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Cash Transfers, Public Works and Child Activities: Mixed Methods Evidence from the United Republic of Tanzania

Jacobus de Hoop, Margaret W. Gichane, Valeria Groppo, and Stephanie Simmons Zuilkowski on behalf of the Productive Social Safety Net youth evaluation team

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CASH TRANSFERS, PUBLIC WORKS AND CHILD ACTIVITIES: MIXED METHODS EVIDENCE FROM THE UNITED REPUBLIC OF TANZANIA

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ABSTRACT

We examined the impact of the United Republic of Tanzania's Productive Social Safety Net (PSSN) on child work and education. Targeting extremely poor households, the programme provides cash transfers that are partly conditional on the use of health and education services, along with a public works component. We relied on a cluster-randomized evaluation design, assigning villages to one of three study arms: cash transfers only; cash transfers combined with public works (i.e., the joint programme); and control. We complemented the quantitative analysis with findings from in-depth interviews and focus group discussions with children and caregivers, involving a subsample of participants from all three study arms. Due to household investment of PSSN benefits in livestock, the programme caused a shift from work for pay outside the household to work within the household, mostly in livestock herding. The programme improved child education outcomes. These findings were echoed in the qualitative data – participants referred to working on family farms as being both safer for children and more beneficial for the family. Participants further discussed the importance of PSSN funds in paying for schooling costs. Impacts were generally no different for communities that received cash only and communities that received both cash and public works components. School dropout, however, decreased in villages where the joint programme was implemented but remained unchanged in villages receiving cash only.

KEYWORDS

Cash transfers, public works, child labour, education, United Republic of Tanzania, randomized controlled trial (RCT)

JEL classification codes: D13, H43, I15, I25, J22, J24, O15, O22, Q12

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CONTENTS

1. INTRODUCTION

The 2014 National Child Labour Survey for Tanzania (International Labour Organization, 2016) shows that nearly 30 per cent of Tanzanian children engage in detrimental forms of work that can be classified as child labour. About 30 per cent of Tanzanian children do not attend school, while another 20 per cent combine school and work. Although school fees have been mostly eliminated in the country, poor families still incur substantial costs for child schooling, mainly for uniforms and school materials.

Against this background, we examined the impact of the United Republic of Tanzania Productive Social Safety Net (PSSN) on child work and education. The PSSN provides to extremely poor households cash transfers that are partly conditional on their use of health and education services, together with opportunities to earn additional income by participating in a public works component of the programme. Theoretically, the impact of both cash transfers and public works on child work is undetermined. Both interventions increase household income. Higher household income is expected to increase children's leisure and schooling. Additional income may, however, be invested in productive activities that can increase the demand for child work. Moreover, children may be requested to compensate for adult time spent in public works, by engaging either in household chores or in economic activities. The net effect depends on a variety of factors including: availability of adult labour supply within the household; credit constraints and labour market imperfections that influence a household's ability to hire external labour; and parental awareness of the benefits of education (e.g., Dammert et al., 2018; de Hoop & Rosati, 2014; Fiszbein et al., 2009). This study provides empirical estimates of this net effect.

We relied on a cluster-randomized evaluation, which allowed us to compare the relative impacts of receiving PSSN cash only versus receiving the combined intervention including both PSSN cash and PSSN public works. Clusters (villages) were randomly assigned to one of three study arms: cash transfers only; cash transfers combined with public works (i.e., the joint programme); and control. We separately estimated the impact of the two treatments versus the control group, and also tested whether impacts were significantly different in villages where the joint programme was implemented compared with villages receiving cash only. We pair the quantitative findings with detailed evidence from qualitative interviews and focus group discussions with children and caregivers. The qualitative component, specifically designed to obtain additional insights into PSSN impacts on child activities, helps us to contextualize and interpret the quantitative findings, creating a rich understanding of the effects of the programme.

We find that the PSSN did not affect the overall likelihood that children work. The programme did, however, affect the types of economic activities in which children engage. Due to an increase in household ownership of livestock, child participation in livestock herding for the household also increased. This was matched by a reduction in the prevalence of children engaging in paid work outside the household, leaving net engagement in child work unaffected. Study participants considered working on family farms an improvement over work outside the household, seeing it as both safer for children and more beneficial for the family. We therefore consider this shift welfare-enhancing for children. The PSSN did not affect child exposure to hazards while performing economic activities or household chores. The programme significantly improved school attendance and literacy. PSSN funds helped beneficiaries to purchase school supplies and pay supplemental tuition fees for children, ensuring their continued attendance at school. For the most part, impacts on child activities were no different for communities that received cash transfers only and communities that received both cash and public works components.

Our study relates to an extensive literature on the impact of cash transfers on child work and education and a less extensive literature on the impact of public works on the same. The empirical evidence mostly

shows that conditional cash transfers tend to reduce child engagement in economic activities and household chores, while results are more mixed for unconditional cash transfers (for reviews, see Dammert et al., 2018; de Hoop & Rosati, 2014; Fiszbein et al., 2009). Moreover, there is robust evidence that cash transfers improve school enrolment and attendance, with bigger impacts if transfers are conditional on school participation (Baird et al., 2014; Handa et al., 2018). As discussed by Dammert et al. (2018), the evidence on the impact of public works on child activities is mixed, with some studies finding reductions in child work and others finding increased child participation in household chores or school absenteeism.

Within the rich literature on cash transfers in African countries (e.g., Akresh et al., 2013; Baird et al., 2011; Evans et al., 2014), our findings are especially closely related to those of a recent study by de Hoop et al. (forthcoming). The authors find that in poor rural parts of Malawi and Zambia unconditional cash transfers increased household investment in agricultural activities. In both countries, children increased participation in farm work for the household and, in Malawi, their participation in paid work outside the household also decreased. Cash transfers significantly improved school attendance in both settings. Our results on the impact of the United Republic of Tanzania PSSN are similar and suggest that, at least in rural parts of Eastern and Southern Africa, investment of cash transfers in the household business and associated changes in child work should be taken into account when assessing programme impacts on children. This study provides two main contributions to the existing literature. First, our mixed methods research strategy allows us to better interpret the results from the quantitative analysis, adding nuances that enable a better understanding of the mechanisms driving impacts. Second, by exploiting the evaluation experimental design, we can assess the differential impact of public works with respect to cash transfers only. To the best of our knowledge, our study is the first to explicitly analyse this aspect.

This working paper is organized as follows. Section 2 describes programme characteristics; section 3 provides details of the study design and data collection methods; section 4 describes the methodology; sections 5 and 6 discuss the results and robustness tests; and section 7 concludes the study and discusses policy implications.

2. PROGRAMME CHARACTERISTICS

The PSSN is implemented by the Tanzania Social Action Fund (TASAF), which was established in 2000 as part of the Government of the United Republic of Tanzania's strategy to reduce poverty. The first phase of the Government's social protection strategy, TASAF I (2000–2005), focused on improving social service delivery; capacity enhancement for communities, including overseeing community-run sub-projects such as the construction and rehabilitation of health facilities and schools; and providing a public works component. The second phase, TASAF II (2005–2013) expanded the first-phase commitments to address income poverty and a shortage of social services, including through a pilot of community-based conditional cash transfers in communities that had been strengthened during the first phase (Evans et al., 2014). The PSSN represents the third phase of the Government's social protection strategy, TASAF III (currently ongoing). The PSSN was scaled up six times from 2012 to 2016, reaching over 1 million households nationwide in the latter year.

The objectives of the PSSN are to increase consumption by extremely poor households on a permanent basis, smooth their consumption during lean seasons and build their human capital. During the period covered by this study, the programme included two components: (1) a cash transfer (with a

combination of unconditional and conditional portions); and (2) a public works component.[1]

The PSSN uses a three-stage targeting process that involves geographical targeting, community-based targeting and proxy means testing. First, the poorest districts and villages are identified using national poverty maps.[2] Second, village-level committees identify the poorest households in these villages, and these households are then interviewed for the proxy means testing. Third, those households that meet the poverty criterion (i.e., score below the designated threshold) are enrolled in the programme. Eligibility for the public works component further requires that households contain individuals who are deemed 'able to work'. The criteria exclude, among others, household members who do not normally reside in the community; children who are still attending school; older people over the age of 65; pregnant women who are more than 4 months pregnant; lactating women during the first 10 months after delivery; and people suffering from illnesses or disabilities that impede even light work.[3]

The cash transfer amount varies according to the number of children in the household (*see Table 1*). This holds for both the unconditional and conditional portions of the cash transfer. The latter portion consists of: (1) a grant to households with pregnant women and/or children under 5 years of age who comply with prenatal and post-natal exams and/or regular child health check-ups; (2) an individual grant for children who demonstrate a primary school attendance rate of at least 80 per cent; (3) an individual grant for children who demonstrate a lower or upper secondary school attendance rate of at least 80 per cent. Compliance is monitored by collecting data in schools. According to TASAF procedures, adequate support and follow-up must be provided to participating households, so that they will not lose payments should difficulties arise. This support includes counselling in the event of non-compliance. Moreover, no penalty is applied for the first two rounds of payments following a household's initial enrolment in the programme (World Bank, 2012, 2016). Overall, eligible households are entitled to a maximum of 38,000 Tanzanian shillings (equivalent to US$18) per month.[4] Transfers are made bimonthly, to an adult woman wherever possible (usually the mother).

Additional cash is provided through the public works component, which guarantees 15 days of paid work per month for up to four months per eligible household, for a maximum of two adult participants per household.[5] The daily wage rate at the time of the study was set at 2,300 Tanzanian shillings (equivalent to US$1.40), which was below the prevailing market rates and in line with the daily rate paid by other large public works programmes such as Food Assistance for Assets, which is financed by the World Food Programme. Participants are paid based on attendance and task completion, with payments made every month. The public works component operates only when agricultural labour demand is at its lowest and aims to pay wages before the lean season. The main objectives of the public works component are household consumption smoothing and community asset formation. Public works projects commonly relate to agriculture, soil and water conservation/management, and rehabilitation of degraded areas. Both the specific timing and areas of work are decided at the Project Authority Area (PAA) level – PAAs roughly correspond to districts – through village-level, multi-year plans designed with a participatory approach.

1 Piloting of a third component, consisting of livelihoods enhancement, began after data collection for the present study was complete.

2 The United Republic of Tanzania's administrative structure includes regions, districts, local wards, and villages.

3 The PSSN Public Works Programme Operations Manual contains further details of the criteria used to define 'ability to work'.

4 Programme impacts may vary depending on household composition. Given the complex structure of level transfer amounts, however, we do not assess heterogeneity of impacts by household composition.

5 The cap on the number of days was implemented to ensure that adults have sufficient time to engage in other productive activities. Time is allotted flexibly, so that public works can be combined with child caring responsibilities within the household. Pregnant and lactating women (if considered able to work according to the programme criteria) are provided with light work.

3. STUDY DESIGN AND DATA COLLECTION

The present study uses a two-phase explanatory sequential design. Explanatory sequential designs consist of a quantitative data collection phase followed by a qualitative phase. Within this approach, qualitative data are collected to help explain and expand upon quantitative findings (Creswell & Plano Clark, 2011).

