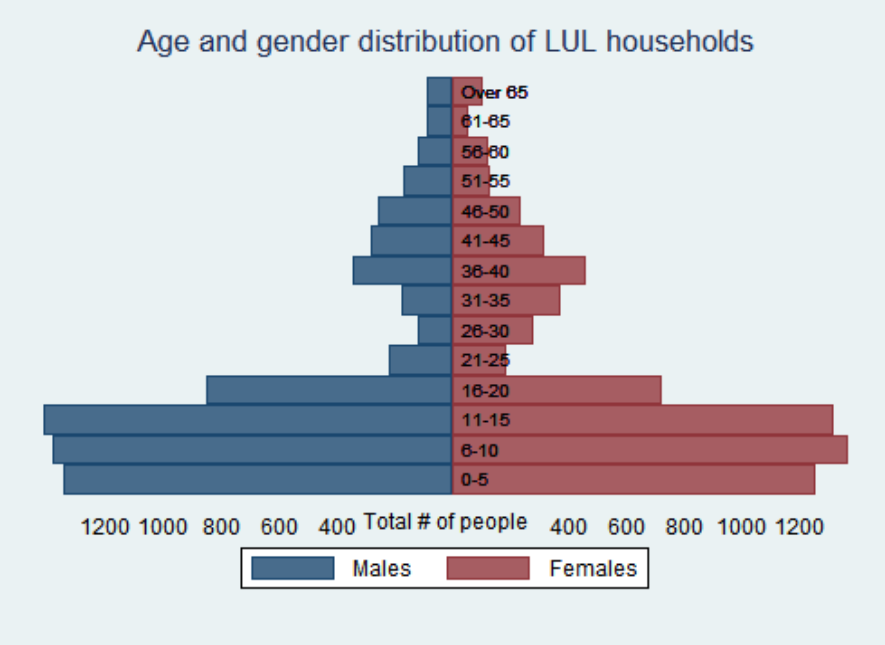
The median beneficiary household in the sample contains eight people, including almost two children between 11- and 18-years old (LUL cash transfer recipient age) and one child between 6- and 10-years old (TMDH transfer). Beneficiary households are larger than the typical household (6.95 members vs 5.17) due to eligbility criteria. The TMDH program targeted the most vulnerable households, often in rural areas. This means that the LUL population is qualitatively different than the overall population. To be included in the program, LUL-eligible households must have one head, one child 6-10 years old to qualify for TMDH, and one child 11-18 years old to qualify for LUL. We therefore expect the average beneficiary household to receive multiple transfers each month because they have more than one child who qualifies for the programme. The beneficiary sample is primarily made up of working-age adults and

children, with only 1 percent aged 65 years and older. The sample of beneficiaries is well balanced by gender, with roughly the same number of males and females in each age group. Table 6.1 shows the breakdown of the beneficiary sample by age and gender. The LUL targets households with children between 11- and 18-years old, so we expect to see a relatively large number of children in this age group. Figure 6.11 depicts the distribution of the beneficiary sample by age and gender. The bimodal distribution has peaks for 6- to 15-year-old children and 30- to 45-year-old adults. This demographic distribution is the result of the programme's targeting—children 6- to 18-years old—which also makes it likely that their parents fall in the 30- to 45-year-old age group.

Table 6.1. Household Demographics (LUL Beneficiary Households)

