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How does social protection affect household resilience? Results from the Malawi cash transfer program

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ABSTRACT

The concept of resilienceis increasingly gaining traction in the international development literature as a way to profile, rank and predict the response capacity of households to shocks and stressors to livelihoods, particularly those that threaten to food security.The objective is to provide a more rigorous framework and a single reference indicator for the design and implementation of sustainable long-term development initiatives that minimize the need for perennial mobilization for humanitarian and emergency assistance. While there are still debates about the construct and measurement, there is general consensus that a household's resilience encompasses aspects of household income generating capacity and diversification, ownership of agricultural and non-agricultural assets, access to social safety nets and basic services, as well as household stability and adaptive capacity to shocks.

By providing a steady and predictable source of income, particularly one that is unconditional, the SCTP is hypothesized to impact positively on the productive capacity of households and asset ownership without negatively affecting pre-existing social safety nets and access to basic services. The net effect of this should be improved food security and more resilient households able to respond to shocks and stressor with more positive coping strategies that are not detrimental to long term development prospects. This report accordingly examined the impacts of the SCTP on the dimensions of resilience and overall resilience score. We further examine the validity of the resilience index in predicting future food security.We find significant positive impacts of the SCTP on agricultural and non-agricultural asset ownership, crop production, livestock ownership and household debt situation. We find no 'crowding out' effects of the SCTP on access to private and public social safety nets, and no signs of reduced labour hours although there is some reduction in the hours spent on casual labour. We also find significant positive impacts of about MWK 13,000 on overall per capita consumption as well as a MWK 7900 on per capita food consumption. In addition, we find significant positive effect on household food security, meal frequency, meal quality and dietary diversity. Our estimate of household resilience, using the FAO RIMA II model, also shows significant improvement in the household resilience index for the T households.

Using the information on actual household coping responses to shocks over the last 12 months, we assess the 'reliability' of the resilience score be examining its predictive power on the coping strategies adopted by households in response to shocks. We find a strong positive association between the resilience index and the share of positive coping responses to shocks. While 37 per cent of households in the lowest quintile of the resilience score are able to adopt positive coping strategies to shocks, the corresponding figure for households in the highest quintile is 71 per cent, with noticeable difference between T and C households. We also examine the predictive power of the resilience score to food security using only the sample of C households in order to exclude the effect of the SCTP. The results of this analysis also show that high resilience score at baseline was reasonably predictive of food security at endline among the C households, indicating a reasonable level of reliability of the resilience score.

While the SCTP had no explicit objective on resilience, the overwhelming evidence of increased resilience and the association thereof with actual positive coping strategies to shocks experienced by the households suggests that households that benefit from unconditional cash transfer programs are able to make the right decisions that contribute to building household resilience in the many dimensions it is construed.

Keywords: Resilience, RIMA II, Cash Transfer, Social Protection, Food Security

PAPER

1. Background

The concept ofResilience is becoming increasingly popular within the international development community as aframework for profiling and ranking households in terms of their response capacity to shocks and stressors to livelihoods, particularly those that threaten food security. The objective is to providea single reference indicator for summarizing multidimensional aspects of household

livelihoods in order to better inform development and humanitarian interventions and also summarize program impacts. The term has a long history of use in mental health studies where resilience is defined as ‘the ability to withstand and rebound from disruptive life challenges’. In the development literature, resilience is discussed in relation to threats to livelihoods, often occasioned by shocks that can be natural or man-made, exogenous or endogenous, seasonal or recurrent, short or protracted (D'Errico et al. 2013; FAO II 2014). The definition of resilience in the development literatureis still a matter of some discussiondue to the multidimensional nature of the term, and contemporary definitions differ mainly in terms of scope and emphasis on the types of threats to livelihoods that have to be taken into consideration. The Resilience Alliance defines the resilience as ‘The capacity of a system to absorb disturbance and reorganise while undergoing change.’ DFID defines it as ‘...the ability of countries, communities and households to manage change, by maintaining or transforming living standards in the face of shocks or stresses—such as earthquakes, drought or violent conflict—without compromising their long-term prospects,’while the FAO's Resilience Measurement Technical Working Group defines it as "...the capacity that ensures adverse stressors and shocks do not have long-lasting adverse development consequences.’(Resilience Alliance, 2002) . Barrett and Constas (2014) define development resilience as ‘the capacity over time of a person, household or other aggregate unit to avoid poverty in the face of various stressors and in the wake of myriad shocks. If and only if that capacity is and remains high over time, then the unit is resilient’ The common thread through these and other definitions is the notion that resiliency reflects an ability to successfully avoid poverty and food insecurity even in the event of negative shocks or stressors to an established pattern of livelihood.The relevance of this concept cannot be overemphasized due to the increasing disruption in food supplies and agricultural productivity caused by climate change, as well as the frequent outbreaks of civil unrest and armed conflict. Conceptually, a more resilient household is one that is better able to anticipate and manage its exposure to negative shocks to livelihood, and when preventive measures fail, be able to withstand with more positive coping strategies. For example, households that make use of irrigation or other soil management techniques in farming are generally better positioned to avert the full effect of droughts, and also more likely to have higher productivity that minimizes the risk of food insecurity. Efforts to measure resilience are still very much debated both theoretically and empirically. However, there seems to be general consensus that a household's resilience encompasses aspects of household income generating capacity and diversification, ownership of agricultural and non-agricultural assets, access to social safety nets and basic services, as well as household stability and adaptive capacity to shocks. By providing a steady and predictable source of income, particularly one that is unconditional, the SCTP is hypothesised to positively impact on household income generation capacity, ownership of assets and household human capital such as health and education. We also hypothesise that the SCTP would not negatively impact on pre-existing access to social safety nets and basic services, or household demographic composition. The net effect of these effects should result in improved food security, lower exposure to the effects of perennial or seasonal shocks, and strengthened households' ability to cope with negative shocks with more positive coping strategies that do not undermine long term development objectives.

This expected outcome is not automatic or guaranteed. The use to which households put the SCTP money determines how much they can improve on their livelihood and ability to manage shocks and stressors to livelihoods. The choice of investments can also be constrained by the household's pre-existing conditions as households with tighter food consumption budget constraints may not be able to make medium to long term productive investments or asset accumulation to improve their resilience. This report examines the impacts of the SCTP on household resilience and provide some validity test of the resilience score by analysing the relationship between the resilience score and the use of positive coping strategies in response to shocks. We also examine the predictive power of the resilience score for use as a ranking tool by examining the relationship between endline food security and baseline resilience for the control households who had no exposure to the SCTP treatment. The next section of provides an overview of the SCTP programme followed by a description of the broader impact evaluation design and the data source for the analysis. Section four provides the broad intent-to-treat (ITT) impact estimates on the various dimensions of resilience. Section five provides a description and estimation of household resilience capacity index using the FAO RIMA II model, and analysis the program impacts and the validity tests described above. Section six provides a summary and conclusion.

2. Overview of the Malawi SCTP Programme

The Malawi Social Cash Transfer Programme (SCTP) is one of the several cash transfer programs currently being implemented by governments and development partners acrossAfrica. Locally known as the Mtukula Pakhomo, the SCTP is an unconditional cash transfer programme targeted to ultra-poor, labour-constrained households. The programme began as a pilot in Mchinji district in 2006 and is run by the Government of Malawi (GoM). Since 2009, the programme has expanded to reach 18 out of 28 districts in Malawi. The programme has experienced impressive growth beginning in 2012, and most notably in the last two years. By December 2015, the SCTP had reached over 163,000 beneficiary households.

The objectives of the SCTP are to reduce poverty and hunger, and to increase school enrolment rates in these ultra-poor households. The first evaluation of the programme, the 2007-2008 impact evaluation of the

pilot project in Mchinji, demonstrated that the Malawi SCT Pilot Scheme had a range of positive outcomes including increased food security, ownership of agricultural tools and curative care seeking[1]. Since that time, the programme has witnessed some changes in targeting and operations, and significant expansion. The expectation is that these improvements will lead to even stronger impacts for the larger target population. The SCTP is administered by the Ministry of Gender, Children, Disability and Social Welfare (MoGCDSW) with additional policy oversight provided by the Ministry of Finance, Economic Planning and Development (MoFEPD). UNICEF Malawi provides technical support and guidance. Funding for the programme from 2007-2012 was largely provided by the Global Fund to Fight AIDS, Tuberculosis and Malaria (GF). In 2011, the German Government (through Kreditanstalt für Wiederaufbau, or KfW) and the GoM signed an agreement to provide substantial funding for paying arrears in existing areas. In 2013, Irish Aid signed an agreement to expand into one new district, and in 2014, KfW and the European Union (EU) topped-up donor contributions to enable full coverage in the seven existing districts, as well as scale-up intoeight additional districts. Also in 2014, GoM launched a ğgovernment-fundedč district (Thyolo) and the World Bank committed to providing resources to expand into two additional districts. The SCTP was launched in these 11 newly funded districts starting in mid-2014 through early 2015,bringing coverage to 18 districts.