3.1 Background to the quantitative study component

The quantitative component of this study builds on a cluster-randomized impact evaluation implemented by Policy Research for Development (REPOA) in the United Republic of Tanzania. The impact evaluation covered eight mainland PAAs and one PAA in Zanzibar, all of which were part of the 2015 scale-up of the PSSN. In total, 102 villages across these nine PAAs were randomly selected into the study (with the number of villages selected per PAA proportional to PAA size).[6]

As part of the REPOA evaluation, a baseline household survey was conducted in these 102 villages. Household selection followed the Women's Empowerment in Agriculture Index guidelines. The index classifies households into three types: (1) dual-adult households, with both a female and a male adult; (2) single-female households, with a female adult but no male adult; (3) single-male households, with a male adult but no female adult (Alkire et al., 2013). Households in categories 1 and 2 were randomly sampled for inclusion in the study, roughly at the ratio of 2:1 (ranging from 60 to 80 per cent dual-adult households and 20 to 40 per cent single-female households per village).[7]

After the baseline data collection, completed in April 2015, villages were randomly assigned to one of three study arms: 35 to receive cash transfers only; 26 to receive cash transfers and public works; and 41 to the control group.[8] Decisions about the number of villages allocated to the cash and public works arm were made by TASAF. To our understanding, these decisions were based on capacity to implement the public works intervention. The comparatively low number of communities that received the combined treatment (i.e., the joint programme) has implications for the statistical power to detect the marginal effect of public works added to the cash intervention. Cash transfer disbursement started in September to October 2015. The endline data collection took place nearly two years after baseline, in April to May 2017, by which time households had received, on average, 10 bimonthly cash payments.

For our quantitative analysis, we use data from the above described household survey, where the household head (or another knowledgeable member of the household) reported information on child work and schooling.

6 An impact evaluation was also conducted by the World Bank in 16 randomly selected mainland PAAs, plus 2 PAAs in Zanzibar (Rosas et al., 2019). The REPOA study covers the following eight mainland PAAs: Misungwi, Kahama, Kilosa, Kisarawe, Handeni, Mbogwe, Itilima, Uyui. Unguja is the PAA in Zanzibar. Villages not selected for the World Bank evaluation were randomly selected for the REPOA study. UNICEF also conducted a youth-focused impact evaluation on a subset of the households included in the REPOA study. For both the youth-focused and REPOA evaluations, ethics approval was provided by the Tanzania Commission for Science and Technology (COSTECH).

7 Logistically, sample selection was carried out as follows: TASAF provided the list of eligible households for each village. Enumerator supervisors worked with the village leaders to conduct a random sampling of eligible households, from the TASAF list. Once a household was sampled, the village leader provided information on household type. The process was repeated until the desired ratio of dual-adult to single-female households was reached.

8 In the district of Kisarawe, the treatment status of two villages was switched due to an administrative error. For this study, we treat these communities in accordance with their actual treatment receipt. Results are consistent when these communities are excluded from the analysis or classified in accordance with their original treatment status (results available upon request).

3.2 Sample construction and validity of the quantitative study component

For the present study, we restricted our sample to children aged 3 to 15 years at baseline (aged 5 to 17 years at endline). We focused on this age range because: (1) of the availability of information on child education and productive activities for children aged 5 years and older at endline; and (2) all of the sample remained children under 18 years of age at endline, two years after the baseline. We consistently used these age limits, so that each regression estimating PSSN impacts on child activities is based on the same sample of children.[9]

Table 2 describes key features of the study sample at baseline, including: the household demographic characteristics that determine cash transfer size (panel A); household engagement in productive activities (panel B); and basic child characteristics (panel C).[10] Column 1 shows averages for the control group. About 58 per cent of households had at least one child aged 0 to 5 years and nearly all households had at least one child aged 5 to 17 years. On average, households had about 1.5 children in primary school and 0.4 children in secondary school. Most households owned land and livestock (75 and 58 per cent respectively) and one in four households operated a non-farm business. Children were, on average, 9 years of age, and about 51 per cent of -sampled children were attending school at baseline. About 37 per cent of children were able to read and write.

Of the 4,246 children observed at baseline, 3,516 were also observed at endline. In Table 2 (panel D), we test whether the survey attrition rate was significantly affected by the programme, by regressing the indicator for attrition on the treatment and district indicators. The attrition rate in the control group is nearly 17 per cent. In the treatment group, the attrition rate is about 1 percentage point higher than in the control group, but this difference is not statistically significant.

Column 2 of the same table examines baseline balance between treatment and control villages. It shows the result of regressing each baseline characteristic on the treatment indicator and on the stratification variables that are district indicators. Regressions are estimated using ordinary least squares (OLS) with robust standard errors clustered at the village level. Column 3 reports balance tests for the sample of attritors (i.e. households or children who were lost to follow up), and column 4 the same for the panel sample of households or children observed in both survey waves. We observe only one violation of balance. In the panel sample – the sample used in our econometric analysis – the percentage of female children is higher in treatment villages. As described below, all child-level econometric analyses control for gender, thus ensuring that results are not biased by imbalances in the gender composition of our sample.

Appendix Table A2 reports further balance tests by treatment arm. Our results are consistent with the descriptive statistics obtained from Table 2. Table A2, however, shows some evidence of differential attrition: Children in villages receiving cash only are significantly more likely to attrit compared with children in control villages. As we will describe in section 6, our results are robust to correcting for differential attrition with inverse probability weights. Appendix Table A3 compares the baseline characteristics of children in the panel sample with those of children who attrit.

Finally, we describe programme take-up. At the endline interview in treatment villages, 81 per cent of sample households were aware of the PSSN programme, while about 75 per cent reported having

9 In the baseline data, school attendance for children aged 3 years was recorded as zero. About 16 per cent of these youngest children had started school by endline. For consistency with estimates on labour outcomes, we opted to include these youngest children in the sample and conduct all child-level impact estimates on the same sample of children. Our results are robust to slightly changing the sample age range, for instance, considering children aged 4–15 years or 4–16 years at baseline (results available upon request).

10 Table A1 in Appendix A provides the same descriptive statistics for an additional set of household-level variables.

received payments from the PSSN programme (*see Appendix Table A4*). In villages receiving both cash and public works, about 26 per cent of adults had participated in public works during the year before the survey. Among beneficiary households, 96 per cent had received cash transfer payments in the two months before the endline interview. The share of households that reported receiving PSSN cash transfers in control villages was about 3 per cent.

3.3 Qualitative study component

As we discuss in more detail below, results from the quantitative data analysis indicate that the PSSN cash transfers and public works led to an increase in child participation in livestock herding for the household, a reduction in the prevalence of children engaging in paid work outside the household, and improvements in children's education outcomes. We designed a qualitative study to explore the mechanisms driving these changes. Qualitative data were collected from September to October 2017 in three purposively selected United Republic of Tanzania mainland PAAs, plus the one Zanzibar PAA. We selected the mainland district of Mbogwe because it had the highest rate of child labour according to the quantitative survey. The mainland districts of Kahama and Uyui were selected because children in these districts are known to participate in mining and tobacco farming respectively. The Zanzibar PAA was selected to better understand differences in child labour between the mainland and the main island. Within each of the four selected districts, we selected two villages, one from a treatment study arm and one from the control arm. We selected the four treatment villages to give an even spread across the cash only and cash plus public works arms. We further prioritized villages with the highest number of eligible children and, in Kahama and Uyui, on the basis of proximity to mines and tobacco plantations respectively.

Qualitative data collection included in-depth interviews (IDIs) and focus group discussions (FGDs) with children and with adult caregivers.[11] The children's FGDs used a photo voice technique to elicit richer data. Children received brief training on how to use a digital camera and were then asked to take pictures of the work that they and other children do around their communities. The next day, the children returned to a second session, in which the facilitators used the children's photos to guide discussions around child work and the risks they faced while working inside or outside of their households. All facilitators were experienced qualitative data collectors and had been trained by two of the co-authors prior to the field piloting of the tools.

For IDIs, study participants were selected from the quantitative sample. In each village, six IDIs were conducted, three with children aged 11 to 17 years (at the time of the interview) and three with caregivers. Children and caregivers were not necessarily pairs (i.e., they did not have to be related or live in the same household). Additionally, two FGDs were conducted in each village, one with children and one with caregivers (five to eight participants in each). In total, we carried out 24 IDIs with children, 24 IDIs with caregivers , 8 FGDs with children and 8 FGDs with caregivers.

11 Prior to all data collection activities, the study ethnographers explained the purpose of the study and details of what participation entailed to adult and child participants. After verbal explanations, participants were provided with written consent forms to read and sign. Participants who could not read or write provided verbal consent and a thumbprint. Consent was provided by all caregivers for their IDI and FGD participation, as well as from the caregivers of children who participated in IDIs and FGDs. All children provided assent for their own participation.

4. METHODOLOGY AND MAIN OUTCOME INDICATORS

4.1 Quantitative methodology

Since many of our outcomes of interest were measured only at endline, we mainly rely on cross-sectional models estimated using data from the endline surveys. We use the following specification as our first equation:

$$Outcome_{iv} = \beta_1 + \beta_2 P_v + \boldsymbol{\beta_3}' \boldsymbol{X_{iv}} + \varepsilon_{iv} \quad (1)$$

Here $Outcome_{iv}$ represents the outcome variable for child i living in village v. The term P_v is a dummy variable equal to one if the village is in the PSSN programme area (either cash transfers only or cash transfers plus public works). $\boldsymbol{X_{iv}}$ is a vector of baseline control variables (gender; age; determinants of transfer size, as listed in Table 2, panel A; and district fixed effects), and ε_{iv} is the error term. As for the balance tests described in the previous section, regressions are estimated using OLS with robust standard errors clustered at the village level. Our coefficient of interest is β_2, representing the overall impact of the PSSN on child outcomes. Given non-universal take-up, estimated impacts should be interpreted as intent-to-treat effects.

We also distinguish, in equation 2, between villages that received cash only and villages that received both cash and public works, by replacing the $\beta_2 P_v$ term used in equation 1 as follows:

$$Outcome_{iv} = \beta_1 + \beta_{2a} CT_v + \beta_{2b} CT\&PWP_v + \boldsymbol{\beta_4}' \boldsymbol{X_{iv}} + \varepsilon_{iv} \quad (2)$$

Here CT_v is equal to one if the village received cash transfers only, while $CT\&PWP_v$ is equal to one if the village received both cash transfers and public works. In this case, β_{2a} represents the effect of cash only and β_{2b} represents the joint effect of cash and public works. To assess whether the joint programme had a different impact to the cash-only component, we test whether the difference between the estimated coefficients β_{2a} and β_{2b} is statistically significant.

In our primary estimates, we consider child participation in economic activities over the 12 months prior to the endline interview.[12] We focus on four types of economic activities: farm work for the household (excluding livestock); livestock herding for the household; work in a non-farm household business; and paid work outside the household (including both formal wage work and informal piecework). We analyse each activity separately and create an additional outcome to denote child engagement in *any* type of economic activity.

We also test whether the PSSN resulted in reduced child exposure to hazards during their engagement in economic activities and household chores.[13] We measure hazardous work using a UNICEF survey module extensively tested by Dayıoğlu (2012), which considers five hazards: carrying heavy loads; working with dangerous tools; exposure to dusts, fumes or gases; exposure to extreme cold, heat or humidity; and exposure to loud noise or vibration. A child is classified as being in hazardous work if she or he is reported as being exposed to any of the above hazards, or if the child is reported as working in a hazardous occupation as defined by Tanzanian legislation (work at night; exposure to bullying,

12 Outcomes measured in reference to the year before the endline interview could be affected by recall bias. We expect, however, that this would be similar in treatment villages and control villages, without significantly biasing estimated impacts. In Appendix A, we also show impacts on participation in economic activities during the week before the interview, and in household chores during the day before the interview. We consider five types of household chores (collecting water; collecting firewood or other fuel materials; collecting nuts or other tree fruits; taking care of children, cooking or cleaning; taking care of elderly or sick household members) and an aggregate indicator referring to engagement in any of the five chores.