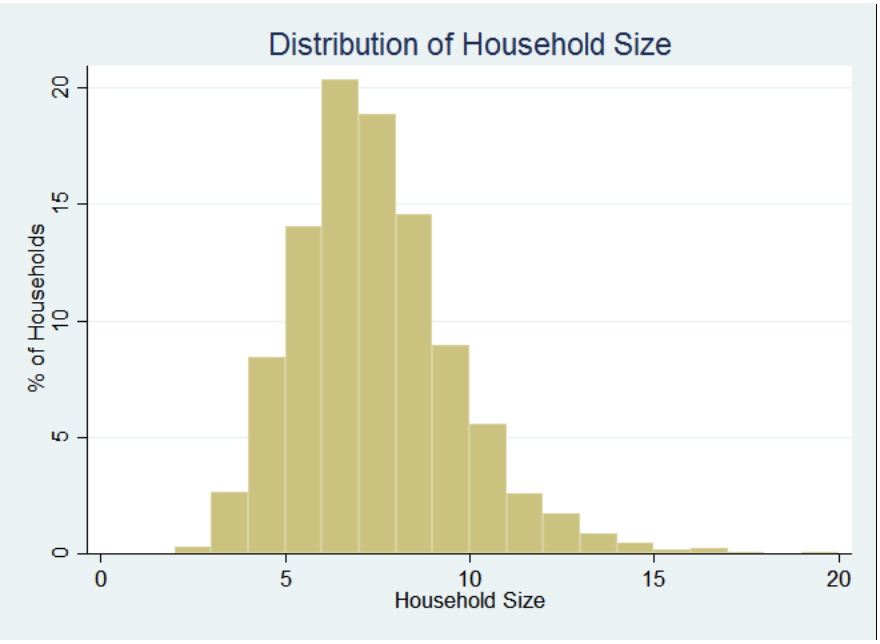
Age (years)	Female	Male	Per Household	Total
0–5	1,258	1,345	1.31	2,603
6–10	1,370	1,378	1.39	2,748
11–18	1,862	2,056	1.98	3,918
19–65	2,380	1,954	2.19	4,334
>65	111	87	0.10	198

Figure 6.11. Distribution of LUL Households by Age and Gender



The median beneficiary household has eight people, with most households containing six to nine people. We will investigate differences of the programme's effects by household size, breaking the sample into small households (seven or fewer members) and large households (eight or more members). Household size could correlate with economic well-being, housing conditions, and children's educational attainment, depending on how many adults in the household can earn an income and how many dependent children require resources provided by other family members. Figure 6.12 depicts the distribution of households by size.

Figure 6.12. Distribution of Households by Size



Adults

On average, adults in the sample completed only a few years of education, do not work for pay, and are unlikely to go to the clinic if they are sick. There are 4,875 adult members of beneficiary households split roughly evenly by gender. Although 75 percent of adults in the sample attended school at some point in their lives, the average adult completed only 3.67 years of education. Almost all of the adults conduct some sort of labour activity, but fewer than half (43 percent) work for pay. Interestingly, adults reported that they would like their children to finish more than 13 years of education; this goal does not differ by gender of the child. Most adults (87 percent) reported that the female makes the education-related decisions in the household. One-third of the adults reported being sick in the past two weeks, and only 33 percent of those who were sick went to the clinic for care.

VII. Baseline Equivalence

The primary purposes of the baseline data collection are to measure the starting point for everyone in the sample and to check that the treatment and control conditions are balanced before the start of the intervention. This section reports the mean differences in household survey results at baseline for primary outcomes and moderating variables between the LUL treatment group, the TMDH-only group, and the control group. In theory, randomization should create groups with statistically similar group means on outcome and control indicators, but this may not always happen.[10] For this reason, we measured each group at baseline and tested for differences to determine whether the identification process led to a balanced sample. We only report indicators that are statistically significantly different at baseline, focusing on the primary education outcome measures.

We found that the LUL, TMDH, and control groups were similar for almost all outcome and control variables. This suggests that the control group is a suitable counterfactual for the treatment group. Most importantly, we found equivalence for the primary outcomes of the study, including child education. We tested more than 120 indicators and found only nine statistically significant differences between the three groups. No one group consistently performed better or worse than the other two, with the difference between groups varying across indicators. Additionally, the sample size is quite large, so we are able to detect small and relatively meaningless differences as statistically significant. Lastly, this number of differences is acceptable, especially considering that we expected to find a certain number of significant differences due to the number of tests that we ran. Specifically, we expected to find one spurious result for every 20 indicators tested, since we set the alpha level to 0.05 for significance. The number of statistically significant differences we found falls well within the range expected, given the number of indicators.

We evaluated baseline equivalence using ordinary least squares regression to test whether households in the LUL arm differ from the TMDH-only households and the control households. We clustered to account for geographic correlation of errors. Only statistically significant differences are presented below. All results, including nonsignificant findings, are presented in Appendix A.