Eligibility criteria are based on a household being ultra-poor (unable to meet the most basic urgent needs, including food and essential non-food items such as soap and clothing) and labour-constrained (defined as having no member ďfit to work' or having the ratio of ďnot fit to work' to ďfit to work' of more than three). Household members are defined as ďunfit to work' if they are below 19 or above 64 years of age, or if they are aged 19 to 64 but have a chronic illness or disability, or are otherwise unable to work[2]. Beneficiary selection is done through a community-based approach with oversight provided by the local District Commissioner's (DC's) Office and the District Social Welfare Office (DSWO). Community members are appointed to the Community Social Support Committee (CSSC), and the CSSC is responsible for identifying households that meet these criteria and creating a list. These lists are to include roughly 12 per cent of the households in each Village Cluster (VC), and after further screening, the list is narrowed in order to achieve a target coverage rate of 10 percent. The ultra-poor eligibility condition is implemented through a proxy means test (PMT). The transfer amount varies based on household size and there is a ěschooling bonus' determined by the number of children in the household enrolled in primary and secondary school. Transfer amounts were updated just prior to the start of this evaluation in 2012. Due to inflation and decline of the value of the real transfer, transfer amounts were increased again in May 2015. The transfer amounts are shown in Table 2.1.1.

Table 2.1.1 – Structure and Level of Transfers (Current MWK)

	2013 to May 2015	After May 2015
1 Member	1,000	1,700
2 Members	1,500	2,200
3 Members	1,950	2,900
4+ Members	2,400	3,700
Each primary school child[1]	300	500
Each secondary school member[2]	600	1,000

[1]Provided for household residents age 21 or below in primary school. 2 Provided for household residents age 30 or below in secondary.

To put these amounts in perspective, Table 2.1.2 shows the average transfer payment and transfer as share of the household baseline consumption. On average, the total annual transfer amount received by households was MWK25,622 and the average monthly per capita of the transfer was MWK 559. We find that on average, the transfer represented 20 per cent of baseline consumption among all beneficiaries, but was higher at 27 per cent among the poorest 50 per cent of households at baseline.Additional details of the implementation and operational performance can be found in the main impact evaluation report (Handa et al, 2016). In particular, there was high adherence in terms of disbursement with up to 99 per cent of target beneficiaries receiving payments as expected. The quantum of money received was also generally consistent with the schedule in Table 2.1.1 except for lack of adjustment for rolling household size. There was little reference to corruption in terms of program officers demanding payments from recipients, and recipients were generally satisfied with the mode of payment. Although there were some misconceptions about eligibility for receiving the SCTP, perceived conditionalitiesregarding the expenditure of the SCTP money, how long into the future beneficiaries expect to receive the transfer, and delays encountered in going to receive the transfer, there is reason to believe that treatment has been very successful for which reason we would expect to see the theorized impacts.

3. Impact Evaluation Design

This section provides key highlights of the impact evaluation design and the analytical framework. Additional details can be found in main impact evaluation report (Handa et al, 2016).

[1] Miller, C., Tsoka, M., & Reichert, K. (2010). Impacts on children of cash transfers in Malawi. In S. Handa, S.
[2] Social Cash Transfer Inception Report, Ayala Consulting. July 2012.

Table 2.1.2 – Average Transfer Payment and Transfer Share

	Midline				
	Total	Poorest 50 per cent	Small hhld	Large hhld	Female head
Household Size	4.47	5.49	2.68	6.39	4.49
Real hhld total annual transfer (MWK)	22,310	24,300	19,016	25,855	22,486
Real PC total monthly transfer (MWK)	520	413	678	350	521
Real transfer share	0.18	0.25	0.19	0.17	0.19
Proportion of hhlds with transfer share < 20 per cent	0.68	0.45	0.65	0.71	0.67
N	1,649	818	843	806	1,361
	Endline				
Household Size	4.67	5.58	2.75	6.48	4.71
Real hhld total annual transfer (MWK)	25,622	28,180	21,347	29,663	25,697
Real PC total monthly transfer (MWK)	559	467	730	396	551
Real transfer share	0.20	0.27	0.20	0.20	0.20
Proportion of hhlds with transfer share < 20 per cent	0.64	0.39	0.63	0.64	0.61
N	1,157	615	553	604	954

Notes: Transfer values expressed in real August 2013 national prices, MWK. Small households contain four or fewer members. Descriptive statistics are corrected for multi-stage survey design.

3.1 Study Design

The impact evaluation for Malawi's SCTP uses a mixed method, longitudinal, experimental study design, combining quantitative surveys, qualitative interviews and group discussions, and simulation models to demonstrate wider community economic impacts[3]. The study districts, Salima and Mangochi, were selected for the study in order to integrate with GoM's SCTP expansion plans. The MoGCDSW had plans to conduct retargeting in existing programme areas, and to expand the SCTP to cover 18 districts, starting in 2012. The districts scheduled for scale-up in early 2013 were Salima and Mangochi, so the MoGCDSW took this opportunity to integrate an impact evaluation into the planned expansion activities. Subsequently, the research team worked with MoGCDSW, Ayala Consulting and development partners to randomly select two study Traditional Authorities (TAs) in each district (Maganga and Ndindi TAs in Salima, and Jalasi and M'bwana Nyambi TAs in Mangochi). The quantitative survey design consists of a cluster-randomized longitudinal study with baseline surveys (household, community and business) which began in July 2013 and two follow-up surveys (household and community) – the midline survey was conducted starting in November 2014 and the endline survey was conducted starting in October 2015. The qualitative survey is an embedded longitudinal study of 16 treatment households, which includes three main components: in-depth interviews (IDIs) with the caregiver and a young person (aged 13-19 at baseline) from each household at baseline and follow-up; key informant interviews (KIIs) with community members at follow-up; and focus group discussions (FGDs) in each study TA at baseline and follow-up. Insights from these qualitative interviews and discussions with community members provide complementary data to that obtained through the surveys and will allow us to examine certain topics in more depth, in particular, the role and evolution of social networks and the mechanisms and dynamics that shape outcomes related to the cash transfer programme.

Baseline data collection was conducted to allow the study team to accurately describe characteristics of beneficiary households before receiving any cash transfers. Midline and endline data has been compared to data collected at baseline using a difference-in-differences (DD) estimation approach to assess the full impacts of the SCTP. Data collected on the control group allows the researchers to

[3] The FAO, with direct funding from the Department for International Development-United Kingdom (DFID-UK), built a simulation model to predict the potential of the SCTP to generate local economy-wide effects. Those results are reported separately in: Thome, K., Taylor, J.E., Tsoka, M., Mvula, P., Davis, B. and Handa, S., Local Economy-wide Impact Evaluation (LEWIE) of Malawi's Social Cash Transfer (SCT) Programme, PtoP project report, FAO - March 2015.

identify which impacts over time are directly attributable to the cash transfer, controlling for outside influences. This is done by taking the overall changes experienced by beneficiaries and subtracting the changes also experienced by control households. The difference in these two are attributed to the programme and considered programme impacts.

3.2 Sampling and Data Collection

The sample for the quantitative longitudinal impact evaluation includes 3,531 SCTP-eligible households and 821 non-eligibles located in 29 VCs across the four TAs in the two districts at baseline. There are 14 VCs (1,678 households) in the treatment (T) group and 15 VCs (1,853 households) in the control (C) – or delayed-entry— group. Data on the non-eligible households were collected to enable FAO to build the local economy simulation model.6The study design uses both random selection (for the selection of study areas at the TA and VC level) and random assignment (to determine T and C VCs), the most rigorous approach available according to evaluation literature[4]. This randomization was done in cooperation with GoM, and was a transparent process open to the public, and the assignment to T-C status was public and attended by local community leaders. The baseline data was used to check for balance between T and C households in order to ĕassess' the performance of the randomization and the results showed that T and C households were balanced on more than 100 relevant variables that were examined. After treatment and control VCs were assigned, the qualitative sample of 16 households was selected from treatment VCs for IDIs of the caregiver and a young person. We used a stratified sampling approach to facilitate comparison across sex and orphan status, resulting in a sample that was half male and half orphaned. Geographically, our sample covers two districts, Salima and Mangochi, and four TAs (Salima – Maganga and Ndindi TAs; Mangochi – Jalasi and M'bwana Nyambi TAs). Four households were selected from each TA. We determined the sample size based on our previous experience, guidelines for longitudinal qualitative research, and feasibility. A prerequisite for selection of a household was that the household had to have at least one youth aged 13-19 years of age (at the time of baseline) who had completed the Young Person's Module in the quantitative survey. This allows for a richer analysis of the youth IDIs, as the qualitative interview could be linked to information on behaviour and attitudes of this same youth from the quantitative survey. These households were then sorted based on gender and age of caregiver and young person, and other characteristics of the young person. Sixteen households were selected on the basis of having a balance of characteristics among the youth respondents, including female/ male, orphan/ non-orphan, had sex/ never had sex and currently enrolled in school/ not currently enrolled in school. Alternate households with similar characteristics were selected to match each of the 16 selected, in case participants refused the IDI or were unavailable.

Focus group discussions (FGDs) at midline were held with two separate groups (beneficiaries and non-beneficiaries) in each of the four TAs, for a total of 10 FGDs[5]. The groups were divided into programme beneficiaries and community members not receiving the transfer in order to allow participants to speak freely, without stigma or judgement from the other group. FGD participants were community members aged 18 and above who have detailed knowledge of the community and were invited by the local village heads. The number of FGDs was determined by the fact that we wanted to cover each TA to account for general geographical and cultural differences that could affect the impacts, perceptions, and operations of the SCTP. The specific locations within the TAs were driven by the fact that, for logistical purposes, the FGDs were conducted during the same time period as the IDIs; therefore, FGDs were held in the same VCs where the IDIs were given.