13 These hazards relate to economic activities and household chores respectively carried out during the week and day prior to the interview.

intimidation and violence; work in bars, hotels and places of entertainment).[14] We also use a binary variable to indicate whether the child had ever suffered any injuries/illnesses in her/his economic activities or household chores, and a continuous variable to measure the number of days of daily activities missed due to the most serious injury/illness, if any had occurred.

We estimate PSSN impacts on education using six different outcomes: whether the child attends school at the time of the survey; whether the child can read and write (i.e., literacy); the highest grade of education completed by the child; whether the child had attended school regularly during the week before the interview, defined as a binary variable equal to one if the child had attended school on all days her/his school was open that week; whether the child had spent at least one hour on homework or studying during the week before the interview; and whether the child had dropped out of school between baseline and endline (only for children attending school at baseline).

Most of our outcome variables were measured only at endline. Two of the education outcomes – school attendance and literacy – were also captured at baseline, allowing us to estimate a difference-in-differences model, specified as follows:

$$Outcome_{ivt} = \beta_1 + \beta_2 P_v \times Endline_t + \beta_3 Endline_t + \alpha_i + \varepsilon_{ivt} \quad (3)$$

Here $Endline_t$ is a dummy variable equal to one if the observation is from the endline survey or equal to zero if it is from the baseline survey. The term $P_v \times Endline_t$ is the interaction between the endline and the programme indicator. Individual fixed effects – represented by α_i – control for time-invariant individual characteristics, while the remaining terms are defined as in equation 1. Again, standard errors are clustered at the village level. Our coefficient of interest is β_2, representing the overall impact of the PSSN on education outcomes.

4.2 Qualitative methodology

FGDs and IDIs covered topics such as child engagement in work and chores, attitudes toward child engagement in these activities, the impact of the PSSN (for treatment villages only) on children's productive activities and schooling, exposure to hazards, and community trends in school attendance and performance.

All interviews and focus group discussions were audio-recorded and simultaneously transcribed and translated from Swahili to English by the ethnographers who conducted the interviews. The ethnographers also summarized each interview and focus group discussion, describing the characteristics of respondents and the emerging themes. A random sample of transcripts were selected for proofreading to ensure translation accuracy. Data management and analyses were conducted using Dedoose qualitative data analysis software.

Data were analysed using an iterative and collaborative process. Analysis began with a close reading of transcripts and summaries. An initial codebook was developed using deductive concepts derived from the interview guides. We then convened to discuss the deductive codes and supplement the codebook with inductive themes emerging from the interviews. We double-coded four interview transcripts and discussed discrepancies. Adjustments were made to combine certain codes and add different inductive codes. Subsequently, we independently coded the remaining transcripts and regularly consulted the rest of the research team during the coding process.

14 Tanzanian legislation also includes working at water bodies such as the sea, lakes or rivers (e.g., fishing) as a hazardous occupation. We did not consider this hazard in our definition of hazardous work because of the very low child participation rate in fishing activities (0.5 per cent).

Upon completion of the coding, we produced thematic reports on the major topical areas (productive activities, chores, hazards and schooling), read through excerpted text and noted patterns within and across transcripts. Comparisons were made across communities and data sources (FGD vs IDI). Key themes and illustrative quotes were then included in analytic memos that were shared among research team members. Final memos were compared and contrasted to findings from the quantitative study component.

5. RESULTS

This section describes the results of the quantitative and qualitative analysis, for three main outcome domains for children: economic activities, hazardous work, and education. Quantitative impact estimates are shown in Tables 3 to 5. In each table, panel A compares endline outcomes for households in control villages with those of households in treatment villages, irrespective of whether the treatment received was cash only or cash and public works. Panel B in each table separately reports impacts for households in villages receiving cash only and those for households in villages receiving cash and public works. The last row of panel B reports the p-value for the test of equality of the estimated impact coefficients between treatment arms. Each table also reports the endline average value of the outcome variables in the control group.

5.1 PSSN impact on child economic activities

About 36 per cent of children had participated in any economic activities during the year before the endline interview. The PSSN programme led to a shift in child activities from paid work outside the household to work within the household, without significantly changing child engagement in economic activities overall. The probability that children had participated in livestock herding for the household during the year before the survey is 4 percentage points higher in PSSN villages than in control villages, representing a 24 per cent difference over the control mean of 16 per cent (*see Table 3, panel A, column 3*). In contrast, the probability that children had participated in paid work outside the household during the same period is 2 percentage points lower for children in PSSN villages compared with children in control villages, representing a 40 per cent difference over the control mean of 5 per cent (*see Table 3, panel A, column 5*). We cannot reject the null hypothesis that impacts on these outcomes are equivalent between villages receiving cash only and villages receiving cash and public works.

A plausible explanation for the shift in child economic activities from outside to inside the household is family investment in livestock. The probability that households own any livestock is 18 percentage points higher in treatment villages than in control villages. This represents a 39 per cent increase over the control group average of 0.43 at endline (*see Appendix Table A5, panel A, column 1*). The PSSN did not influence the probability that households had owned or operated any land during the last growing season before the interview, nor the probability that households had operated any non-farm businesses during the same period (*see Table A5, panel A, columns 6 and 7*). Adult PSSN beneficiaries also increased their participation in livestock herding for the household and reduced their participation in paid work outside the household, although the latter impact is not statistically significant (*see Appendix Table A6*).[15] In short, the PSSN increased household investment in livestock and led adults and, to a

15 Paid work outside the household includes wage work and casual labour. Adult participation in public works, captured separately, increased significantly in public works villages (results not reported).

lesser extent, children to participate in caring for the additional animals raised on the household farm.[16]

In accordance with the quantitative findings, children and caregivers alike provided qualitative evidence describing how the PSSN programme had reduced child participation in work outside the household. Children often engaged outside the household in casual labour, described as work that occurred on an occasional or seasonal basis (examples included agricultural work, taking care of another family's livestock, or working on construction projects that arose in the community). For some families, the PSSN had allowed for reductions in child participation in casual labour, meaning that children now worked fewer days and had time to rest. One caregiver FGD participant explained:

> "The PSSN programme has given children time to rest for some days without involvement in casual works. In the previous time, children were forced to work every day or every week so as to get their needs, but now as we are assured of providing them with school requirement so they may spend even a week without working in casual labours."
>
> – Caregiver

A 13-year-old girl participant explained how PSSN money gave her family some financial breathing room, allowing her to work less:

> "On one hand, I get more time now. If I want, I can spend more time because we have labourers who work in our farms, my grandfather uses PSSN money to employ casuals to help us in farming. On the other hand, TASAF money has reduced my time to search for casual works because if I fail to get money, I can use TASAF money. I was spending one day per week for casual works before PSSN, but after PSSN I spend one day per month on casual works."
>
> – 13-year-old girl

For caregivers, this restructuring of child economic activities from outside to inside the household was highly welcomed, because it meant that families could now invest in their own business ventures and not rely on others:

> "PSSN has reshaped children's contributions to the livelihood of the household. When I get PSSN money instead of doing wage labour with my children, I work in my own farms. To me, this is a good thing, because working in other people's farm is something that we hate, but sometimes we have to do it in order to get food."
>
> – 49-year-old female caregiver
>
> "PSSN has added responsibilities for my sons because the money that I got from TASAF is the one I used as capital for my charcoal business. Before PSSN, I engaged in mining activities to make money, but now I engage in charcoal production as well, of which my sons are also participating in the charcoal production."
>
> – 60-year-old female caregiver

16 Rosas et al. (2019) also analysed PSSN impacts on child work. Their results are not directly comparable to ours, because they considered children up to 14 years, while our sample extends to children aged 17 years. However, Rosas et al. also found that the PSSN did not significantly affect overall child participation in economic activities during the week before the interview. The authors also found a statistically significant reduction in total hours worked during the same reference period, conditional on participation in economic activities.

The fact that there was no overall decrease in child engagement in economic activities may be attributed to the size of the cash transfer as well as to the high level of poverty experienced by households. Several participants commented on the insufficiency of PSSN payments, both in terms of their value and frequency. In one caregiver FGD (Zanzibar) and two child FGDs (Mbogwe and Zanzibar), participants reported that they had seen no changes in child engagement in economic activities due to the PSSN. A 15-year-old male participant said:

> "PSSN has not changed what I have been doing before. I am still doing charcoal business, herding cattle and sometimes selling sisal poles. The activities have neither increased nor decreased because of PSSN."
>
> – 15-year-old boy

A caregiver living with her two grandchildren said of her older granddaughter:

> "PSSN did not affect her contribution to the livelihood of the family because we still need the money in the family. We can get it from wage labour because what we are receiving is not enough for the family, so she has to keep on working for her own need and family need as well."
>
> – 71-year-old female caregiver

5.2 PSSN impact on child exposure to hazards

Child exposure to work-related hazards was a serious concern across communities. About 14 per cent of children in the control group reported engaging in hazardous economic activities or household chores. The most common hazards included carrying heavy loads (10 per cent in the control group), working with dangerous tools (8 per cent), exposure to dusts, fumes or gases (7 per cent), and exposure to extreme heat, cold or humidity (4 per cent). The PSSN did not have any statistically significant effect on the prevalence of children engaging in hazardous activities (*see Table 4, panel A, column 1*). The PSSN also neither significantly influenced the probability that children suffered from any injuries or illnesses while performing economic activities or household chores, nor the number of days of main activities missed due to the most serious injury or illness (*see Table 4, panel A, columns 2 and 3*). Results are similar in the two treatment arms. Appendix Table A7 reports estimated PSSN impacts on child exposure to each single hazard. Results suggest that the programme significantly increased the probability that children worked at night and worked in bars, hotels and places of entertainment (*see Appendix Table A7, panel A, columns 6 and 8*). The prevalence of both hazards is very low, however, at about 0.1 per cent.[17]

In qualitative responses, common hazards reported included animal bites, use of sharp or heavy tools, exposure to heat and exposure to fumes. Several productive activities were described as being especially dangerous for children, because of the strain they put on children's bodies and because they exposed them to multiple types of hazards. For example, brick making was considered unsafe as children were exposed to the hot sun during the production process, to extreme heat and fumes while burning the bricks and to the potential for injury when stacking the bricks. One caregiver recounted the danger of the brick production process as experienced by her 16-year-old son:

17 Information on hazard exposure was asked for children who had engaged in economic activities in the week before the endline interview or in household chores in the day before the endline interview. We also tested whether the PSSN resulted in children spending 'excessive hours' in economic activities or on household chores during the week before the endline interview. Based on an International Labour Organization (2008) report, we considered three age groups: under 12 years, 12–14 years and 15–17 years. To these age groups, we respectively applied the following recommended thresholds to establish excessive hours in economic activities: 1, 14 and 43 hours per week. For all age groups, we used the suggested threshold of 28 hours of household chores per week (weekly hours in chores are proxied as daily hours multiplied by seven). The PSSN did not have any statistically significant impact on the prevalence of children spending excessive hours in economic activities or on household chores (results available upon request).