Table 7.1 presents the means and sample sizes for the three arms for each indicator that is not balanced across the three arms. It then presents the F-statistic that tests for differences between the three means and the p-value resulting from the mean difference test. There is little consistency for which arm of the study differs from the others. Perhaps what stands out the most is that TMDH-only households spend more money on education-related expenses than households in the other two groups. TMDH-only households also have a slightly higher percentage of older children who attend school more than 90 percent of the time. Although these results might lead one to believe that TMDH-only households are better off than the other two, one should remember that we tested and found equivalence between the three groups for dozens

[10] Campbell, D. T., & Stanley, J. C. (1963). *Experimental and quasi-experimental designs for research*. Hopewell, NJ: Houghton Mifflin.

of indicators, including many focused on education, economic wellbeing, health, and livestock ownership.

Table 7.1. Statistically Significantly Different Indicators

Variable	Control Mean	Control N	TMDH Mean	TMDH N	LUL Mean	LUL N	F Stat	P Value
Children 11-18								
Attended School >90%	0.74	447	0.85	490	0.77	2020	4.10	0.022
Work for pay	0.30	787	0.27	737	0.36	3720	4.01	0.024
Children 6-10								
Work for Pay	0.00	383	0.03	318	0.03	1747	8.70	0.001
Household Expenditures on Education								
Tuition expenditures per 6-18 year old (USD)	2.20	281	5.54	350	3.2	1418	7.04	0.000
Paid for school supplies (last year)	0.73	395	0.89	423	0.80	1981	4.12	0.020
School supply expenditures per child (USD)	1.80	395	3.34	423	1.95	1981	4.16	0.020
Child clothing expenditures per child (USD)	2.04	303	2.39	301	1.80	1496	3.85	0.030

VIII. Conclusion

The primary purposes of this baseline report are to describe the beneficiaries in the study sample prior to receiving the programme and to present the equivalence of the treatment and control groups. Describing the beneficiary sample at baseline helps stakeholders to assess if they have accurately targeted the type of people they want to benefit from the programme. It also helps stakeholders to understand where beneficiaries need more assistance and how best to design a programme that meets the needs of beneficiaries. The baseline survey revealed that the programme enrols households with an average of almost two children in the target age group (11- to 18-years old), which means that many households qualify for multiple LUL transfers. The average beneficiary household also contains at least one child between 6- and 10-years old, thus these households will receive the TMDH-only transfer too. Our baseline report focuses on LUL-eligible children, presenting indicators related to education. We also present information on other school-age children in the household, as well as demographic information about the household.

We found that, on average, 62 percent of LUL-eligible children were enroled in school during the previous school year and that the enrolment rate consistently decreased by age: 11-year olds (91 percent), 14-year olds (about 56 percent), and 17-year olds (27 percent). Almost all children 11- and 12-years old were enroled in school, thus the programme has little room to improve this indicator for them. However, the programme could have a big impact on older children in the sample, whose enrolment rates are well under 50 percent. Half of the children who were not enroled in school during the previous year reported cost as one of the biggest reasons for not enroling; the cash transfer could help to alleviate this barrier. At baseline, we found that LUL-eligible households spent $8.38 per child on school-related expenses, not including the forgone labour for the time the child spends in school. Almost all children attend public school (90 percent), and eight percent attend religious school.

We also found that child labour rates increase with age and are quite high for 11- to 18-year olds. Roughly one-third of children in this age group work for pay. However, the percentage varies by age with many more children working for pay at the older end of the age range compared with the younger end of the age range. Less than 10 percent of 11-year olds work for pay, roughly 30 percent of 14-year olds work for pay, and more than 65 percent of 17-year olds work for pay. Not only are a lot of children working for pay, but they work a lot of hours. The average LUL-eligible child reported working more than 45 hours during the past two weeks. The cash transfer could help to replace the income from child labour, freeing up time for older children to attend school.