The survey instruments used consists of six major components:

1. Household Survey administered to the main respondent for the household;

2. Young Person's Module for up to three youth ages 15-22 in the household (age at endline);

3. Anthropometric Measures for children ages 6 months to 71 months in the study households;

4. Community Survey given to a group of knowledgeable community members to gather information on community norms, resources, pricing and access to services;

5. IDIs for caregiver and one youth from 16 treatment households;

6. KIIs and FGDs with knowledgeable community members to discuss impacts, perceptions, and operations of the SCTP. Beneficiary and non-beneficiary FGDs were held separately.

Survey instruments were reviewed for ethical considerations and approved by the UNC Internal Review Board (IRB) and Malawi's National Commission for Science and Technology (NCST), National Committee for Research in Social Sciences and Humanities (UNC IRB Study No.14-1933; Malawi NCST Study No. RTT/2/20). Instruments are available online at: https://transfer.cpc.unc.edu/?page_id=196

[4] Shadish WR, Cook TD, Campbell DT. Experimental and Quasi-Experimental Designs for Generalized Causal Inference. Boston: Houghton-Mifflin. 2002.

[5] An additional set of FGDs was conducted in Mangochi since time permitted the team to do so.

3.3 Attrition

Attrition occurs when households from the baseline sample are missing in the follow-up surveys. There are different reasons for households not responding in subsequent survey waves. Migration, death, separation, or the dissolution of households can cause attrition and make it difficult to locate a household in the second or third wave of data collection. Attrition can cause problems for an evaluation because it not only decreases the sample size (leading to less precise estimates of programme impact), but it could also introduce bias into the analytic sample. If attrition is selective, it could lead to incorrect programme impact estimates, or it could change the characteristics of the sample and therefore, it could affect the representativeness of the impact results. There are two types of attrition: differential and overall. Differential attrition occurs when the treatment and control samples differ in the types of households or individuals who leave the sample. Differential attrition can create biased samples by reducing or eliminating the balance between the T and C groups achieved at baseline. Since we will conduct the analysis using the households present in all three waves of the survey, it is also important to examine for overall attrition, which is the total share of observations missing at the follow-up surveys from the original baseline sample. Overall attrition can change the characteristics of the remaining sample of analysis and render it non-representative of the population from which it was obtained. Overall attrition can affect the ability of the study's findings to be generalized to the population of interest. Ideally, both types of attrition should be null or small. We investigated attrition at endline for the quantitative sample by testing for similarities at baseline between (1) treatment and control groups for all households included in the panel of households, that is, for the households interviewed at baseline and in both follow-up surveys (differential attrition) and, (2) all households in the panel and the households who were missing in either the midline or the endline survey (overall attrition). Fortunately, we do not find evidence of differential attrition, meaning that we preserve the balance between the T and C groups found in the baseline survey. Summary attrition tables are given in Appendix A. However, there is evidence of overall attrition in the sample which we correct for by using modelled inverse probability weights. The attrition rates and effective sample sizes are shown in Table 3.3.1.

Table 3.3.1 – Household "In the Panel" and Attrition Rates by T - C Status and District

		In Panel Rate (Per cent)	Attrition Rate (Per cent)	N
Total sample		93.5	6.5	3,531
Treatment group		94.0	6.0	1,678
Control group		93.2	6.8	1,853
District	Status			
Salima	Treatment	95.1	4.9	800
Salima	Control	93.4	6.6	975
Mangochi	Treatment	92.9	7.1	878
Mangochi	Control	92.8	7.2	878

For the qualitative sample, the caregiver and one youth, aged 13-19 from 16 households were interviewed at baseline, for a total of 32 participants. At midline, three female youth had left their homes for marriage, and one went to live with relatives. One male youth left home to attend secondary school in another district. While these five youth were no longer in the SCTP households at follow-up, the research team was able to trace all of them for the follow-up interviews. One caregiver, a grandmother, had passed away shortly before midline interviews and the youth had gone to live at his aunt's house. Both the youth and the aunt were interviewed at midline. Therefore, at midline, 32 interviews were conducted, and 31 of those were with the same baseline participants, the only exception being the deceased participant. Our team had similar success with retention at endline; while six youth (three boys, three girls) were no longer living at the households where they were initially recruited, the interviewers were able to track and interview all of them. Of note, among the six who had left their households, all three females had married while all three males had left to study (two in secondary, one in madrasa). Three females who had married had returned home by endline and were interviewed in their original households. Overall, 32 interviews were conducted at endline with the same 32 respondents from midline.

4. Program Impact on Resilience Domains

This section presents the program impacts on the various domains of resilience. The domains include economic activities, asset ownership, access to credits and transfers, access to social safety nets, labour use, shocks and coping, consumption and food security. Impacts are estimated using DD regression and are reported as average treatment effects.

4.1 Impact on Economic Activities

One of the objectives of the SCTP is to reduce poverty and hunger among beneficiaries. Since household poverty and hunger are invariably the result of household production being in deficit of household demand, we recognize that increasing household production is the more sustainable way to reduce poverty and hunger in the long term. The SCTP cash is hypothesized to act as a catalyst for behavioural responses and necessary investments in household economic activities that will result in increased production. Our analysis shows an impact of 62kg in overall crop harvest, driven mainly by an impact of 60kg on the five main staple crops (maize, groundnut, rice, pigeon pea and pumpkin). There is also an impact of MWK 12,000 on the total value of crop harvest. On livestock production, the proportion of T householdsinvolved in livestock production at baseline more than doubled at endline (from 29 per cent to 59 per cent) and the impact on raising livestock was 22 pp. Livestock owned, measured in terms of the standard tropical livestock unit (TLU) equivalents also more than doubledamong T households from baseline to endline, and the impact on this indicator was about 5 pp. We also found significant positive impacts on livestock consumption, and expenditure on livestock purchases over the past 12 months. We generally do not find any impacts on the operation of non-farm household enterprises (NFE) or on enterprise profitability. Overall, we find an impact of 0.24 units in the number of economic activities that households are engaged in, an indicator of income source diversification and strengthening (Table 4.1.1).

Table 4.1.1 – Summary Impacts on Economic Activities

Dependent Variable	Endline Impact	Midline Impact	Impact Diff (EL-ML)	Baseline Treated Mean	Endline Treated Mean
	(1)	(2)	(3)=(1)-(2)	(4)	(5)
Crop production household	0.016	-0.012	0.029**	0.929	0.968
	(1.11)	(-0.86)	(2.41)		
Total crop harvest (kg)	62.418***	12.825	49.593***	175.116	272.444
	(5.07)	(0.85)	(3.18)		
Total crop harvest (kg) - Staples	60.342***	9.614	50.728***	168.444	260.526
	(4.73)	(0.71)	(3.23)		
Total value of crop harvest (MWK)	12,175.419***	389.573	11,785.845***	29,280.146	48,110.731
	(3.80)	(0.12)	(3.86)		
Raised or owned livestock	0.220***	0.135***	0.084***	0.288	0.593
	(5.15)	(2.78)	(3.24)		
TLU owned presently	0.051***	0.034**	0.017	0.039	0.102
	(3.73)	(2.47)	(1.67)		
Household has non-farm enterprise	0.010	-0.046	0.056*	0.238	0.240
	(0.28)	(-1.36)	(1.78)		
Number of economic activities	0.246***	0.079	0.167***	1.455	1.800
	(3.98)	(1.45)	(3.53)		
N	9,902	9,902		1,576	1,575

Notes: Estimations use difference-in-differences modelling among panel households. Binary outcomes are estimated using LPM. All estimations control for baseline head of household's characteristics (age in years, sex, indicator of any schooling, indicator of literacy, marital status), household demographic composition and size, indicators for new household members and household member outmigration, and a vector of contemporaneous cluster level prices. Robust t–statistics were obtained clustering at the different levels of the sampling design and are shown in parenthesis. * 10% significance ** 5% significance; *** 1% significance

The main impact evaluation report (Handa et. al, 2016) has extensive coverage on various aspects of these household economic activities including impacts inputs into crop production (fertilizer use, farm size, etc), crop sales, livestock consumption and sales, and the specific livestock types (goat/sheep, chicken, duck/geese). We also present some of the heterogeneous treatment effects on these indicators. In particular, we find similar

effects, often with larger coefficient sizes, for the baseline bottom 50 per cent of households. Annex B of this report provides some of the activity specific and heterogeneous impact tables.

4.2 Impacts on Asset Ownership

We investigate the impacts of the SCTP on ownership and investments in agricultural and non-agricultural assets. At baseline, about 93 of households owned or cultivated land, and the inability to own basic farming tools often led to borrowing or renting of assets, taking away from already scarce household resources and reducing productivity. Ownership of basic durable goods is indicative of improved quality of life and also serves as a store of ŏwealth'thatcan be sold or pawned to deal with 9 emergencies arising out of shocks or stressors to livelihood. Tables 4.2.1 and 4.2.2 provide a summary of the impacts on ownership of assets. Table 4.2.2 is based on cross-sectional differences for midline and endline since the information on asset ownership was not collected at baseline. In either case, we find significant positive impacts on a household ŏwealth' index based on the first principal component for the ownership of the agricultural or non-agricultural assets. We also find significant impacts on asset purchases in the last twelve months as well as the monetary value of purchases. Details on the specific assets purchased and of the heterogeneous impacts are provided in main evaluation report by Handa et al, 2016.