> "This business is tasking them a lot. They make bricks when it is sunny, sometimes they suffer headache to the extent of taking painkillers, then they go on. Again, during the period of burning bricks, it pains them because they are exposed to high temperature direct to their faces, but they have to do it because there is no way out, they have to tolerate."
>
> – 46-year-old female caregiver

According to caregivers, the danger inherent in some of the economic activities was exacerbated by the young age of some children. Though some hazardous activities are considered acceptable for older children, there were some cases of extremely young children engaged in hazardous work, which caregivers lamented:

> "Not only that but also I feel bad when children aged 5 to 10 years involved in tobacco farming because they are still too young to that kind of work. Example, they may spend the whole day in farms harvesting tobacco or sometimes involved in the process of drying of tobacco in the burners by arranging tobacco in the burner and making fire."
>
> – 47-year-old male caregiver
>
> "To add on that, children in our area are engaged in dangerous works like cutting down trees, selling water into construction areas, excavation of holes for trees plantation and driving oxen cart. All these works are too tough compared to their age and they may be injured or lose their nails or legs as it has happened to some children in the village."
>
> – 55-year-old female caregiver

While quantitative findings do not indicate a reduction in hazard exposure, it is possible that the shift in economic activities from outside to inside the household resulted in safer environments for children. Casual labour was often described as being the riskiest type of work because caregivers could not supervise. Both children and caregivers mentioned that children working away from their caregivers and households were more likely to be exposed to violence from employers and other children:

> "I have seen children abused by landlords when engaged in casual works in the farms, example during weeding activities, the landlord abuses children and sometimes refuse to pay them their money after they have completed the work."
>
> – Child FGD participant
>
> "When children engaged in casual work like cultivation without supervision from their parents, they may be influenced by other children on bad behaviour like theft, disobedient or alcoholism, which is not good."
>
> – Caregiver FGD participant

5.3 PSSN impacts on child education outcomes

Figure A1 in Appendix A shows average school attendance by treatment status at baseline (left panel) and endline (right panel). School attendance has an inverted U-shaped relationship with age and peaks at about age 11, when it reaches about 90 per cent. At baseline, school attendance of children in the treatment villages and control groups mostly overlaps. In fact, differences in education outcomes as measured at baseline were not significantly different between children in treatment and control villages (*see Table 2, panel C, column 4*). At endline, children in the treatment villages have higher school attendance than children in control villages across all ages, indicating a beneficial effect of the PSSN on school participation. Estimates in Table 5 confirm this positive impact, showing that the PSSN increased the probability that children attended school by about 5 percentage points, an 8 per cent increase over the control group average of 68 per cent at endline (*see Table 5, panel A, column 1*). Similarly, the PSSN increased the probability that children could read and write by 5 percentage points, a 9 per cent increase over the control group average of 52 per cent. Programme impacts do not differ significantly between treatment arms.

The PSSN significantly increased the highest grade of education completed by children, although the impact is rather small in magnitude. Children in treatment villages completed 0.17 grades more of education, a 6 per cent increase over the 2.97 grades completed on average by children in the control group (*see Table 5, panel A, column 3*). Assuming that it takes on average 9 months to complete one grade of education, the estimated impact can be interpreted as the PSSN having increased the time spent in school by about 1.6 months on average. The programme also increased the probability that children had spent at least one hour studying during the week before the endline interview (*see Table 5, panel A, column 5*).

The programme did not significantly affect the probability that children attended school regularly, nor the probability that they dropped out of school during the time interval between baseline and endline (*see Table 5, panel A, columns 4 and 6*).[18] When estimating impacts by treatment arm, however, we do find a statistically significant impact on school dropout. Children in villages receiving both cash and public works were 5 percentage points less likely to having dropped out of school, a 37 per cent reduction in dropout relative to the control group average (*see Table 5, panel B, column 6*).[19]

Some of the improvement in school attendance in PSSN communities may be attributed to families investing programme benefits into purchasing school supplies for children, enabling them to attend school. Though government initiatives have eliminated tuition fees for state education at primary and secondary level, households still need to buy uniforms, shoes, books, pencils, etc., for their students. Based on the endline survey, lack of money for fees or uniforms is the second most commonly reported reason for school dropout, after failure of promotion exam. One caregiver FGD participant said:

18 Evans et al. (2014) estimate PSSN impacts on school attendance and literacy, as part of the evaluation of the pilot PSSN programme (covering three districts and only including the cash component). They report both intent-to-treat (ITT) impacts and effects on households which received the transfers. Only the latter are statistically significant. The difference in impacts between our analysis and the analysis by Evans et al. is possibly due to the different age range considered (Evans et al. consider all children aged 0 to 18 years). Rosas et al. (2019) estimate ITT impacts of the PSSN on education outcomes. Consistent with our results, the authors find increases in enrolment, years of schooling, and self-reported literacy, as well as a reduction in school dropout (the latter in less poor households only). Rosas et al. do not assess impacts by treatment arm.

19 Most school dropouts abandoned school after completing primary school (57 per cent of dropouts). The most frequently reported reasons for dropping out weare 'Failed promotion exam' (about 30 per cent of dropouts), 'No money for fees/uniforms' (13 per cent), 'Not interested' (11 per cent) and 'Acquired all education wanted' (4 per cent). Other reasons included 'Illness or disability', 'Pregnancy' and 'Had to work or help at home.'

> "When a household receives PSSN funds, one of the conditions is to make sure that they spend the money in buying school uniforms, shoes, pens, exercise books and other school needs. The fact that PSSN has taken care of school requirements has reduced the burden on children. Children now get time to rest and revise what they have been taught in school."
>
> – Caregiver FGD participant

Another caregiver participating in an FGD said that attendance was better at school now, because children could afford proper uniforms and shoes, and did not stay home out of embarrassment:

> "There is no such a segregation as children from well-off household and poor households. All children are equal now; they all get uniforms and are smart in school uniforms."
>
> – Caregiver FGD participant

Relationships between the PSSN and school performance were widely discussed. Most participants who discussed these relationships believed that the funds led to better performance. One caregiver with grandchildren said that he had used PSSN money to hire workers for the family farm:

> "The casual labourers that I am employing have given a relief to my [grand]children. As they spend less time in farming activities now than it used to be before PSSN, they can use that time to work for their own consumption or concentrate on studies."
>
> – 83-year-old male caregiver

A 15-year-old girl shared that she had used PSSN funds to pay for "extra curriculum studies", which she said had "improved my performance in Swahili and mathematics". In many cases, children and caregivers alike attributed improved performance to students having all of the materials they needed, as discussed above.

On the other hand, several participants either said that their children's performance had not been affected or that they were unsure what the impacts had been. One 15-year-male participant said he helped his grandmother in her small shop that she had opened with PSSN funds, selling cassava chips and avocados. He felt that the programme had affected him negatively:

> "I have to work in grandmother's business. I lose concentration in academics because I have to spend time in the business instead of studying. I get tired, particularly during examination time."
>
> – 15-year-old boy

Although there were few comments of this type, it is possible that investment in family businesses due to the PSSN could result in increased responsibilities for children.

6. ROBUSTNESS AND HETEROGENEITY

We test whether results are maintained when correcting for differential attrition with inverse probability weights. We obtained the predicted probability that children are observed at endline based on equation 1, but with the term $\boldsymbol{X}$ augmented to include all the baseline covariates in Table 2 and Appendix Table A1. The weights are computed as the inverse of this probability. Tables A8 and A9 include weighted impact estimates on child work and education respectively. Estimates are effectively unchanged with respect to the unweighted estimates, suggesting that the main estimates are not significantly affected by differential attrition.

We examine whether results are robust when using a shorter reference period to measure child work. Consistent with results for the annual reference period, we find that the PSSN increased the probability that children had herded livestock for the household in the *week* prior to the endline interview (*see Table A10, column 3*). We do not, however, find any statistically significant impact on participation in paid work outside the household in this case. In our interpretation, this difference indicates that shorter reference periods do not fully capture programme impacts and that they are relatively more prone to seasonality effects. We also examined the impact on child engagement in household chores and observe no statistically significant programme impacts (*see Appendix Table A11*).

We further explored whether programme impacts differ by gender, age group and baseline school attendance (*for results, see Appendix B*). The reduction in child participation in paid work outside the household was significantly stronger for males than for females, for older children than for younger children, and for in-school children than for out-of-school children (*see Tables B1–B3, column 5*). Gender and age differences in estimated education impacts are mostly not statistically significant, although schooling effects appear to be stronger for males, for younger children and for children who were out of school at baseline (*see Tables B4–B6*). Overall, results suggest that both females and males at least partly replace time spent in paid work outside the household with time spent in school and herding livestock for the household. This substitution of work outside the household for work inside the household is significantly stronger for males and for older children, who are more likely to participate in paid work outside the household in the absence of the PSSN. Improvements in schooling outcomes are stronger for younger children and for those who were out of school at baseline.

7. CONCLUDING DISCUSSION

The United Republic of Tanzania's Productive Social Safety Net targets extremely poor households, in which children's efforts are needed to keep the household functioning, to feed everyone and to pay for supplies and supplemental tuition fees. The amount of money received by the beneficiary households was helpful, but insufficient to completely replace the benefits of child work. We find, however, that the PSSN had positive effects on child work and education. Children in beneficiary households were 40 per cent less likely to be working for pay outside the household, shifting their efforts toward income-generating activities that directly benefited their households. The funds received under the programme were often used by families to purchase livestock, resulting in a 24 per cent increase in the proportion of children who reported caring for livestock.

Working within the household rather than for others suggests that children may be safer while working, or at least that it is their caregivers who are making decisions regarding their exposure to hazards rather than non-relatives. We did not find a statistically significant association between the PSSN and child exposure to work-related hazards in the quantitative analysis. In qualitative responses, both children and caregivers described work for the family as being less risky, particularly in regard to the risk of bullying and cheating by employers. Additionally, we found positive programme effects on child schooling. The qualitative research contributes to explain the mechanisms through which the programme may affect schooling. Participants described how the funds from the programme helped to lessen the social exclusion of poor children; beneficiary households could afford school uniforms, shoes and textbooks, enabling the children to attend school and blend in with their peers. While caregivers generally stated that direct school fees were no longer charged, some chose to support their children's learning by paying extra fees for supplemental tuition. Generally, impacts were not significantly different between villages receiving cash transfers only and villages receiving both cash transfers and public works, possibly because of the relatively low participation rate among adults in the public works programme.

Previous research in Malawi and Zambia (de Hoop et al., forthcoming) found that unconditional cash transfers significantly increased child participation in detrimental forms of work (excessive working hours or exposure to work-related hazards). It is possible that the PSSN conditions on school attendance prevented an increase in participation in detrimental forms of work among children in the United Republic of Tanzania. While findings from the United Republic of Tanzania may not be directly comparable to those in other countries due to contextual differences, other research does suggest that cash transfer conditions matter for children's time allocation (Baird et al., 2011).

Besides school attendance conditions, interventions to complement cash transfers could be considered to further enhance education improvements. Such complementary services could include the simple provision of information to caregivers on the importance of education and the risks related to child labour (following, for instance, Benhassine et al., 2015). Overall, our results highlight the importance of monitoring potential unintended effects of programmes that expand household productive capacity.

Finally, we argue that evaluations should routinely use mixed methods approaches. While our quantitative analysis showed that children's overall workload changed little, the qualitative analysis allowed us to identify the ways in which their lives had improved. Children were still working but were more likely to be doing so under the supervision of their caregivers and for the direct benefit of their families.