In addition to child outcomes, we also investigated household demographic information for LUL-eligible households. The median beneficiary household in the sample contains seven people, including almost two children between 11- and 18-years old (LUL cash transfer recipient age) and one child between 6- and 10-years old (TMDH transfer). We therefore expect the average beneficiary household to receive multiple transfers each month because they have more than one child who qualifies for the programme. The beneficiary sample is primarily made up of working-age adults and children, with only 1 percent 65-years old and older. On average, adults in the sample completed only a few years of education, do not work for pay, and are unlikely to go to the clinic if they are sick. Although 75 percent of adults in the sample attended school at

some point in their lives, the average adult completed only 3.67 years of education. Yet, adults expect their children to complete 13 years of education on average, so they seem to desire a different education outcome for their children compared with themselves.

Baseline Equivalence

In addition to describing the beneficiary sample, we also investigated baseline equivalence between the treatment and control groups. We care about baseline equivalence purely as a technical aspect of the study design because it helps to assess the internal validity of the study—that is, the ability of the study to attribute causality to the programme when differences are observed between the treatment and control groups at the end of the study. It also tells us what factors we need to control for in later analyses of impact. We found that the TMDH and control groups serve as good counterfactuals because they are very similar to the treatment group across domains of interest to the programme, both in terms of outcome indicators and demographic characteristics associated with the outcomes of interest. The study used random assignment to create the three arms of the study. Only a few indicators differ between the arms. The difference is not consistent across indicators, and the magnitude of the difference is quite small. This suggests that the study design has produced a strong counterfactual that will enable us to attribute differences between treatment and control groups to the cash transfer programme (and not other factors) at the end of the study.

Appendix A. Baseline Equivalence Test by Domain

Table A.1. LUL-Eligible Children (11- to 18-Years Old)

Variable	Control Mean	Control N	TMDH Mean	TMDH N	LUL Mean	LUL N	F Stat	P Value
Ever attended school	0.93	823	0.92	785	0.88	3918	1.02	0.368
Boys ever attended school	0.92	399	0.91	456	0.88	2056	0.55	0.578
Girls ever attended school	0.94	424	0.95	329	0.87	1862	1.86	0.166
Out of school due to cost	0.59	321	0.60	236	0.53	1423	0.76	0.471
Boys out of school due to cost	0.53	166	0.57	135	0.52	753	0.15	0.858
Girls out of school due to cost	0.66	155	0.63	101	0.54	670	1.45	0.246
Years of school completed	3.56	768	4.40	725	3.65	3440	3.05	0.056
Boys' years of school completed	3.43	369	4.26	414	3.59	1813	2.27	0.114
Girls' years of school completed	3.68	399	4.59	311	3.72	1627	4.08	0.023
Attended school last year	0.58	768	0.67	726	0.59	3443	1.23	0.301
Boy attended school last year	0.55	369	0.67	414	0.59	1815	1.87	0.165
Girl attended school last year	0.61	399	0.68	312	0.59	1628	0.82	0.447
Private school last year	0.07	447	0.12	490	0.10	2019	0.98	0.383
Suspended from school	0.08	447	0.10	490	0.07	2020	1.22	0.305
Attend school next year	0.51	823	0.60	785	0.50	3918	1.29	0.285
Attend middle/secondary school	0.31	418	0.47	473	0.33	1974	3.68	0.032
Boys attend middle/secondary school	0.26	185	0.47	266	0.32	1036	4.70	0.013
Girls attend middle/secondary school	0.35	233	0.46	207	0.35	938	2.32	0.109
Attended school >90%	0.74	447	0.85	490	0.77	2020	4.10	0.022
Boys attended school >90%	0.72	203	0.85	279	0.77	1062	3.43	0.040
Girls attended school >90%	0.77	244	0.86	211	0.77	958	3.20	0.049
Time spent studying (min/day)	42.45	344	51.52	381	38.72	1661	5.75	0.006
Boys' time spent studying (min/day)	36.41	151	50.53	213	37.74	882	4.35	0.018
Girls' time spent studying (min/day)	47.18	193	52.77	168	39.84	779	4.90	0.011
Any labour activity	0.96	823	0.94	785	0.95	3917	0.28	0.755
Boy any labour activity	0.95	399	0.93	456	0.94	2055	0.46	0.633
Girl any labour activity	0.96	424	0.95	329	0.96	1862	0.11	0.897
Work for pay	0.30	787	0.27	737	0.36	3720	4.01	0.024