Table 4.2.1 – Impacts on Ownership and Purchases of Agricultural Assets

Dependent Variable	Endline Impact	Midline Impact	Impact Diff (EL-ML)	Baseline Treated Mean	Endline Treated Mean	Endline Control Mean
	(1)	(2)	(3)=(1)-(2)	(4)	(5)	(6)
Own any asset	0.065***	0.014	0.051***	0.882	0.962	0.886
	(3.21)	(0.60)	(2.79)			
Number of asset types	0.249**	0.080	0.169*	1.615	1.922	1.491
	(2.41)	(0.68)	(1.70)			
Asset ownership index	0.302**	0.121	0.181	-0.133	0.269	-0.228
	(2.68)	(0.91)	(1.64)			
Any Asset Purchase in last 12m	0.072**	0.089***	-0.018	0.081	0.184	0.096
	(2.76)	(3.40)	(0.72)			
Total expenditure on purchases (MWK)	174.323*	152.698**	21.625	210.918	394.152	173.112
	(2.02)	(2.11)	(0.36)			
N	9,901	9,901		1,576	1,574	1,726

Notes: Estimations use difference-in-differences modelling among panel households. Binary outcomes are estimated using LPM. See Table 4.1.1 for additional explanatory notes on model specification, including a list of control variables utilized. * 10% significance ** 5% significance; *** 1% significance

Table 4.2.2 – Impacts on Ownership and Purchases of Durable Goods

Dependent Variable	Endline Impact	Midline Impact	Midline Treatment Mean	Midline Control Mean	Endline Treated Mean	Endline Control Mean
	(1)	(2)	(3)	(4)	(5)	(6)
Owns any durable good	0.141***	0.085***	0.582	0.497	0.880	0.733
	(7.50)	(3.74)				
Number of durable goods owned	0.619***	0.124*	1.061	0.924	2.553	1.835
	(5.21)	(1.87)				
Durable good ownership index	0.326***	0.093	-0.049	-0.152	0.319	-0.103
	(3.47)	(1.20)				
Any expenditure on goods in last 12 months	0.068***	0.029***	0.061	0.029	0.234	0.148
	(3.07)	(4.55)				
Expenditure on durable goods in last 12 months (MWK)	228.344**	287.615***	473.672	150.329	782.372	459.948
	(2.17)	(3.01)				
N	3,300	3,299	1,574	1,725	1,574	1,726

Notes: Coefficients representcross-sectional differences between panel T and C households at Midline and at Endline. Binary outcomes are estimated using LPM. See Table 13.1.1 for additional explanatory notes on model specification, including a list of control variables utilized. * 10% significance ** 5% significance; *** 1% significance.

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4.3 Impacts on Access to Credit and Transfers

Access to credit and other transfers is another important dimension to household livelihood. Credits and transfers could be relied upon to smoothen consumption and other expenditure in times deficit. This could be during the lean agricultural season or illness of household members. Credits and transfers could also be necessary for occasional large expenses such as payment of school fees at the start of the school year, or investment in equipment for a non-farm business.Borrowing and purchases on credit could prove regressive especially if they come with high-interest payments and are used directly for consumption. By providing unconditional regular cash to the households, the SCTP is expected to ease the demand for credits, especially for consumption. At the same time, it is possible that being enrolled in the SCTP could extricate beneficiaries from networks of friends and relatives who would otherwise provide credit or other types of support. Additionally, beneficiaries may often be obligated by social norms to share their money with other friends and relatives through increased out-transfers. The net effect of all these dynamics can have profound effects on how the SCTP improves the livelihood of beneficiaries.

The survey instrument therefore elicited information on various aspects of credit and transfer activities and behaviour in all three waves. Questions were asked about outstanding debts that originated more than 12 months prior to each survey round, as well as loans and credit purchases in the 12 month period preceding each data collection. Our analysis shows a five pp impact reduction in the proportion of households with a debt on a loan that originated more than 12 months prior to the survey. We also find a nine pp impact reduction in purchases on credit and a further seven pp impact reduction on the proportion of credit purchases that have been fully repaid. We find no impacts on the taking a loan in the last 12 months or fully repaying the loan taken (Table 4.3.1). Putting it all together, a household was in debt if it had outstanding balances from more than 12 months ago, or had not fully repaid any loan or credit purchases (including any accruing interest) taken in the past 12 months. Overall, we find a 10 pp impact reduction on theproportion of households in debt, and a comparative decrease ofMWK 916 in the total debt in T households.

Table 4.3.1 – Impacts on Loans and Credits

Dependent Variable	Endline Impact	Midline Impact	Impact Diff (EL-ML)	Baseline Treated Mean	Endline Treated Mean	Endline Control Mean
	(1)	(2)	(3)=(1)-(2)	(4)	(5)	(6)
Still owes on loan from 12+ months	-0.052**	-0.016	-0.036**	0.066	0.087	0.146
	(-2.69)	(-0.80)	(2.24)			
Took a loan in last 12m	-0.012	-0.035	0.023	0.243	0.217	0.230
	(-0.34)	(-1.22)	(0.76)			
Loan fully paid	0.024	0.032	-0.008	0.821	0.860	0.817
	(0.83)	(1.44)	(0.36)			
Purchased on credit in last 12m	-0.087**	-0.069**	-0.017	0.295	0.196	0.243
	(-2.34)	(-2.52)	(0.54)			
Credit on purchases fully paid	0.072***	0.049**	0.023	0.847	0.908	0.846
	(2.88)	(2.52)	(1.03)			
Currently Owes	-0.096**	-0.074**	-0.023	0.306	0.244	0.341
	(-2.66)	(-2.59)	(0.74)			
Total current debt (MWK)	-915.935***	-430.842**	-485.093**	935.322	1,155.823	2,000.854
	(-3.22)	(-2.43)	(2.18)			
N	9,902	9,902		1,576	1,575	1,726

Notes: Estimations use difference-in-differences modelling among panel households. Binary outcomes are estimated using LPM. See Table 4.1.1 for additional explanatory notes on model specification, including a list of control variables utilized. * 10% significance ** 5% significance; *** 1% significance.

Further to the positive outlook on household debts, we investigate if this is caused by differential credit constraints. The results in Table 4.3.1 could be observed if T households were more likely to be refused loans or credits when in fact they needed it and actually applied for it. Additionally, if T households did not seek a loan or seek to purchase on credit because they were sure they would be refused, then we could still get the results in Table 4.3.1. There would be some concern if either of these reasons contributes significantly to the results in Table 4.3.1. There were question in the survey instrument to interrogate all these mechanisms, and our estimations show that T households were significantly less likely to have been refused a loan they applied for, or denied to buy on credit. We also find null

effects on the baseline situation regarding access to sources of credit purchase and loans. Ouroverall indicator on credits is household credit constraint. A household is considered credit constrained if the household:

a. has a loan debt, but actually wanted more loan than it received at the same interest rate; or

b. would ask for a loan or purchase on credit if they were sure they could get it; or

c. has been refused a loan or denied a purchase on credit when they actually asked.

This does not control for whether they actually needed a loan or credit, but rather whether they had any barriers in case they needed it. We find no significant impact on this overall indicator (Table 4.3.2). In reconciling this with the result in Table 4.3.1, we can be quite sure that the positive outlook on credit among T households is not likely a result of differential credit constraints, but more likely a result of lack of need for credit. We also recognize that a credit is not necessarily a bad thing, especially if it can be put to productive use to generate multiplying effects. We accordingly examine impacts on the purpose for obtaining a loan or credit and find an eight pp impact decline in the share of household using credit for consumption. The impacts on use of credit or loan for health, education and productive investments are all null (Table 4.3.3).

Table 4.3.2 – Impacts on Credit Constraints

Dependent Variable	Endline Impact (1)	Midline Impact (2)	Impact Diff (EL-ML) (3)=(1)-(2)	Baseline Treated Mean (4)	Endline Treated Mean (5)	Endline Control Mean (6)
Applied for loan but refused	-0.016**	-0.011	-0.006	0.045	0.016	0.027
	(-2.17)	(-1.00)	(0.48)			
Asked to buy on credit but refused	-0.045**	-0.018	-0.027	0.095	0.038	0.076
	(-2.19)	(-0.71)	(1.53)			
Wanted larger loan at same interest rate	-0.012	-0.022	0.010	0.125	0.097	0.088
	(-0.45)	(-0.85)	(0.36)			
Sure to get a loan if applied	-0.051	-0.030	-0.021	0.190	0.119	0.127
	(-1.27)	(-1.01)	(0.63)			
Would apply for loan if sure can get	-0.060	-0.014	-0.046*	0.148	0.091	0.140
	(-1.49)	(-0.46)	(1.76)			
Sure can buy on credit if asked	-0.007	0.035	-0.042	0.167	0.171	0.175
	(-0.20)	(0.91)	(0.74)			
Would ask to purchase on credit if sure can get	0.012	0.009	0.003	0.105	0.085	0.067
	(0.40)	(0.35)	(0.10)			
Loan/Credit Purchase constrained	0.027	0.012	0.015	0.869	0.895	0.886
	(0.96)	(0.50)	(0.50)			
N	9.902	9.902		1.576	1.575	1.726

Notes: Estimations use difference-in-differences modelling among panel households. Binary outcomes are estimated using LPM. See Table 4.1.1 for additional explanatory notes on model specification, including a list of control variables utilized. * 10% significance ** 5% significance; *** 1% significance.