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TABLES

Table 1. Programme parameters and evaluation timeline – as set by Policy Research for Development (REPOA)

	Tanzania's Productive Social Safety Net (PSSN)
Household targeting and location selection	*2014–2015 (completed before the baseline survey)* The targeting criterion is extreme poverty, assessed through three-stage targeting: (1) geographical, (2) community-based, (3) proxy means test. For public works, eligibility also requires the presence of household members 'able to work'.[a] Eight mainland Project Authority Areas (PAAs): Misungwi, Kahama, Kilosa, Kisarawe, Handeni, Mbogwe, Itilima, Uyui. One PAA in Zanzibar: Unguja. PAAs were randomly selected from among 16 mainland PAAs (and 1 Zanzibar PAA) included in a World Bank evaluation (these, in turn, had been randomly selected from the 96 PAAs of wave 4 and wave 5 scale-ups of PSSN). 102 villages randomly selected in the above PAAs, with number of villages per PAA proportional to PAA size (no overlap with villages of the World Bank evaluation).
Baseline survey	*May–July 2015* Random selection of 15 to 18 households per village. Women Empowerment in Agriculture Index type 1 (dual-adult) and type 2 (single-female) households were included, in the proportion of two thirds and one third respectively.
Assignment of communities to PSSN or control	*August 2015* Random assignment (lottery) to three arms: ■ cash transfers only (35 villages) ■ cash transfers and public works (26 villages) ■ control (41 villages)
First cash transfer in PSSN communities	*September–October 2015* Cash transfers (monthly amounts): ■ 10,000 TZS (5 USD) per household ■ 4,000 TZS (1.8 USD) per household, for households with children aged 0–17 years ■ 4,000 TZS (1.8 USD) per household, for households with children aged 0–5 years and/or pregnant women, conditional on health compliance ■ 2,000 TZS (0.9 USD) per child, conditional on primary school attendance (up to 8,000 TZS) ■ 4,000–6,000 TZS (1.8–2.7 USD) per child, conditional on lower or upper secondary school attendance (up to 12,000 TZS) ■ Transfers are made bimonthly, to an adult woman whenever possible Public works (daily wage rate): ■ 2,300 TZS (1.4 USD) per one adult 'able to work', for up to 60 days in four months
Endline survey	*April–June 2017*

Note: The evaluation was conducted by Policy Research for Development (REPOA). a. Ability to work is defined so as to exclude, among others: household members who do not normally reside in the community; children under the age of 18 who are still attending school; older people over the age of 65; lactating women during the first 10 months after delivery; pregnant women who are more than 4 months pregnant; and people suffering from illnesses or disabilities that impede even light work. Source: World Bank (2012, 2016).

Table 2. Baseline balance and differential attrition

	Full baseline sample		Attritor	Panel
	Control mean (S.D.) (1)	Difference T-C [p-value] (2)	Difference T-C [p-value] (3)	Difference T-C [p-value] (4)
Panel A. Household level (deteraminants of transfer size)				
Any child <5 years of age	0.581	-0.010	-0.004	-0.011
	(0.494)	[0.707]	[0.956]	[0.684]
Any child aged 5–17 years	0.963	-0.000	0.042	-0.004
	(0.190)	[0.981]	[0.307]	[0.665]
Number of children attending primary school	1.526	-0.105	0.105	-0.126
	(1.284)	[0.229]	[0.547]	[0.177]
Number of children attending secondary school	0.390	0.030	0.320**	-0.003
	(0.805)	[0.581]	[0.011]	[0.960]
Panel B. Household level (productive activities)				
Owned/operated any land last growing season	0.751	0.042	0.083	0.038
	(0.433)	[0.202]	[0.207]	[0.268]
Owns any livestock	0.576	-0.030	0.087	-0.044
	(0.495)	[0.406]	[0.228]	[0.250]
Owned/operated any non-farm business past 12 months	0.250	0.011	0.112*	0.000
	(0.434)	[0.667]	[0.075]	[0.996]
N (households)	587	1,460	153	1,307
Panel C. Child level				
Age	8.792	0.086	0.278	0.062
	(3.694)	[0.453]	[0.416]	[0.614]
Female	0.488	0.023	-0.003	0.028*
	(0.500)	[0.115]	[0.943]	[0.079]
Literacy	0.371	0.007	0.016	0.007
	(0.483)	[0.737]	[0.681]	[0.760]
Attends school	0.505	0.008	0.020	0.008
	(0.500)	[0.700]	[0.650]	[0.739]
Panel D. Child attrition				
Attrited	0.168	0.013		
	(0.374)	[0.467]		
N (children)	1,780	4,246	730	3,516

Note: The sample includes children aged 3–15 years at baseline (5–17 years at endline). Column 1 reports averages and standard deviations (in parentheses) for the control group. Columns 2 to 4 examine baseline balance between treatment and control villages. They show the result of regressing each baseline characteristic on the treatment indicator and on the stratification variable (district). Regressions are estimated using OLS with robust standard errors clustered at the village level. *P*-values in brackets. *p <0.1, **p <0.05, ***p <0.01. Source: Tanzania PSSN REPOA Evaluation.

Table 3. PSSN impact on child participation in economic activities, past 12 months

Dependent variables	Any economic activities (1)	Farm work for the household (excluding livestock) (2)	Livestock herding for the household (3)	Household non-farm business (4)	Paid work outside the household (5)
Panel A. Overall impact					
PSSN	-0.006	-0.002	0.038**	-0.005	-0.019**
	[0.743]	[0.923]	[0.016]	[0.160]	[0.019]
Panel B. Two treatment arms					
CT	-0.007	-0.001	0.032*	-0.005	-0.019**
	[0.727]	[0.943]	[0.076]	[0.158]	[0.035]
CT&PWP	-0.004	-0.002	0.046**	-0.004	-0.020**
	[0.853]	[0.925]	[0.018]	[0.294]	[0.036]
CT=CT&PWP, p-value	0.889	0.980	0.487	0.809	0.922
Observations	3,516	3,516	3,516	3,516	3,516
Control average	0.361	0.329	0.156	0.011	0.047

Note: The sample includes children aged 3–15 years at baseline (5–17 years at endline). Estimates in panels A and B are obtained by using the endline data and estimating regression specifications (1) and (2) respectively. In panel A, PSSN is an indicator equal to one for children in treatment villages, either cash only or cash and public works. In panel B, CT is equal to one for children in villages receiving cash only, while CT&PWP is equal to one for children in village receiving both cash and public works. All regressions include controls for the determinants of transfer size (at least one child <5 years of age; at least one child aged 5–17 years; number of children attending primary school; number of children attending secondary school) and fixed effects for gender, age and the stratification variable (district). All controls are measured at baseline. Regressions are estimated using OLS with robust standard errors clustered at the village level. p-values in brackets. *p <0.1, **p <0.05, ***p <0.01. Source: Tanzania PSSN REPOA Evaluation.

Table 4. PSSN impact on exposure to hazards, and health

Dependent variables	Any hazard (1)	Ever been hurt or suffered from illnesses/injuries (2)	Number of days of main activities missed due to most serious illness/injury (3)
Panel A. Overall impact			
PSSN	0.009	-0.002	-0.032
	[0.569]	[0.456]	[0.257]
Panel B. Two treatment arms			
CT	0.019	-0.002	-0.027
	[0.328]	[0.528]	[0.365]
CT&PWP	-0.004	-0.002	-0.038
	[0.833]	[0.518]	[0.227]
CT=CT&PWP, p-value	0.244	0.934	0.644
Observations	3,516	3,516	3,516
Control average	0.138	0.007	0.077

Note: The sample includes children aged 3–15 years at baseline (5–17 years at endline). Estimates in panels A and B are obtained by using the endline data and estimating regression specifications (1) and (2) respectively. In panel A, PSSN is an indicator equal to one for children in treatment villages, either cash only or cash and public works. In panel B, CT is equal to one for children in villages receiving cash only, while CT&PWP is equal to one for children in village receiving both cash and public works. All regressions include controls for the determinants of transfer size (at least one child <5 years of age; at least one child aged 5–17 years; number of children attending primary school; number of children attending secondary school) and fixed effects for gender, age and the stratification variable (district). All controls are measured at baseline. Regressions are estimated using OLS with robust standard errors clustered at the village level. p-values in brackets. *p <0.1, **p <0.05, ***p <0.01. Source: Tanzania PSSN REPOA Evaluation.

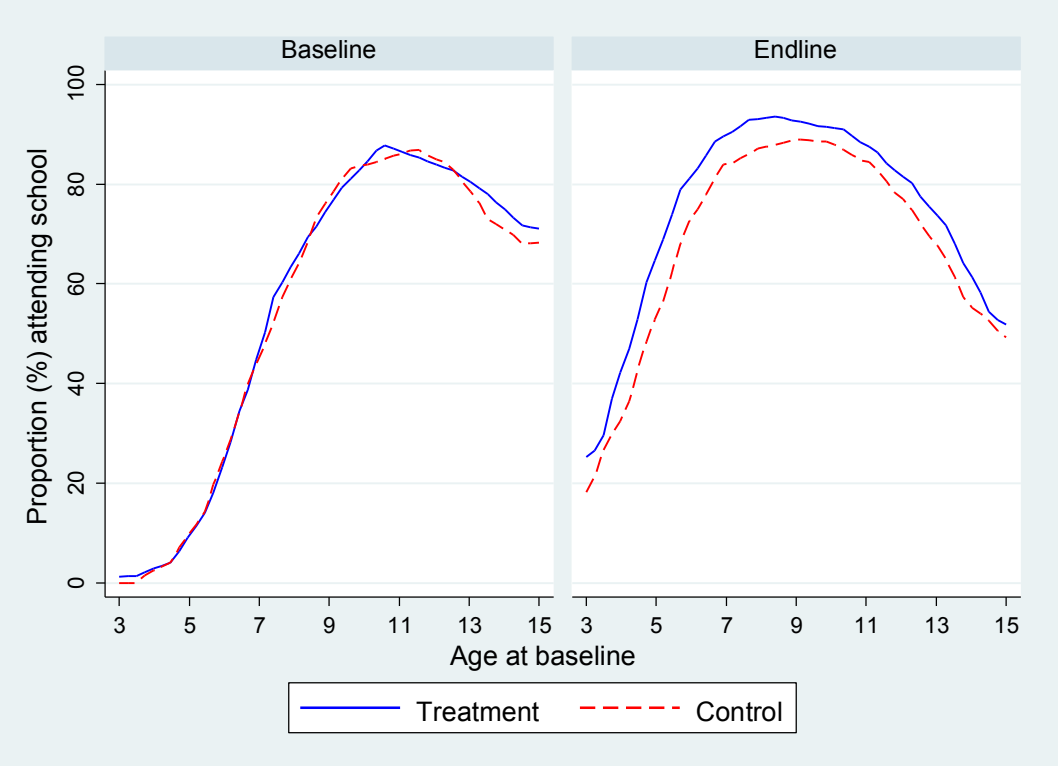
Table 5. PSSN impact on education

Dependent variables	Difference-in-differences		Cross-section			
	Currently attending school (1)	Can read and write (2)	Highest grade of education completed (3)	Attended school regularly, past week (4)	Spent at least one hour studying, past week (5)	Dropped out of school between baseline and endline (6)
Panel A. Overall impact						
PSSN	0.052**	0.048**	0.174**	-0.003	0.049**	-0.017
	[0.028]	[0.038]	[0.044]	[0.926]	[0.033]	[0.416]
Panel B. Two treatment arms						
CT	0.057*	0.034	0.162*	0.000	0.056**	0.008
	[0.067]	[0.251]	[0.093]	[0.996]	[0.037]	[0.749]
CT&PWP	0.044*	0.068***	0.192*	-0.007	0.040	-0.050**
	[0.100]	[0.006]	[0.076]	[0.831]	[0.132]	[0.019]
CT=CT&PWP, p-value	0.700	0.245	0.779	0.848	0.551	0.008
Observations	7,032	7,032	3,516	1,900	3,516	1,876
Unique observations	3,516	3,516				
Control average	0.676	0.515	2.968	0.834	0.244	0.134

Note: The sample includes children aged 3–15 years at baseline (5–17 years at endline). In columns 1 and 2, results are obtained by using both the baseline and the endline data in a difference-in-differences model, including individual fixed effects as specified in equation 3. In columns 3 to 6, results are obtained by using the endline data and estimating regression specifications (1) and (2) in panels A and B respectively. In panel A, PSSN is an indicator equal to one for children in treatment villages, either cash only or cash and public works. In panel B, CT is equal to one for children in villages receiving cash only, while CT&PWP is equal to one for children in village receiving both cash and public works. Regressions in columns 3 to 6 include controls for the determinants of transfer size (at least one child <5 years of age; at least one child aged 5–17 years; number of children attending primary school; number of children attending secondary school) and fixed effects for gender, age and the stratification variable (district). All controls are measured at baseline. Regressions are estimated using OLS with robust standard errors clustered at the village level. p-values in brackets. *p <0.1, **p <0.05, ***p <0.01. Source: Tanzania PSSN REPOA Evaluation.