Variable	Control Mean	Control N	TMDH Mean	TMDH N	LUL Mean	LUL N	F Stat	P Value
Boy work for pay	0.31	379	0.27	422	0.36	1941	2.81	0.070
Girl work for pay	0.29	408	0.26	315	0.36	1779	3.57	0.035
Domestic work	0.40	787	0.47	737	0.35	3720	1.75	0.184
Boy domestic work	0.30	379	0.42	422	0.32	1941	1.10	0.340
Girl domestic work	0.49	408	0.54	315	0.39	1779	3.93	0.026
Unpaid labor	0.30	787	0.26	737	0.28	3720	0.24	0.789
Time on paid labor (hours, 2 weeks)	45.58	249	48.46	228	46.56	1448	0.49	0.613
Time on unpaid labor (hours, 2 weeks)	30.91	734	30.73	681	28.40	3440	1.19	0.314
Older teen (15-18) married	0.06	331	0.03	331	0.05	1684	1.44	0.246
Sick (last 2 months)	0.17	823	0.23	785	0.22	3918	0.86	0.428
Boy sick (last 2 months)	0.14	399	0.23	456	0.20	2056	2.07	0.137
Girl sick (last 2 months)	0.20	424	0.22	329	0.23	1862	0.26	0.772
Went to clinic	0.33	141	0.31	177	0.28	849	0.23	0.797
Boy went to clinic	0.39	57	0.34	106	0.25	419	1.35	0.269
Girl went to clinic	0.29	84	0.25	71	0.30	430	0.28	0.756
Has own blanket	0.95	823	0.95	785	0.95	3917	0.08	0.923
Boy has own blanket	0.95	399	0.95	456	0.95	2055	0.02	0.984
Girl has own blanket	0.95	424	0.95	329	0.96	1862	0.16	0.853
Has own pair of shoes	0.12	823	0.14	785	0.16	3917	0.50	0.611
Boy has own pair of shoes	0.13	399	0.15	456	0.15	2055	0.14	0.872
Girl has own pair of shoes	0.11	424	0.13	329	0.18	1862	0.66	0.522
Has two sets of clothes	0.79	822	0.86	785	0.76	3916	2.02	0.144
Boy has two sets of clothes	0.80	398	0.84	456	0.74	2055	1.99	0.147
Girl has two sets of clothes	0.79	424	0.88	329	0.79	1861	2.32	0.108

Table A.2. Children 6- to 10-Years Old

Variable	Control Mean	Control N	TMDH Mean	TMDH N	LUL Mean	LUL N	F Stat	P Value
Ever attended school	0.84	559	0.92	513	0.83	2748	4.39	0.017
Boys ever attended school	0.81	264	0.91	252	0.81	1378	3.16	0.051
Girls ever attended school	0.85	295	0.93	261	0.84	1370	4.82	0.012
Out of school due to cost	0.29	42	0.28	25	0.36	127	0.39	0.683
Boys out of school due to cost	0.41	17	0.43	14	0.32	76	0.57	0.571
Girls out of school due to cost	0.20	25	0.09	11	0.43	51	4.18	0.027
Years of school completed	1.28	467	1.38	470	1.18	2277	1.11	0.337
Boys' years of school completed	1.25	215	1.43	228	1.07	1121	3.68	0.032
Girls' years of school completed	1.31	252	1.33	242	1.29	1156	0.05	0.955
Attended school last year	0.91	467	0.95	471	0.94	2280	1.02	0.368
Boy attended school last year	0.92	215	0.94	229	0.93	1123	0.17	0.846
Girl attended school last year	0.90	252	0.95	242	0.96	1157	2.16	0.126
Private school last year	0.06	425	0.13	446	0.08	2153	1.26	0.293
Suspended from school	0.06	425	0.06	446	0.07	2153	0.26	0.776
Attend school next year	0.91	559	0.93	513	0.91	2748	0.52	0.597
Attend middle/secondary school	0.02	506	0.02	479	0.01	2499	1.47	0.239
Boys attend middle/secondary school	0.02	242	0.02	236	0.01	1234	1.07	0.351
Girls attend middle/secondary school	0.02	264	0.02	243	0.01	1265	0.73	0.487
Attended school >90%	0.75	425	0.76	446	0.74	2153	0.08	0.920
Boys attended school >90%	0.76	198	0.76	215	0.74	1047	0.05	0.947
Girls attended school >90%	0.74	227	0.77	231	0.74	1106	0.14	0.873
Time spent studying (min/day)	20.73	317	22.74	351	17.16	1729	1.62	0.207
Boys' time spent studying (min/day)	19.38	144	23.63	170	15.86	823	2.61	0.083
Girls' time spent studying (min/day)	21.86	173	21.91	181	18.34	906	0.81	0.452
Any labour activity	0.69	559	0.62	513	0.64	2748	0.66	0.522
Boy any labour activity	0.69	264	0.58	252	0.62	1378	1.68	0.196
Girl any labour activity	0.68	295	0.66	261	0.66	1370	0.11	0.899
Work for pay	0.00	383	0.03	318	0.03	1747	8.70	0.001
Boy work for pay	0.00	182	0.04	146	0.03	848	7.74	0.001
Girl work for pay	0.00	201	0.02	172	0.02	899	3.26	0.047
Domestic work	0.80	383	0.78	318	0.71	1747	1.46	0.242
Boy domestic work	0.77	182	0.68	146	0.68	848	1.15	0.326
Girl domestic work	0.82	201	0.85	172	0.73	899	2.46	0.096
Unpaid labour	0.20	383	0.19	318	0.26	1747	0.98	0.382