On transfers in and out of the household, we examine transfers of cash, food or labour. We find no impacts on any in- or out transfers, both at the intensive and extensive margins (Table 4.3.4). We also investigate the question of whether households could get any such support when they actually needed it, and also found no impacts (Table 4.3.5).It can thus be argued that the SCTP does not induce a č crowding outčof pre-existing sources of in-transfers or excess demand for out-transfers.

4.4 Impacts on Access to Social Safety Nets

Apart from individuals, the GoM and other non-governmental organizations also provide various social safety nets (SSN) to which poor households have access. It is also desirable that the SCTP will not have any čcrowding-outčeffect on the access to these social safety nets. To derive the most benefit from the SCTP, it is essential that the cash transfers act as a complement to these networks and social safety nets, not as a substitute. Table 4.4.1 shows the impacts of the SCTP on access to social safety nets. Overall, we do not find any impacts on benefiting from at least one SSN or on the number of SSNs households benefit from. We also do not find an impact on the value of the SSN benefits received, nor on benefits from the voucher for fertilizer program (FISP) – aflagship government program to boost

Table 4.3.3 – Impacts on Credit Use

Dependent Variable	Endline Impact (1)	Midline Impact (2)	Impact Diff (EL-ML) (3)=(1)-(2)	Baseline Treated Mean (4)	Endline Treated Mean (5)	Endline Control Mean (6)
Some loan used for prod. invest	0.003	-0.003	0.006	0.036	0.034	0.027
	(0.33)	(-0.49)	(0.75)			
Some loan used for consumption	-0.009	-0.022	0.013	0.164	0.165	0.175
	(-0.30)	(-1.08)	(0.46)			
Some loan used for education	-0.008	-0.001	-0.007	0.009	0.022	0.026
	(-0.88)	(-0.12)	(0.96)			
Some loan used for health	-0.014	-0.006	-0.008	0.043	0.055	0.061
	(-0.84)	(-0.39)	(0.67)			
Some credit used for prod. invest	0.004	0.004	0.001	0.006	0.006	0.003
	(1.07)	(0.81)	(0.18)			
Some credit used for consumption	-0.081**	-0.077***	-0.004	0.267	0.177	0.225
	(-2.27)	(-2.84)	(0.13)			
Some credit used for education	-0.002	0.000	-0.003	0.001	0.002	0.004
	(-0.84)	(0.07)	(0.80)			
Some credit used for health	-0.009	-0.000	-0.009	0.016	0.010	0.012
	(-1.23)	(-0.06)	(1.36)			
N	9,902	9,902		1,576	1,575	1,726

Notes: Estimations use difference-in-differences modelling among panel households. Binary outcomes are estimated using LPM. See Table 4.1.1 for additional explanatory notes on model specification, including a list of control variables utilized. * 10% significance ** 5% significance; *** 1% significance.

Table 4.3.4 – Impacts on Credit Use

Dependent Variable	Endline Impact (1)	Midline Impact (2)	Impact Diff (EL-ML) (3)=(1)-(2)	Baseline Treated Mean (4)	Endline Treated Mean (5)	Endline Control Mean (6)
Any in-transfer of cash, food or labour	0.081	0.002	0.078	0.759	0.747	0.700
	(1.16)	(0.03)	(1.17)			
Any out-transfer of cash, food or labour	0.036	-0.003	0.038	0.049	0.109	0.065
	(1.44)	(-0.10)	(1.52)			
Total value of cash, food of labour in-transfer (MWK)	917.306	1,074.855	-157.550	8,223.733	9,448.599	9,162.363
	(0.55)	(0.69)	(0.11)			
Total value of cash, food of labour out-transfer (MWK)	564.025	-126.827	690.851**	836.981	1,326.460	919.906
	(1.41)	(-0.36)	(2.12)			
Net transfer of cash, food or labour (MWK)	353.281	1,201.682	-848.401	7,386.752	8,122.139	8,242.456
	(0.24)	(0.84)	(0.64)			
N	9,899	9,899		1,576	1,575	1,726

Notes: Estimations use difference-in-differences modelling among panel households. Binary outcomes are estimated using LPM. See Table 4.1.1 for additional explanatory notes on model specification, including a list of control variables utilized. * 10% significance ** 5% significance; *** 1% significance

agricultural productivity through fertilizer use.

We analyse the impacts on specific SSNs and find generally null impacts except on the proportion of households that benefit from the other free food program, which has seen a negative 14 pp impact. However, we do not find an impact on the value of free food received which is quite surprising given the

Table 4.3.5 – Perceived Availability of Support

Dependent Variable	Endline Impact (1)	Midline Impact (2)	Impact Diff (EL-ML) (3)=(1)-(2)	Baseline Treated Mean (4)	Endline Treated Mean (5)	Endline Control Mean (6)
Household sure can get Cash Transfer in case of need	0.078	0.058	0.020	0.459	0.532	0.492
	(1.03)	(0.70)	(0.33)			
Household sure can get Food/Other Consumables in case of need	0.057	-0.005	0.062	0.746	0.677	0.670
	(0.76)	(-0.07)	(0.86)			
Household sure can get Labour or Time in case of need	0.005	-0.037	0.042	0.428	0.405	0.393
	(0.07)	(-0.62)	(0.86)			
Household sure can get Agric Implements/Inputs in case of need	0.025	-0.019	0.043	0.318	0.230	0.224
	(0.35)	(-0.34)	(0.77)			
N	9,898	9,898		1,576	1,575	1,726

Notes: Estimations use difference-in-differences modelling among panel households. Binary outcomes are estimated using LPM. See Table 4.1.1 for additional explanatory notes on model specification, including a list of control variables utilized. * 10% significance ** 5% significance; *** 1% significance

Table 4.4.1 – Impacts on Social Safety Nets

Dependent Variable	Endline Impact (1)	Midline Impact (2)	Impact Diff (EL-ML) (3)=(1)-(2)	Baseline Treated Mean (4)	Endline Treated Mean (5)	Endline Control Mean (6)
Any SSN benefit	-0.038	-0.043	0.005	0.693	0.616	0.589
	(-0.74)	(-0.80)	(0.11)			
No. of SSN benefits	-0.300	-0.215	-0.085	1.120	0.777	0.845
	(-1.53)	(-1.31)	(0.70)			
Value of SSN benefits (MWK)	-187.629	-281.150	93.521	9,008.590	9,074.040	8,303.158
	(-0.12)	(-0.21)	(0.10)			
Voucher for fertilizer (FISP)	0.022	-0.007	0.029	0.532	0.507	0.439
	(0.42)	(-0.13)	(0.83)			
Value of Voucher for fertilizer	665.030	298.784	366.246	6,343.765	6,955.533	5,853.329
	(0.83)	(0.36)	(0.45)			
N	9,901	9,901		1,576	1,575	1,726

Notes: Estimations use difference-in-differences modelling among panel households. Binary outcomes are estimated using LPM. See Table 4.1.1 for additional explanatory notes on model specification, including a list of control variables utilized. * 10% significance ** 5% significance; *** 1% significance

huge impact on the extensive margin (Table 4.4.2).

4.5 Impacts on Labour Use

The extent to which a household has available labour is likely to play a mediating role on how the SCTP impacts household economic activities and productivity. If labour is available and under-utilized due to liquidity or knowledge constraints, an increase in work participation would be expected for less labour-constrained households. This would increase household productivity and create a multiplying effect beyond the size of the SCTP amount. Conversely, households with tighter labour constraints may be less responsive in their work participation if members are not fit to work, and the SCTP cash would go directly into consumption. The more desirable outcome is that households are able to re-allocate labour from less productive activities to more productive ones, and to be able to move away from hazardous labour, particularly for children. Appropriatemodules in the surveys allow for analysis of these effects.

Table 4.4.2 – Impacts on Specific Social Safety Nets

Dependent Variable	Endline Impact (1)	Midline Impact (2)	Impact Diff (EL-ML) (3)=(1)-(2)	Baseline Treated Mean (4)	Endline Treated Mean (5)	Endline Control Mean (6)
Free maize	-0.110	-0.080	-0.029	0.162	0.020	0.074
	(-1.26)	(-1.15)	(0.71)			
Quantity of Free Maize (kg)	-13.978	-12.386	-1.592	20.674	0.702	5.323
	(-1.02)	(-0.97)	(0.25)			
Other free food	-0.143**	-0.074	-0.069*	0.154	0.054	0.118
	(-2.09)	(-1.14)	(1.99)			
Value of Other free food	-306.485	-41.966	-264.519	988.138	203.563	434.956
	(-0.34)	(-0.05)	(1.19)			
Food/Cash for work	0.008	-0.013	0.021	0.065	0.009	0.019
	(0.46)	(-0.87)	(1.33)			
Value of Food/Cash for work	3.884	-144.391**	148.275	289.692	49.417	83.475
	(0.05)	(-2.10)	(1.64)			
School Feeding	-0.068	-0.043	-0.025	0.161	0.133	0.140
	(-1.24)	(-1.24)	(0.45)			
Value of School Feeding	-569.197	-438.594	-130.603	989.345	1,022.740	1,216.213
	(-1.04)	(-1.35)	(0.23)			
Community Based Childcare	0.005	0.006	-0.002	0.026	0.021	0.014
	(0.31)	(0.29)	(0.12)			
Value of Community Based Childcare	6.629	-48.403	55.032	128.140	112.316	57.279
	(0.09)	(-0.58)	(0.91)			
N	9,901	9,901		1,576	1,575	1,726