APPENDIX A. ADDITIONAL DESCRIPTIVE STATISTICS AND IMPACT ESTIMATES

Figure A1. Child school attendance by treatment status and interview wave



Note: The sample includes children aged 3–15 years at baseline (5–17 years at endline). The blue line represents the pooled treatment groups: cash transfers only and cash transfers plus public works. The dashed red line represents the control group receiving no intervention. Source: Tanzania PSSN REPOA Evaluation.

Table A1. Baseline balance and differential attrition, additional household variables

	Full baseline sample		Attritor	Panel
	Control mean (S.D.) (1)	Difference T-C [p-value] (2)	Difference T-C [p-value] (3)	Difference T-C [p-value] (4)
Household size	6.450	-0.199	0.552*	-0.278*
	(2.411)	[0.159]	[0.093]	[0.064]
Household head is female	0.308	-0.041	0.014	-0.048
	(0.462)	[0.171]	[0.842]	[0.151]
Water source inside dwelling	0.051	0.019	0.005	0.021
	(0.220)	[0.188]	[0.871]	[0.169]
Dwelling has access to electricity	0.046	-0.026	-0.037	-0.025
	(0.210)	[0.345]	[0.238]	[0.416]
Main lighting source: Lanterns/candles	0.661	0.052	0.038	0.052
	(0.474)	[0.130]	[0.604]	[0.168]
Main lighting source: Other	0.293	-0.026	-0.001	-0.027
	(0.456)	[0.209]	[0.987]	[0.236]
Household has toilet (improved/unimproved)	0.702	-0.040	-0.040	-0.042
	(0.458)	[0.169]	[0.565]	[0.192]
Roof type: Tile/wood/metal/plastic	0.455	0.011	-0.004	0.010
	(0.498)	[0.763]	[0.962]	[0.785]
Floor type: Concrete/tile/wood	0.138	0.007	0.061	0.002
	(0.345)	[0.741]	[0.248]	[0.917]
Main water source: Piped	0.262	0.008	-0.062	0.016
	(0.440)	[0.832]	[0.486]	[0.677]
Main water source: Protected well/spring	0.262	0.049	0.088	0.046
	(0.440)	[0.162]	[0.269]	[0.201]
Main water source: Unprotected well	0.475	-0.057	-0.026	-0.062
	(0.500)	[0.193]	[0.722]	[0.178]
Highest education for adults: None	0.177	-0.003	0.034	-0.009
	(0.382)	[0.889]	[0.635]	[0.685]
Highest education for adults: Some primary	0.109	-0.002	0.009	-0.002
	(0.312)	[0.907]	[0.871]	[0.886]
Highest education for adults: Primary	0.509	-0.007	-0.170**	0.011
	(0.500)	[0.781]	[0.035]	[0.671]
Highest education for adults: At least some secondary	0.204	0.012	0.126**	-0.000
	(0.404)	[0.559]	[0.030]	[0.991]
N (households)	587	1,460	153	1,307

Note: The sample includes children aged 3–15 years at baseline (5–17 years at endline). Column 1 reports averages and standard deviations (in parentheses) for the control group. Columns 2 to 4 examine baseline balance between treatment and control villages. They show the result of regressing each baseline characteristic on the treatment indicator and on the stratification variable (district). Regressions are estimated using OLS with robust standard errors clustered at the village level. p-values in brackets. *p <0.1, **p <0.05, ***p <0.01. Source: Tanzania PSSN REPOA Evaluation.

Table A2. Baseline balance and differential attrition, by treatment arms

	Cash only vs control			Cash and public works vs control		
	Full baseline sample	Attritor	Panel	Full baseline sample	Attritor	Panel
	Difference T-C [p-value] (1)	Difference T-C [p-value] (2)	Difference T-C [p-value] (3)	Difference T-C [p-value] (4)	Difference T-C [p-value] (5)	Difference T-C [p-value] (6)
Panel A. Household level (determinants of transfer size)						
Any child <5 years of age	-0.002	-0.012	0.001	-0.022	0.028	-0.029
	[0.958]	[0.878]	[0.966]	[0.550]	[0.801]	[0.437]
Any child aged 5–17 years	0.002	0.028	-0.001	-0.004	0.087*	-0.012
	[0.893]	[0.549]	[0.960]	[0.752]	[0.088]	[0.335]
Number of children attending primary school	-0.131	0.108	-0.139	-0.063	0.105	-0.097
	[0.155]	[0.544]	[0.164]	[0.571]	[0.699]	[0.410]
Number of children attending secondary school	0.031	0.454***	-0.021	0.043	0.108	0.030
	[0.611]	[0.009]	[0.751]	[0.551]	[0.222]	[0.689]
Panel B. Household level (productive activities)						
Owned/operated any land last growing season	0.027	0.028	0.030	0.073	0.206**	0.059
	[0.479]	[0.684]	[0.468]	[0.114]	[0.027]	[0.213]
Owns any livestock	-0.021	0.083	-0.036	-0.044	0.109	-0.058
	[0.587]	[0.257]	[0.397]	[0.346]	[0.335]	[0.223]
Owned/operated any non-farm business past 12 months	-0.015	0.081	-0.025	0.048	0.187*	0.034
	[0.602]	[0.227]	[0.422]	[0.164]	[0.065]	[0.342]
N (households)	1,094	125	969	953	92	861
Panel C. Child level						
Age	0.025	0.227	-0.015	0.142	0.192	0.155
	[0.862]	[0.532]	[0.918]	[0.258]	[0.656]	[0.265]
Female	0.017	-0.062	0.034**	0.033	0.108**	0.021
	[0.239]	[0.155]	[0.035]	[0.109]	[0.023]	[0.335]
Literacy	0.013	0.025	0.011	0.003	-0.005	0.007
	[0.584]	[0.531]	[0.669]	[0.914]	[0.905]	[0.807]
Attends school	0.002	0.014	0.004	0.020	0.013	0.020
	[0.927]	[0.763]	[0.865]	[0.520]	[0.824]	[0.545]
Panel D. Child attrition						
Attritted	0.033*			-0.017		
	[0.097]			[0.386]		
N (children)	3,213	575	2,638	2,813	454	2,359

Note: The sample includes children aged 3–15 years at baseline (5–17 years at endline). The table examines baseline balance between treatment and control villages, separately for each treatment arm. Columns 1 to 3 (4 to 6) show the result of regressing each baseline characteristic on the indicator for receiving cash only (cash and public works) and on the stratification variable (district). Regressions are estimated using OLS with robust standard errors clustered at the village level. p-values in brackets. *p <0.1, **p <0.05, ***p <0.01. Source: Tanzania PSSN REPOA Evaluation.

Table A3. Differences between attritors and panel

	Panel mean (S.D.) (1)	Difference attritors-panel [p-value] (2)
Panel A. Household level (determinants of transfer size)		
Any child <5 years of age	0.589	-0.058
	(0.492)	[0.131]
Any child aged 5–17 years	0.965	-0.045**
	(0.184)	[0.045]
Number of children attending primary school	1.533	-0.621***
	(1.237)	[0.000]
Number of children attending secondary school	0.487	-0.096
	(0.946)	[0.282]
Panel B. Household level (productive activities)		
Owned/operated any land last growing season	0.753	-0.063*
	(0.432)	[0.066]
Owns any livestock	0.541	0.033
	(0.499)	[0.406]
Owned/operated any non-farm business past 12 months	0.269	0.004
	(0.443)	[0.915]
N (households)	1,284	1,427
Panel C. Child level		
Age	8.785	0.060
	(3.565)	[0.759]
Female	0.491	0.045**
	(0.500)	[0.035]
Literacy	0.377	-0.003
	(0.485)	[0.891]
Attends school	0.534	-0.125***
	(0.499)	[0.000]
N (children)	3,516	4,246

Note: The sample includes children aged 3–15 years at baseline (5–17 years at endline). Column 1 reports averages and standard deviations (in parentheses) for the panel sample. Column 2 shows the result of regressing each baseline characteristic on the attritor indicator and on the stratification variable (district). Regressions are estimated using OLS with robust standard errors clustered at the village level. p-values in brackets. *p <0.1, **p <0.05, ***p <0.01. Source: Tanzania PSSN REPOA Evaluation.

Table A4. PSSN take-up (endline treatment group, panel households)

	PSSN mean (1)	Control mean (2)
Aware of the PSSN	0.811	0.233
Ever received payments from the PSSN	0.745	0.027
N (households)	784	523
Last time the household received a PSSN payment		
Same month of the interview	0.141	0.231
1 month before the interview	0.631	0.769
2 months before the interview	0.191	0.000
3 or more months before the interview	0.037	0.000
Amount received (000s TZS)	38,114	43,385
N (households)	575	13
Participated in public works programme	0.259	0.031
N (adults)	743	1,132

Note: The sample includes households with relevant sampled children. For participation in public works, PSSN mean and PSSN number of adults refer to villages receiving both cash transfers and public works. Source: Tanzania PSSN REPOA Evaluation.

Table A5. PSSN impact on household productive activities

Dependent variables	Owns any livestock (1)	Owns cattle (2)	Owns goats/ sheep/ pigs (3)	Owns chickens (4)	Owns ducks (5)	Owned/ operated any land last growing season (6)	Owned/ operated any non-farm business past 12 months (7)
Panel A. Overall impact							
PSSN	0.175***	0.022	0.138***	0.134***	0.030**	0.044	-0.023
	[0.000]	[0.163]	[0.000]	[0.000]	[0.014]	[0.194]	[0.324]
Panel B. Two treatment arms							
CT	0.179***	0.023	0.143***	0.132***	0.030**	0.039	-0.025
	[0.000]	[0.177]	[0.000]	[0.000]	[0.015]	[0.317]	[0.351]
CT&PWP	0.170***	0.019	0.130***	0.137***	0.031*	0.050	-0.020
	[0.000]	[0.363]	[0.000]	[0.001]	[0.085]	[0.275]	[0.461]
CT=CT&PWP, p-value	0.807	0.857	0.676	0.895	0.994	0.823	0.871
Observations	1,307	1,307	1,307	1,307	1,307	1,307	1,307
Control average	0.428	0.059	0.101	0.369	0.027	0.782	0.159

Note: The sample includes households with relevant sample children. Estimates in panels A and B are obtained by using the endline data and estimating regression specifications (1) and (2) respectively. In panel A, PSSN is an indicator equal to one for children in treatment villages, either cash only or cash and public works. In panel B, CT is equal to one for children in villages receiving cash only, while CT&PWP is equal to one for children in village receiving both cash and public works. All regressions include controls for the determinants of transfer size (at least one child <5 years of age; at least one child aged 5–17 years; number of children attending primary school; number of children attending secondary school) and fixed effects for the stratification variable (district). All controls are measured at baseline. Regressions are estimated using OLS with robust standard errors clustered at the village level.p-values in brackets. *p <0.1, **p <0.05, ***p <0.01. Source: Tanzania PSSN REPOA Evaluation.