Time on paid labour (hours, 2 weeks)	25.50	2	38.00	12	39.59	64	0.35	0.706
Time on unpaid labour (hours, 2 weeks)	17.83	374	20.93	309	18.59	1688	0.96	0.390
Sick (last 2 months)	0.17	559	0.27	513	0.25	2748	1.92	0.157
Boy sick (last 2 months)	0.16	264	0.27	252	0.26	1378	2.91	0.064
Girl sick (last 2 months)	0.18	295	0.28	261	0.25	1370	1.26	0.293
Went to clinic	0.41	94	0.40	141	0.31	700	1.36	0.266
Boy went to clinic	0.39	41	0.46	67	0.28	357	3.68	0.032
Girl went to clinic	0.43	53	0.35	74	0.35	343	0.29	0.749
Has own blanket	0.92	559	0.92	513	0.93	2748	0.05	0.953
Boy has own blanket	0.94	264	0.90	252	0.92	1378	0.20	0.822
Girl has own blanket	0.92	295	0.93	261	0.94	1370	0.23	0.794
Has own pair of shoes	0.08	559	0.09	513	0.08	2748	0.17	0.844
Boy has own pair of shoes	0.08	264	0.08	252	0.08	1378	0.04	0.961
Girl has own pair of shoes	0.08	295	0.10	261	0.08	1370	0.31	0.738
Has two sets of clothes	0.75	559	0.78	513	0.73	2748	0.53	0.590
Boy has two sets of clothes	0.74	264	0.76	252	0.72	1378	0.27	0.765
Girl has two sets of clothes	0.77	295	0.81	261	0.73	1370	0.77	0.470

Table A.3. Adults' Characteristics (≥18-Years Old)

Variable	Control Mean	Control N	TMDH Mean	TMDH N	LUL Mean	LUL N	F Stat	P Value
Age (18+)	37.90	971	39.03	1047	38.36	4875	1.98	0.148
Adults ever attended school	0.77	971	0.80	1047	0.75	4875	0.45	0.637
Adults years of school	3.33	742	4.27	827	3.67	3602	4.64	0.014
Any labour activity	0.97	971	0.95	1047	0.97	4875	1.10	0.341
Work for pay	0.36	324	0.30	347	0.43	1667	3.28	0.046
Time on unpaid labour (hours, 2 weeks)	37.71	793	36.55	821	32.92	3923	1.78	0.179
Time on paid labour (hours, 2 weeks)	54.54	720	55.86	787	54.38	3775	0.11	0.897
Sick (last 2 months)	0.30	971	0.37	1047	0.35	4875	1.18	0.314
Went to clinic	0.40	288	0.36	390	0.33	1685	1.23	0.302
Girls' education goal (years)	13.55	366	13.89	376	13.29	1844	1.33	0.273
Boys' education goal (years)	13.95	371	14.47	387	13.59	1850	2.95	0.061
Ideal age at marriage for girls	21.81	365	22.17	374	21.98	1837	0.41	0.663
Ideal age at marriage for boys	23.94	370	25.06	385	24.22	1848	2.18	0.123
Female makes education decisions	0.87	394	0.89	422	0.87	1981	0.22	0.800
Parent-youngest child positive activities	0.75	395	0.66	423	0.72	1981	2.43	0.098
# days insufficient food (last 7 days)	0.83	365	0.87	381	0.85	1849	0.21	0.810
# days reduced quantity food (last 7 days)	3.81	303	3.50	331	3.55	1574	0.44	0.648
# days no food (last 7 days)	0.06	303	0.14	331	0.09	1574	2.72	0.076