Notes: : Estimations use difference-in-differences modelling among panel households. Binary outcomes are estimated using LPM. See Table 4.1.1 for additional explanatory notes on model specification, including a list of control variables utilized. * 10% significance ** 5% significance; *** 1% significance

We first analyze the household labour constraint situation at baseline. A household is defined as severely labour constrained if it has no member fit to work (FTW). A person is considered fit to work if person is aged between 19 and 64 years, and has no chronic illness or disability, or is otherwise unable to work. If a household has at least one member FTW and the ratio of not fit to work (NFTW) members to FTW member is greater than or equal to 3, then the household is considered moderately labour constrained. A household is labour unconstrained only if the ratio of NFTW to FTW members is less three. The labour constraint classification is purely a function of the household's own demography, and it is important to add that this classification does not take into consideration the ability of the household to engage hired labour or rely on exchange labour. Additionally, there are less labour intensive income generating activities which household members with chronic conditions or disability, or who are older than 64 years of age could engage in. Accordingly, analysis of actual labor supply extends beyond labour supplied by those who are FTW. Table 4.5.1 shows the distribution of households and household members living in each of these household types at baseline. About 29 per cent of households were moderately labour constrained, but these accounted for 39 per cent of individuals. Severely labour constrained households made up 54 per cent of household count and contained 42 per cent of individuals. Overall, there is balance between treatment and control, and this is discussed in greater detail in the main report. Figure 4.5.1 shows the proportion of the sample FTW by age. As expected, the share of FTW decreases with age, and the distribution is essentially identical for T and C.

Next, we examine the impact of the SCTP on household labour constraint. There are a number of pathways through which the SCTP could influence how household labour constrain status would evolve. If SCTP households are able to 'attract' new household members FTW, then this would improve the labour constrain status of the household. For example if a 65 year old single member is now able to attract a caregiver to live with because of the improved financial situation, then the labour constrain status changes immediately from severely constrained to unconstrained. Similarly SCTP households may be more able to avert the departure of household members when they are faced with a shock. The result of such effect on household welfare is ambiguous since there could be both negative and positive effects and the outcome depends on which of the effects dominates.

Table 4.5.1 – Baseline Labour Constraint Status at Household and Individual Levels

	Household			Individuals		
Status	C	T	Total	C	T	Total
Unconstrained	18.29	16.15	17.28	19.93	17.83	18.94
Moderately Constrained	29.52	28.49	29.03	39.34	39.00	39.18
Severely Constrained	52.19	55.36	53.70	40.74	43.17	41.88
Total	100.00	100.00	100.00	100.00	100.00	100.00

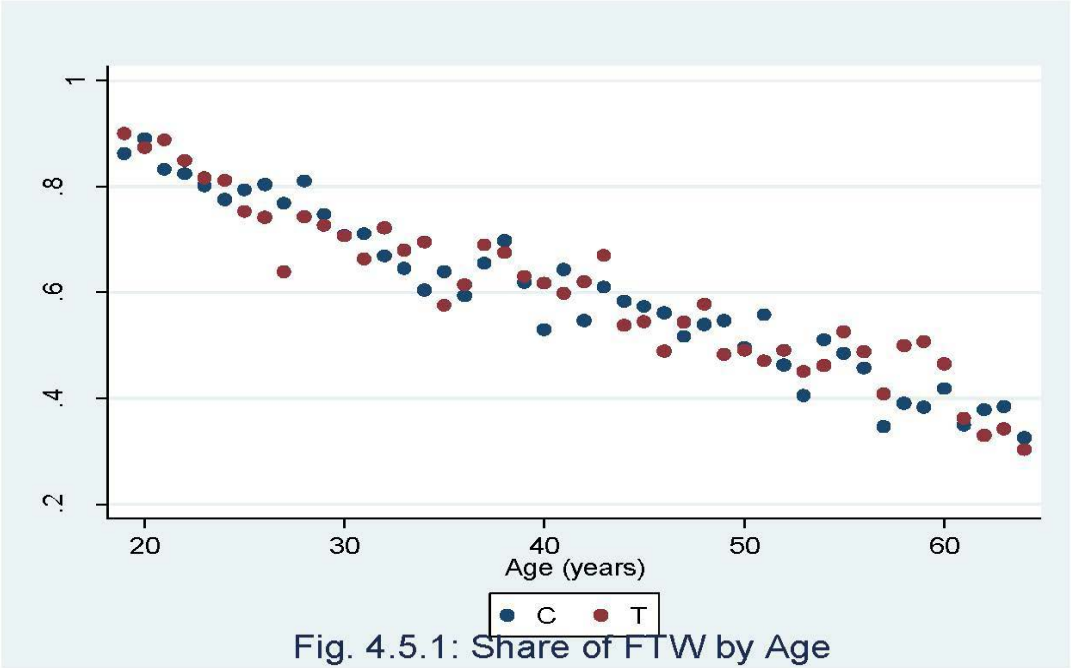


Fig. 4.5.1: Share of FTW by Age

Analysis shows that there were no impacts on the number of household members FTW, number of males FTW, share of households severely labour constrained and share of households labour constrained (moderately or severely). Impacts on the number of female members FTW and share of households moderately labour constrained were only marginally significant at the 10 per cent level (Table 4.5.2). Thus, it can be argued that changing labour constraint is not a plausible mechanism through which the SCTP could impact other outcomes.

Table 4.5.2 – Impacts on Labour Supply

Dependent Variable	Endline Impact	Midline Impact	Impact Diff (EL-ML)	Baseline Treated Mean	Endline Treated Mean	Endline Control Mean
	(1)	(2)	(3)=(1)-(2)	(4)	(5)	(6)
Total Members FTW	0.043	0.018	0.025	0.621	0.735	0.750
	(0.97)	(0.42)	(0.70)			
Males FTW	-0.020	-0.038*	0.019	0.235	0.296	0.299
	(-0.73)	(-1.83)	(1.11)			
Females FTW	0.062*	0.056*	0.006	0.385	0.439	0.451
	(2.02)	(1.88)	(0.24)			
Severely Labour Constrained	-0.035	-0.037	0.002	0.564	0.503	0.483
	(-1.27)	(-1.34)	(0.11)			
Moderately Labour Constrained	0.038*	0.012	0.026*	0.279	0.304	0.305
	(2.02)	(0.60)	(1.83)			
Labour Constrained	0.003	-0.025	0.028	0.843	0.806	0.788
	(0.16)	(-1.26)	(1.50)			
N	9,906	9,906		1,576	1,576	1,726

Notes: Estimations use difference-in-differences modelling among panel households. Binary outcomes are estimated using LPM. See Table 4.1.1 for additional explanatory notes on model specification, including a list of control variables utilized. * 10% significance ** 5% significance; *** 1% significance

We further examine the impacts on labour use for household chores and economic activities at the household level. Chores include time spent collecting water, time spent collecting firewood and time spent taking care of children, cooking or cleaning. We find no impacts on time spent on all household chores, own farm activities, fishing and then livestock activities. However, the number of hours in the last seven days spent on casual part time work reduces from 11 to 6 hours among T households with a significant impact of a four hour reduction. We also find a significant impact of three months decrease on the amount of time spent doing casual labour for others (ganyu work) in the last 12 months.We also find an impact of more than one hour increase in the amount of time spent on work outside of the household (excluding ganyu). Finding no impacts on the time spent on livestock production activities is quite surprising in view of the huge impacts on livestock production at both the extensive and intensive margins. This could be an indication of increasing returns to scale, particularly for households which raised livestock at baseline, or through the use of hired labour. To further explore the dynamics of labour use, we examine labour use for each of the main activities to try and see if there are any shifts that still keep the overall time use unchanged despite the significant increases in crop production. We also examine the possible role for the use of hired labour in this dynamic. Table 4.5.4 shows the impacts on household and hired labour use for the various farm activities: land preparation and planting, farm management (weeding, fertilizing, etc) and harvest. Here we find no impacts on household re-allocation of labour among the activities, but we find significant impacts on the use of hired labour at both the intensive and extensive margins. There is a three pp impact increase in the proportion of households using hired labour. We also find that hired labour is mostly utilized for land preparation and planting.