Table A6. PSSN impact on adult participation in economic activities, past 12 months

Dependent variables	Any economic activities (1)	Farm work for the household (excluding livestock) (2)	Livestock herding for the household (3)	Household non-farm business (4)	Paid work outside the household (5)
Panel A. Overall impact					
PSSN	0.025	0.045	0.119***	-0.010	-0.018
	[0.253]	[0.157]	[0.000]	[0.501]	[0.337]
Panel B. Two treatment arms					
CT	0.021	0.041	0.142***	-0.004	-0.014
	[0.463]	[0.279]	[0.000]	[0.842]	[0.556]
CT&PWP	0.031	0.049	0.090**	-0.018	-0.024
	[0.241]	[0.212]	[0.013]	[0.261]	[0.250]
CT=CT&PWP, p-value	0.761	0.869	0.160	0.414	0.657
Observations	2,777	2,777	2,777	2,777	2,777
Control average	0.787	0.703	0.358	0.125	0.248

Note: The sample includes individuals aged 16–62 years at baseline (18–64 years at endline). Estimates in panels A and B are obtained by using the endline data and estimating regression specifications (1) and (2) respectively. In panel A, PSSN is an indicator equal to one for children in treatment villages, either cash only or cash and public works. In panel B, CT is equal to one for children in villages receiving cash only, while CT&PWP is equal to one for children in village receiving both cash and public works. All regressions include controls for the determinants of transfer size (at least one child <5 years of age; at least one child aged 5–17 years; number of children attending primary school; number of children attending secondary school) and fixed effects for gender, age and the stratification variable (district). All controls are measured at baseline. Regressions are estimated using OLS with robust standard errors clustered at the village level. p-values in brackets. *p <0.1, **p <0.05, ***p <0.01. Source: Tanzania PSSN REPOA Evaluation.

Table A7. PSSN impact on work-related hazards (by type of hazard)

Dependent variables	Carrying heavy loads (1)	Working with dangerous tools (2)	Exposure to dusts, fumes or gases (3)	Exposure to extreme cold, heat or humidity (4)	Exposure to loud noise or vibration (5)	Work at night (6)	Exposure to bullying, intimidation or violence (7)	Work in bars, hotels or places of entertainment (8)
Panel A. Overall impact								
PSSN	-0.003	0.002	0.007	0.014	0.002	0.003*	0.001	0.001*
	[0.826]	[0.886]	[0.524]	[0.119]	[0.465]	[0.091]	[0.330]	[0.076]
Panel B. Two treatment arms								
CCT	0.003	0.008	0.007	0.011	0.002	0.005**	0.002	0.001
	[0.843]	[0.576]	[0.576]	[0.312]	[0.418]	[0.035]	[0.154]	[0.414]
CCT&PWP	-0.012	-0.007	0.006	0.018	0.001	0.002	-0.000	0.002
	[0.496]	[0.554]	[0.641]	[0.121]	[0.691]	[0.527]	[0.818]	[0.142]
CT=CCT&PWP, p-value	0.388	0.300	0.911	0.589	0.667	0.246	0.211	0.391
Observations	3,516	3,516	3,516	3,516	3,516	3,516	3,516	3,516
Control average	0.098	0.076	0.067	0.036	0.003	0.001	0.001	0.000

Note: The sample includes children aged 3–15 years at baseline (5–17 years at endline). Estimates in panels A and B are obtained by using the endline data and estimating regression specifications (1) and (2) respectively. In panel A, PSSN is an indicator equal to one for children in treatment villages, either cash only or cash and public works. In panel B, CT is equal to one for children in villages receiving cash only, while CT&PWP is equal to one for children in village receiving both cash and public works. All regressions include controls for the determinants of transfer size (at least one child <5 years of age; at least one child aged 5–17 years; number of children attending primary school; number of children attending secondary school) and fixed effects for gender, age and the stratification variable (district). All controls are measured at baseline. . Regressions are estimated using OLS with robust standard errors clustered at the village level. p-values in brackets. *p <0.1, **p <0.05, ***p <0.01. Source: Tanzania PSSN REPOA Evaluation.

Table A8. PSSN impact on child participation in economic activities, past 12 months, inverse probability weights

Dependent variables	Any economic activities (1)	Farm work for the household (excluding livestock) (2)	Livestock herding for the household (3)	Household non-farm business (4)	Paid work outside the household (5)
Panel A. Overall impact					
PSSN	-0.005	-0.002	0.040**	-0.006	-0.020**
	[0.783]	[0.921]	[0.013]	[0.123]	[0.019]
Panel B. Two treatment arms					
CT	-0.007	-0.002	0.032*	-0.006	-0.019**
	[0.746]	[0.931]	[0.075]	[0.110]	[0.038]
CT&PWP	-0.003	-0.002	0.051**	-0.005	-0.022**
	[0.907]	[0.937]	[0.012]	[0.266]	[0.029]
CT=CT&PWP, p-value	0.859	1.000	0.368	0.747	0.780
Observations	3,516	3,516	3,516	3,516	3,516
Control average	0.361	0.329	0.156	0.011	0.047

Note: The sample includes children aged 3–15 years at baseline (5–17 years at endline). Estimates in panels A and B are obtained by using the endline data and estimating regression specifications (1) and (2) respectively. In panel A, PSSN is an indicator equal to one for children in treatment villages, either cash only or cash and public works. In panel B, CT is equal to one for children in villages receiving cash only, while CT&PWP is equal to one for children in village receiving both cash and public works. All regressions include controls for the determinants of transfer size (at least one child <5 years of age; at least one child aged 5–17 years; number of children attending primary school; number of children attending secondary school) and fixed effects for gender, age and the stratification variable (district). All controls are measured at baseline. Regressions are estimated using OLS with robust standard errors clustered at the village level and with inverse probability weights. p-values in brackets*p <0.1, **p <0.05, ***p <0.01. Source: Tanzania PSSN REPOA Evaluation.

Table A9. PSSN impact on education, inverse probability weights

Dependent variables	Difference-in-differences		Cross-section			
	Currently attending school (1)	Can read and write (2)	Highest grade of education completed (3)	Attended school regularly, past week (4)	Spent at least one hour studying, past week (5)	Dropped out of school between baseline and endline (6)
Panel A. Overall impact						
PSSN	0.050**	0.045**	0.173**	-0.001	0.047**	-0.015
	[0.028]	[0.047]	[0.049]	[0.959]	[0.032]	[0.483]
Panel B. Two treatment arms						
CCT	0.057*	0.031	0.159	0.003	0.054**	0.009
	[0.063]	[0.282]	[0.109]	[0.927]	[0.036]	[0.710]
CCT&PWP	0.042	0.063***	0.192*	-0.008	0.038	-0.047**
	[0.105]	[0.007]	[0.083]	[0.799]	[0.135]	[0.033]
CT=CCT&PWP, p-value	0.678	0.253	0.765	0.756	0.542	0.014
Observations	7,032	7,032	3,516	1,900	3,516	1,876
Unique observations	3,516	3,516				
Control average	0.676	0.515	2.968	0.834	0.244	0.134

Note: The sample includes children aged 3–15 years at baseline (5–17 years at endline). In columns 1 and 2, results are obtained by using both the baseline and the endline data in a difference-in-differences model, including individual fixed effects as specified in equation 3. In columns 3 to 6, results are obtained by using the endline data and estimating regression specifications (1) and (2) in panels A and B respectively. In panel A, PSSN is an indicator equal to one for children in treatment villages, either cash only or cash and public works. In panel B, CT is equal to one for children in villages receiving cash only, while CT&PWP is equal to one for children in village receiving both cash and public works. Regressions in columns 3 to 6 include controls for the determinants of transfer size (at least one child <5 years of age; at least one child aged 5–17 years; number of children attending primary school; number of children attending secondary school) and fixed effects for gender, age and the stratification variable (district). All controls are measured at baseline. Regressions are estimated using OLS with robust standard errors clustered at the village level and with inverse probability weights. p-values in brackets. *p <0.1, **p <0.05, ***p <0.01. Source: Tanzania PSSN REPOA Evaluation.

Table A10. PSSN impact on child participation in economic activities, past week

Dependent variables	Any economic activities (1)	Farm work for the household (excluding livestock) (2)	Livestock herding for the household (3)	Household non-farm business (4)	Paid work outside the household (5)
Panel A. Overall impact					
PSSN	0.032	0.025	0.040**	0.014	0.011
	[0.180]	[0.304]	[0.040]	[0.371]	[0.500]
Panel B. Two treatment arms					
CT	0.042	0.033	0.051**	0.026	0.029
	[0.109]	[0.227]	[0.024]	[0.146]	[0.117]
CT&PWP	0.017	0.013	0.026	-0.002	-0.013
	[0.567]	[0.658]	[0.287]	[0.908]	[0.500]
CT=CT&PWP, p-value	0.422	0.536	0.341	0.152	0.038
Observations	3,516	3,516	3,516	3,516	3,516
Control average	0.283	0.248	0.099	0.029	0.042

Note: The sample includes children aged 3–15 years at baseline (5–17 years at endline). Estimates in panels A and B are obtained by using the endline data and estimating regression specifications (1) and (2) respectively. In panel A, PSSN is an indicator equal to one for children in treatment villages, either cash only or cash and public works. In panel B, CT is equal to one for children in villages receiving cash only, while CT&PWP is equal to one for children in village receiving both cash and public works. All regressions include controls for the determinants of transfer size (at least one child <5 years of age; at least one child aged 5–17 years; number of children attending primary school; number of children attending secondary school) and fixed effects for gender, age and the stratification variable (district). All controls are measured at baseline. Regressions are estimated using OLS with robust standard errors clustered at the village level. p-values in brackets. *p <0.1, **p <0.05, ***p <0.01. Source: Tanzania PSSN REPOA Evaluation.

Table A11. PSSN impact on child participation in household chores, past day

Dependent variables	Any chores (1)	Collecting water (2)	Collecting firewood (3)	Collecting nuts (4)	Taking care of children, cooking or cleaning (5)	Taking care of elderly or sick household members (6)
Panel A. Overall impact						
PSSN	0.001	0.004	0.026	0.025	0.012	0.020
	[0.966]	[0.877]	[0.274]	[0.173]	[0.598]	[0.390]
Panel B. Two treatment arms						
CT	0.011	0.006	0.021	0.035	0.027	0.033
	[0.646]	[0.820]	[0.435]	[0.107]	[0.294]	[0.207]
CT&PWP	-0.013	0.001	0.033	0.012	-0.009	0.002
	[0.670]	[0.983]	[0.295]	[0.603]	[0.746]	[0.948]
CT=CT&PWP, p-value	0.434	0.882	0.716	0.362	0.186	0.269
Observations	3,516	3,516	3,516	3,516	3,516	3,516
Control average	0.534	0.453	0.275	0.078	0.270	0.109

Note: The sample includes children aged 3–15 years at baseline (5–17 years at endline). Estimates in panels A and B are obtained by using the endline data and estimating regression specifications (1) and (2) respectively. . In panel A, PSSN is an indicator equal to one for children in treatment villages, either cash only or cash and public works. In panel B, CT is equal to one for children in villages receiving cash only, while CT&PWP is equal to one for children in village receiving both cash and public works. All regressions include controls for the determinants of transfer size (at least one child <5 years of age; at least one child aged 5–17 years; number of children attending primary school; number of children attending secondary school) and fixed effects for gender, age and the stratification variable (district). All controls are measured at baseline. Regressions are estimated using OLS with robust standard errors clustered at the village level. p-values in brackets. *p <0.1, **p <0.05, ***p <0.01. Source: Tanzania PSSN REPOA Evaluation.