Table A.4. LUL-Eligible Children (6- to 18-Years Old)

Variable	Boys Mean	Boys N	Girls Mean	Girls N	t Stat	P Value
Ever attended school	0.86	3434	0.86	3232	-0.72	0.473
Out of school due to cost	0.50	829	0.53	721	-1.05	0.293
Years of school completed	2.63	2934	2.71	2783	-1.38	0.168
Older (11-17) years of school completed	3.59	1813	3.72	1627	-1.76	0.078
Younger (6-10) years of school completed	1.07	1121	1.29	1156	-4.58	0.000
Attended school last year	0.72	2938	0.74	2785	-1.98	0.048
Private school last year	0.09	2109	0.09	2063	-0.39	0.699
Suspended from school	0.07	2109	0.06	2064	1.03	0.302
Attend school next year	0.66	3434	0.68	3232	-1.79	0.074
Attend middle/secondary school	0.15	2270	0.15	2203	-0.22	0.829
Attended school >90%	0.75	2109	0.76	2064	-0.11	0.914
Time spent studying (min/day)	27.18	1705	28.28	1685	-0.93	0.353
Any labor activity	0.81	3433	0.83	3232	-1.75	0.080
Work for pay	0.26	2789	0.25	2678	1.14	0.255
Domestic work	0.43	2789	0.50	2678	-5.32	0.000
Unpaid labor	0.31	2789	0.25	2678	4.82	0.000
Time on paid labor (hours, 2 weeks)	48.29	797	44.02	715	3.22	0.001
Time on unpaid labor (hours, 2 weeks)	25.16	2568	25.19	2560	-0.06	0.951
Sick (last 2 months)	0.23	3434	0.24	3232	-1.27	0.203
Went to clinic	0.03	905	0.08	779	-5.21	0.000
Older teen (15-17) married	0.27	776	0.32	773	-2.40	0.017
Has own blanket	0.94	3433	0.95	3232	-1.69	0.091
Has own pair of shoes	0.12	3433	0.14	3232	-0.47	0.635
Has two sets of clothes	0.73	3433	0.76	3231	-3.35	0.001

ABOUT AMERICAN INSTITUTES FOR RESEARCH

Established in 1946, with headquarters in Washington, D.C., American Institutes for Research (AIR) is an independent, nonpartisan, not-for-profit organization that conducts behavioral and social science research and delivers technical assistance both domestically and internationally. As one of the largest behavioral and social science research organizations in the world, AIR is committed to empowering communities and institutions with innovative solutions to the most critical challenges in education, health, workforce, and international development.

AIR®

AMERICAN INSTITUTES FOR RESEARCH®

1000 Thomas Jefferson Street NW
Washington, DC 20007-3835
202.403.5000

www.air.org

Making Research Relevant

LOCATIONS

Domestic

Washington, D.C.
Atlanta, GA
Austin, TX
Baltimore, MD
Cayce, SC
Chapel Hill, NC
Chicago, IL
Columbus, OH
Frederick, MD
Honolulu, HI
Indianapolis, IN
Metairie, LA
Naperville, IL
New York, NY
Rockville, MD
Sacramento, CA
San Mateo, CA
Waltham, MA

International

Egypt
Honduras
Ivory Coast
Kyrgyzstan
Liberia
Tajikistan
Zambia