Table 4.5.3 – Impacts on Labour Use by Activity

Dependent Variable	Endline Impact (1)	Midline Impact (2)	Impact Diff (EL-ML) (3)=(1)-(2)	Baseline Treated Mean (4)	Endline Treated Mean (5)	Endline Control Mean (6)
All Chores (Hours Yesterday)	0.146	0.045	0.101	8.178	8.448	8.280
	(0.20)	(0.07)	(0.19)			
Own Farm Activities (Days in Past Season)	6.795	-0.560	7.355	87.342	100.023	91.613
	(0.84)	(-0.06)	(0.96)			
Fishing (Days in Last 7 Days)	-0.079	-0.098	0.019	0.033	0.032	0.161
	(-1.10)	(-1.15)	(0.30)			
Non-Farm Enterprise (Hours in Last 7 Days)	0.406	-0.735	1.140**	3.365	1.726	1.256
	(0.35)	(-0.78)	(2.50)			
Livestock Activities (Hours in Last 7 Days)	0.349	0.057	0.292	0.783	1.388	0.718
	(1.10)	(0.19)	(0.81)			
Casual, Part time activities (Hours in Last 7 Days)	-3.994***	-3.500**	-0.494	10.716	5.778	9.948
	(-3.51)	(-2.16)	(0.35)			
Ganyu Work (Months in last 12 Months)	-3.307**	-2.921**	-0.386	7.376	6.268	9.107
	(-2.75)	(-2.59)	(0.34)			
Work Outside Household excluding Ganyu (Hours in Last 7 Days)	1.003**	0.570	0.433	0.747	0.695	1.062
	(2.07)	(1.28)	(1.07)			
N	9,906	9,906		1,576	1,576	1,726

Notes: Estimations use difference-in-differences modelling among panel households. Binary outcomes are estimated using LPM. See Table 4.1.1 for additional explanatory notes on model specification, including a list of control variables utilized. * 10% significance ** 5% significance; *** 1% significance

This is reasonable in view of the fact that land preparation and planting is mostly time bound and requires a lot of upfront input to set the stage for the rest of the season.

Finally, we examine labour allocation across the various activities by broad age-sex groups, namely males FTW, Females FTW, All Men (aged 18-64 years), Elderly (men and women aged 64 years or older) and children (males or females aged 6-17 years). Overall, the pattern of labour allocation is very similar

Table 4.5.4 – Impacts on Household and Hired Farm Labour

Dependent Variable	Endline Impact (1)	Midline Impact (2)	Impact Diff (EL-ML) (3)=(1)-(2)	Baseline Treated Mean (4)	Endline Treated Mean (5)	Endline Control Mean (6)
HH Lab. for Land Preparation and Planting (Days in Past Season)	0.863	0.797	0.066	46.990	53.300	51.303
	(0.21)	(0.16)	(0.02)			
HH Lab. for Field Management (Days in Past Season)	5.018	-0.849	5.868	33.044	37.982	33.059
	(1.22)	(-0.17)	(1.47)			
HH Lab for Harvesting (Days in Past Season)	0.914	-0.508	1.422	7.308	8.741	7.251
	(1.17)	(-0.54)	(1.41)			
Any Hired Farm Labour	0.030**	0.011	0.019	0.044	0.074	0.033
	(2.08)	(1.13)	(1.56)			
Hired Farm Labour (Days in Past Season	0.475*	0.123	0.352	0.800	1.030	0.497
	(1.94)	(0.36)	(1.09)			
Hired Lab for Land Preparation and Planting (Days in Past Season)	0.266**	0.127	0.139	0.349	0.476	0.236
	(2.23)	(0.92)	(0.96)			
Hired Lab for Field Management (Days in Past Season)	0.162	-0.005	0.167	0.305	0.474	0.227
	(1.18)	(-0.03)	(1.11)			
Hired Lab for Harvesting (Days in Past Season)	0.047	-0.000	0.047	0.145	0.081	0.034
	(0.55)	(-0.00)	(0.59)			
N	9,901	9,901		1,576	1,574	1,726

Notes: Estimations use difference-in-differences modelling among panel households. Binary outcomes are estimated using LPM. See Table 4.1.1 for additional explanatory notes on model specification, including a list of control variables utilized. * 10% significance ** 5% significance; *** 1% significance

to the pattern in Table 4.5.3. There are no impacts on labour allocation for all household chores, farm activities, fishing and NFE activities. There is an impact on labour allocation to livestock activities by FTW males, but this is significant only at the 10 per cent level. We also do not find impacts on female withdrawal from casual part time activities, or intensification in work outside the household (excluding ganyu). There is a significant negative impact (positive outcome) in children participation in ganyu work.

Table 4.5.5 – Endline Impacts on Intra-Household Labour Allocation

Dependent Variable	Members FTW	Males FTW	Females FTW	All Mem. 18-64	Elderly (64+)	Children (6-17)
All Chores (Hours Yesterday)	0.280	0.140	0.075	0.054	0.178	-0.016
	(1.10)	(0.68)	(0.20)	(0.20)	(0.96)	(-0.08)
Own Farm Activities (Days in Past Season)	3.857	1.630	4.555	2.779	3.568	1.348
	(1.02)	(0.46)	(1.05)	(0.81)	(1.29)	(1.10)
Fishing (Days in Last 7 Days)	-0.053	-0.111	-0.002	-0.014	-0.015	-0.016
	(-1.00)	(-0.84)	(-0.12)	(-0.47)	(-1.06)	(-1.21)
Non-Farm Enterprise (Hours in Last 7 Days)	0.138	-0.054	0.236	0.206	-0.281	0.126
	(0.21)	(-0.08)	(0.29)	(0.40)	(-0.75)	(0.67)
Livestock Activities (Hours in Last 7 Days)	0.231	0.242*	0.245	0.194	-0.062	0.085
	(1.44)	(1.91)	(1.04)	(1.53)	(-0.32)	(1.11)
Casual, Part time activities (Hours in Last 7 Days)	-1.872**	-2.762**	-1.206	-1.665**	-0.373	-0.610***
	(-2.37)	(-2.06)	(-1.54)	(-2.27)	(-0.82)	(-2.86)
Ganyu Work (Months in last 12 Months)	-1.309**	-1.313*	-1.324*	-1.266**	-0.501	-1.096
	(-2.09)	(-1.89)	(-1.94)	(-2.25)	(-0.88)	(-1.67)
Work Outside Household excluding Ganyu (Hours in Last 7 Days)	0.817**	1.771*	0.300	0.530*	0.471*	0.080
	(2.09)	(1.74)	(0.99)	(2.00)	(1.78)	(1.01)
N	7,055	2,683	4,372	12,042	6,182	21,618

Notes: Estimations use difference-in-differences modelling among panel households. Binary outcomes are estimated using LPM. See Table 4.1.1 for additional explanatory notes on model specification, including a list of control variables utilized. * 10% significance ** 5% significance; *** 1% significance

4.6 Impacts on Shocks and Coping

Perhaps more directly related to the issue of resilience is the actual experience of shocks and how the households cope when they experience such shocks. Respondents were asked whether they were negatively affected by a series of shocks and their response to try and maintain their standard of livelihood. These shocks are categorized as covariate shocks (which typically affect the entire community – such as droughts, floods/landslides) and idiosyncraticshocks, which are more household

specific (such as death of the main income earner in the household, sickness, theft of money, etc.). Coping to these shocks could usually include a mix of strategies some of which are negative (reducing consumption or sending children out to work), positive (relying on own savings/SCTP payment, receiving unconditional help from social networks), or ambiguous depending on the extent of the response (e.g. labour intensification could be positive or negative depending on the initial level and thresholds). In Table 4.6.1, we summarize the impacts of the SCTP on the experience of the aggregate shocks and the use of positive and negative coping strategies. We find no impacts of the SCTP on the experience of any negative shock, and on either covariate or idiosyncratic shocks. This is largely expected since the SCTP cannot per se avert the occurrence of many of the shocks listed. However, consistent with expectation, we find a significant 26 pp impact on the share of positive coping strategies and a significant negative impact of 23 pp on the share of negative coping strategies adopted. These two categories are not necessarily substitutes since households typically employ a mix of strategies. At the endline, we also enquired about whether households had experienced any positive shocks such as an inheritance, better

Table 4.6.1 – Impacts on Shocks and Coping

Dependent Variable	Endline Impact (1)	Midline Impact (2)	Impact Diff (EL-ML) (3)=(1)-(2)	Baseline Treated Mean (4)	Endline Treated Mean (5)	Endline Control Mean (6)
Any Negative Shock	-0.045	0.016	-0.061	0.953	0.858	0.916
	(-1.41)	(0.39)	(1.19)			
No. of Shocks	-0.053	0.079	-0.132	2.516	2.248	2.363
	(-0.29)	(0.40)	(0.57)			
Any Covariate Shock	-0.061	0.016	-0.078	0.923	0.828	0.894
	(-1.32)	(0.27)	(1.28)			
Number of covariate shocks	-0.029	0.045	-0.074	2.118	1.783	1.803
	(-0.18)	(0.22)	(0.37)			
Any Idiosyncractic Shock	0.002	0.023	-0.022	0.266	0.138	0.166
	(0.04)	(0.61)	(0.77)			
Number of idiosyncratic shocks	-0.011	0.019	-0.030	0.309	0.156	0.200
	(-0.20)	(0.40)	(0.88)			
Share of Positive Coping Strategies	0.259***	0.152**	0.106	0.421	0.695	0.404
	(3.74)	(2.09)	(1.14)			
Share of Negative Coping Strategies	-0.232***	-0.063	-0.169**	0.245	0.290	0.493
	(-4.02)	(-1.01)	(2.36)			
N	8,722	8,722		1,508	1,383	1,594

Notes: Estimations use difference-in-differences modelling among panel households. Binary outcomes are estimated using LPM. See Table 4.1.1 for additional explanatory notes on model specification, including a list of control variables utilized. * 10% significance ** 5% significance; *** 1% significance

Table 4.6.2 – Impacts on Specific Shocks

Dependent Variable	Endline Impact (1)	Midline Impact (2)	Impact Diff (EL-ML) (3)=(1)-(2)	Baseline Treated Mean (4)	Endline Treated Mean (5)	Endline Control Mean (6)
Drought/irregular rains	-0.077	-0.013	-0.064	0.603	0.596	0.629
	(-1.04)	(-0.14)	(0.93)			
Unusually high level of crop/livestock pest/disease	0.023	0.016	0.006	0.098	0.073	0.076
	(0.59)	(0.37)	(0.17)			
Unusually high prices of food	0.044	0.029	0.014	0.839	0.693	0.666
	(0.91)	(0.44)	(0.19)			
Serious illness or accident to household member(s)	-0.005	0.007	-0.011	0.177	0.085	0.095
	(-0.15)	(0.22)	(0.56)			
Death of household income earner(s)	-0.011	-0.005	-0.006	0.039	0.026	0.039
	(-0.95)	(-0.55)	(0.72)			
N	9,902	9,902		1,576	1,575	1,726

Notes: Estimations use difference-in-differences modelling among panel households. Binary outcomes are estimated using LPM. See Table 4.1.1 for additional explanatory notes on model specification, including a list of control variables utilized. * 10% significance ** 5% significance; *** 1% significance

pay/job or death of a chronically ill household member (on whom the household had to make a lot of expenses). We find no cross-sectional difference in the experience of positive shocks between T and C households as well.