APPENDIX B. HETEROGENEITY

Table B1. PSSN impact on child participation in economic activities, past 12 months, by gender

Dependent variables	Any economic activities (1)	Farm work for the household (excluding livestock) (2)	Livestock herding for the household (3)	Household non-farm business (4)	Paid work outside the household (5)
Females					
PSSN	0.004	0.005	0.035*	-0.002	-0.008
	[0.856]	[0.831]	[0.053]	[0.749]	[0.456]
Males					
PSSN	-0.016	-0.008	0.040**	-0.007	-0.031***
	[0.415]	[0.661]	[0.045]	[0.131]	[0.002]
Observations, females	1,728	1,728	1,728	1,728	1,728
Observations, males	1,788	1,788	1,788	1,788	1,788
Control average, females	0.351	0.325	0.144	0.011	0.037
Control average, males	0.371	0.332	0.167	0.012	0.056
Females = males, p-value	0.385	0.594	0.827	0.420	0.060

Note: The sample includes children aged 3–15 years at baseline (5–17 years at endline). Estimates are obtained by using the endline data and estimating regression specification (1) on subsamples of females and males. PSSN is an indicator equal to one for children in treatment villages, either cash only or cash and public works. All regressions include controls for the determinants of transfer size (at least one child <5 years of age; at least one child aged 5–17 years; number of children attending primary school; number of children attending secondary school) and fixed effects for age and the stratification variable (district). All controls are measured at baseline. Regressions are estimated using OLS with robust standard errors clustered at the village level. p-values in brackets. To test whether treatment effects are significantly different by gender, we estimated specification (1), now interacting all regressors by gender. The last row of this table reports the p-values on the interaction terms treatment × female from these fully interacted regressions. *p <0.1, **p <0.05, ***p <0.01. Source: Tanzania PSSN REPOA Evaluation.

Table B2. PSSN impact on child participation in economic activities, past 12 months, by age

Dependent variables	Any economic activities (1)	Farm work for the household (excluding livestock) (2)	Livestock herding for the household (3)	Household non-farm business (4)	Paid work outside the household (5)
Aged <12					
PSSN	0.015	0.019	0.029**	-0.000	0.002
	[0.407]	[0.252]	[0.039]	[0.919]	[0.754]
Aged 12–17					
PSSN	-0.025	-0.017	0.057**	-0.010	-0.042***
	[0.364]	[0.508]	[0.044]	[0.177]	[0.008]
Observations, aged <12	1,982	1,982	1,982	1,982	1,982
Observations, aged 12–17	1,534	1,534	1,534	1,534	1,534
Control average, aged <12	0.200	0.170	0.086	0.001	0.011
Control average, aged 12–17	0.566	0.529	0.245	0.024	0.092
Aged <12 = aged 12–17, p-value	0.154	0.167	0.330	0.201	0.006

Note: The sample includes children aged 3–15 years at baseline (5–17 years at endline). Estimates are obtained by using the endline data and estimating regression specification (1) on subsamples of younger and older children. PSSN is an indicator equal to one for children in treatment villages, either cash only or cash and public works. All regressions include controls for the determinants of transfer size (at least one child <5 years of age; at least one child aged 5–17 years; number of children attending primary school; number of children attending secondary school) and fixed effects for gender, age and the stratification variable (district). All controls are measured at baseline. Regressions are estimated using OLS with robust standard errors clustered at the village level. p-values in brackets. To test whether treatment effects are significantly different by age group, we estimated specification (1), now interacting all regressors by an indicator equal to one if aged <12 years. The last row of this table reports the p-values on the interaction terms treatment × (aged <12) from these fully interacted regressions. *p <0.1, **p <0.05, ***p <0.01. Source: Tanzania PSSN REPOA Evaluation.

Table B3. PSSN impact on child participation in economic activities, past 12 months, by baseline school attendance

Dependent variables	Any economic activities (1)	Farm work for the household (excluding livestock) (2)	Livestock herding for the household (3)	Household non-farm business (4)	Paid work outside the household (5)
In school at baseline					
PSSN	-0.027	-0.024	0.041*	-0.006	-0.029**
	[0.287]	[0.319]	[0.069]	[0.329]	[0.012]
Out of school at baseline					
PSSN	0.026	0.032*	0.038*	-0.004	-0.007
	[0.168]	[0.072]	[0.059]	[0.141]	[0.405]
Observations, in school	1,876	1,876	1,876	1,876	1,876
Observations, out of school	1,640	1,640	1,640	1,640	1,640
Control average, in school	0.468	0.436	0.189	0.017	0.055
Control average, out of school	0.241	0.208	0.119	0.006	0.037
In school = out of school, p-value	0.068	0.043	0.918	0.747	0.071

Note: The sample includes children aged 3–15 years at baseline (5–17 years at endline). Estimates are obtained by using the endline data and estimating regression specification (1) on subsamples of in-school and out-of-school children. PSSN is an indicator equal to one for children in treatment villages, either cash only or cash and public works. All regressions include controls for the determinants of transfer size (at least one child <5 years of age; at least one child aged 5–17 years; number of children attending primary school; number of children attending secondary school) and fixed effects for gender, age and the stratification variable (district). All controls are measured at baseline. Regressions are estimated using OLS with robust standard errors clustered at the village level. p-values in brackets. To test whether treatment effects are significantly different by school attendance status, we estimated specification (1), now interacting all regressors by an indicator for school attendance at baseline. The last row of this table reports the p-values on the interaction terms treatment × (in school) from these fully interacted regressions. *p <0.1, **p <0.05, ***p <0.01. Source: Tanzania PSSN REPOA Evaluation.

Table B4. PSSN impact on education, by gender

Dependent variables	Difference-in-differences		Cross-section			
	Currently attending school (1)	Can read and write (2)	Highest grade of education completed (3)	Attended school regularly, past week (4)	Spent at least one hour studying, past week (5)	Dropped out of school between baseline and endline (6)
Females						
PSSN	0.031	0.050**	0.158*	-0.003	0.032	-0.006
	[0.315]	[0.040]	[0.092]	[0.931]	[0.207]	[0.816]
Males						
PSSN	0.072**	0.048	0.183	-0.007	0.065**	-0.028
	[0.016]	[0.133]	[0.143]	[0.848]	[0.020]	[0.312]
Observations, females	3,456	3,456	1,728	963	1,728	963
Unique observations, females	1,728	1,728				
Observations, males	3,576	3,576	1,788	937	1,788	913
Unique observations, males	1,788	1,788				
Control average, females	0.710	0.530	3.167	0.845	0.270	0.128
Control average, males	0.645	0.500	0.500	0.500	0.500	0.500
Females = males, p-value	0.267	0.937	0.857	0.895	0.237	0.551

Note: The sample includes children aged 3–15 years at baseline (5–17 years at endline). Separate regressions are estimated for subsamples of females and males. PSSN is an indicator equal to one for children in treatment villages, either cash only or cash and public works. Estimates in columns 1 and 2 are obtained by using baseline and endline data in a difference-in-differences model, as specified in equation 3. Estimates in columns 3 to 6 are obtained by using the endline data and estimating regression specification (1), including controls for the determinants of transfer size (at least one child <5 years of age; at least one child aged 5–17 years; number of children attending primary school; number of children attending secondary school) and fixed effects for age and the stratification variable (district). All controls are measured at baseline. Regressions are estimated using OLS with robust standard errors clustered at the village level. p-values in brackets. To test whether treatment effects are significantly different by gender, we estimated the above described models, now interacting all regressors by gender. The last row of this table reports the p-values on the interaction terms treatment × female from these fully interacted regressions. *p <0.1, **p <0.05, ***p <0.01. Source: Tanzania PSSN REPOA Evaluation.

Table B5. PSSN impact on education, by age

Dependent variables	Difference-in-differences		Cross-section			
	Currently attending school (1)	Can read and write (2)	Highest grade of education completed (3)	Attended school regularly, past week (4)	Spent at least one hour studying, past week (5)	Dropped out of school between baseline and endline (6)
Aged <12						
PSSN	0.067**	0.081***	0.190***	0.008	0.065***	-0.023
	[0.012]	[0.002]	[0.004]	[0.816]	[0.002]	[0.252]
Aged 12–17						
PSSN	0.023	0.005	0.128	-0.014	0.022	-0.014
	[0.362]	[0.889]	[0.382]	[0.647]	[0.520]	[0.617]
Observations, aged <12	3,964	3,964	1,982	995	1,982	636
Unique observations, aged <12	1,982	1,982				
Observations, aged 12–17	3,068	3,068	1,534	905	1,534	1,240
Unique observations, aged 12–17	1,534	1,534				
Control average, aged <12	0.641	0.290	1.328	0.821	0.135	0.042
Control average, aged 12–17	0.720	0.798	5.041	0.848	0.382	0.180
Aged <12 = aged 12–17, p-value	0.170	0.044	0.642	0.497	0.165	0.762

Note: The sample includes children aged 3–15 years at baseline (5–17 years at endline). Separate regressions are estimated for subsamples of younger and older children. PSSN is an indicator equal to one for children in treatment villages, either cash only or cash and public works. Estimates in columns 1 and 2 are obtained by using baseline and endline data in a difference-in-differences model, as specified in equation 3. Estimates in columns 3 to 6 are obtained by using the endline data and estimating regression specification (1), including controls for the determinants of transfer size (at least one child <5 years of age; at least one child aged 5–17 years; number of children attending primary school; number of children attending secondary school) and fixed effects for gender, age and the stratification variable (district). All controls are measured at baseline. Regressions are estimated using OLS with robust standard errors clustered at the village level. p-values in brackets. To test whether treatment effects are significantly different by age group, we estimated the above described models, now interacting all regressors by an indicator equal to one if aged <12 years. The last row of this table reports the p-values on the interaction terms treatment × (aged <12) from these fully interacted regressions. *p <0.1, **p <0.05, ***p <0.01. Source: Tanzania PSSN REPOA Evaluation.

Table B6. PSSN impact on education, by baseline school attendance

Dependent variables	Difference-in-differences		Cross-section			
	Currently attending school (1)	Can read and write (2)	Highest grade of education completed (3)	Attended school regularly, past week (4)	Spent at least one hour studying, past week (5)	Dropped out of school between baseline and endline (6)
In school at baseline						
PSSN	0.019	0.033	0.058	0.005	0.017	-0.017
	[0.348]	[0.369]	[0.534]	[0.874]	[0.623]	[0.416]
Out of school at baseline						
PSSN	0.098***	0.066***	0.221**	-0.023	0.067***	-
	[0.001]	[0.008]	[0.016]	[0.559]	[0.001]	
Observations, in school	3,752	3,752	1,876	1,298	1,876	1,876
Unique observations, in school	1,876	1,876				
Observations, out of school	3,280	3,280	1,640	602	1,640	7,032
Unique observations, out of school	1,640	1,640				
Control average, in school	0.866	0.790	4.584	0.832	0.388	0.134
Control average, out of school	0.462	0.205	0.205	0.205	0.205	
In school = out of school, p-value	0.017	0.468	0.119	0.466	0.150	0.416

Note: The sample includes children aged 3–15 years at baseline (5–17 years at endline). Separate regressions are estimated for subsamples of in-school and out-of-school children. PSSN is an indicator equal to one for children in treatment villages, either cash only or cash and public works. Estimates in columns 1 and 2 are obtained by using baseline and endline data in a difference-in-differences model, as specified in equation 3. Estimates in columns 3 to 6 are obtained by using the endline data and estimating regression specification (1), including controls for the determinants of transfer size (at least one child <5 years of age; at least one child aged 5–17 years; number of children attending primary school; number of children attending secondary school) and fixed effects for gender, age and the stratification variable (district). All controls are measured at baseline. Regressions are estimated using OLS with robust standard errors clustered at the village level. p-values in brackets. To test whether treatment effects are significantly different by school attendance status, we estimated the above described models, now interacting all regressors by an indicator for school attendance at baseline. The last row of this table reports the p-values on the interaction terms treatment × (in school) from these fully interacted regressions. *p <0.1, **p <0.05, ***p <0.01. Source: Tanzania PSSN REPOA Evaluation.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