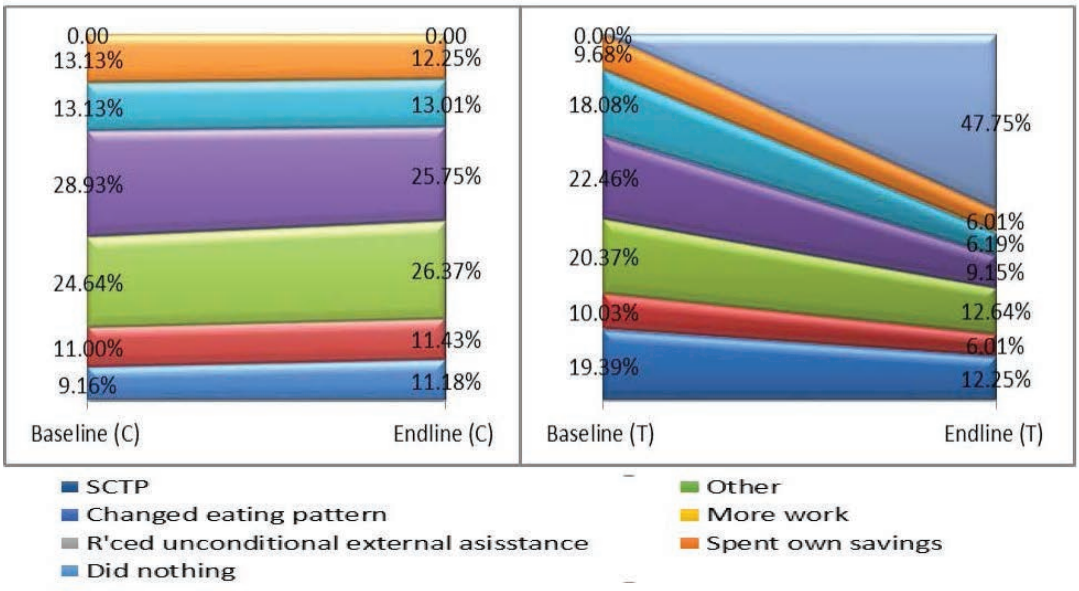
Table 4.6.2 gives the impacts on the specific shocks. We find no impacts on the proportion of households that experienced any of the specific shocks in the 12 month period preceding the surveys. Perhaps the one shock the SCTP could have affected is the death of a household income earner through improved health seeking behaviour, but the incidence of this is quite low and also likely to suffer from ceiling effects. The impacts on the specific coping strategies are given in Table 4.6.3. We find a significant

Table 4.6.3 – Impacts on Coping Strategies

Dependent Variable	Endline Impact (1)	Midline Impact (2)	Impact Diff (EL-ML) (3)=(1)-(2)	Baseline Treated Mean (4)	Endline Treated Mean (5)	Endline Control Mean (6)
Did nothing	-0.131	-0.022	-0.109	0.217	0.222	0.352
	(-1.37)	(-0.24)	(1.35)			
Own savings	-0.082	-0.085	0.003	0.191	0.080	0.175
	(-1.49)	(-1.37)	(0.05)			
R'ced external assistance	-0.221***	-0.077	-0.144**	0.499	0.198	0.354
	(-4.35)	(-1.07)	(2.48)			
More work	-0.245***	-0.196***	-0.049	0.457	0.134	0.366
	(-3.54)	(-3.50)	(0.83)			
Borrowed	-0.045**	-0.009	-0.036**	0.027	0.032	0.066
	(-2.60)	(-1.02)	(2.12)			
Household members moved out	-0.007	-0.005	-0.002	0.006	0.006	0.014
	(-1.38)	(-0.76)	(0.27)			
Changed eating pattern	-0.197***	-0.054	-0.142***	0.222	0.109	0.297
	(-3.21)	(-1.24)	(3.13)			
N	8,720	8,720		1,508	1,383	1,594

Notes: Estimations use difference-in-differences modelling among panel households. Binary outcomes are estimated using LPM. See Table 4.1.1 for additional explanatory notes on model specification, including a list of control variables utilized. * 10% significance ** 5% significance; *** 1% significance

Figure 4.6.1 - Strategies for coping with negative shocks(aggregate shares)



negative impact of 20 pp on the proportion of households that had to cope by changing eating pattern (relying on less preferred food options, reducing food proportions or number of meals per day). We also find a five pp impact reduction on the use of borrowing as a coping strategy to shocks. The mix of coping strategies, including the role of SCTP is depicted in Fig. 4.6.1.

4.7 Impacts on Consumption and Food Security

The overarching objective of the SCTP is to mitigate the effects of poverty by ensuring food security and maintaining consumption. Adequate consumption and food security are not only essential for survival, but are also instrumental for wellbeing and particularly important for child growth and development. We estimate the impacts on consumption using total annual per capital consumption at the household level. Table 4.7.1 shows the impacts on household consumption expenditures. There is a MWK 10380 impact on overall per capita consumption and a MWK 7920 impact on food expenditures. Computations use the national poverty and ultra-poverty lines provided by the National Statistics Office (NSO). Details of the poverty lines and inflation factors to account for the timing of the surveys are found in the main impact evaluation report (Handa et al, 2016).

A breakdown of food consumption by the major food groups reveals a decrease in the share of expenditure on cereals and an increase in the share of the expenditure on meats and beverages. This shift may be an indication of a shift in preference, but also reflects a quality-for-quantity substitution that augurs well for household nutritional balance. A simple measure of dietary diversity – a count of the number of the broad categories a household meal typically comes from – shows significant increase

Table 4.7.1 – Impacts on Household Consumption Expenditures

Dependent Variable	Endline Impact	Midline Impact	Impact Diff (EL-ML)	Baseline Treated Mean	Endline Treated Mean	Endline Control Mean
	(1)	(2)	(3)=(1)-(2)	(4)	(5)	(6)
Per capita expenditure	10,380.358***	4,627.682	5,752.676**	45,845.828	54,025.969	41,306.919
	(4.29)	(1.55)	(2.40)			
Food expenditures	7,920.807***	2,121.136	5,799.671***	34,804.042	40,577.144	30,586.176
	(4.20)	(0.93)	(3.01)			
	(1.75)	(1.42)	(0.56)			
Clothing expenditures	692.732***	730.565***	-37.833	376.021	1,081.369	277.493
	(7.29)	(5.87)	(0.37)			
Housing expenditures	-241.855	-283.815	41.961	5,251.642	5,467.615	5,473.656
	(-0.52)	(-1.17)	(0.10)			
Furnishings	568.801***	653.925***	-85.124	1,244.229	1,655.791	1,002.999
	(4.55)	(6.02)	(0.59)			
Health expenditures	-5.642	443.215	-448.857	1,490.464	1,773.787	1,755.153
	(-0.02)	(1.43)	(1.51)			
Communication expenditures	-0.396	-6.598	6.202	49.906	84.628	82.998
	(-0.01)	(-0.26)	(0.18)			
Recreation expenditures	-0.931	-3.502	2.571	4.475	3.930	2.103
	(-0.32)	(-1.03)	(0.77)			
Education expenditures	202.381***	198.167***	4.214	330.936	503.493	328.249
	(3.19)	(3.55)	(0.07)			
Misc Goods & Services expenditures	428.084***	280.834***	147.250*	707.277	1,147.720	680.000
	(4.28)	(3.78)	(1.72)			
N	9,775	9,775		1,559	1,530	1,707

Notes: Estimations use difference-in-differences modelling among panel households. Binary outcomes are estimated using LPM. See Table 4.1.1 for additional explanatory notes on model specification, including a list of control variables utilized. * 10% significance ** 5% significance; *** 1% significance

in dietary diversity (Table 4.7.2). We also find a significant positive impact on the food consumption score (FCS) – a composite score based on dietary diversity and the relative nutritional importance of different food groups. Finally, there is also a significant positive impact on the Simpson's Index of Dietary diversity – an index that takes into account not only the count of the food groups, but also the expenditure shares allocated to each group. The computations of the FCS and the Simpson's diversity index follows WFP and FAO methodology[6].

[6] See for example: Elliot Vhurumku: Food Security Indicators - Integrating Nutrition and Food Security Program-

Table 4.7.2 – Impacts on Dietary Diversity, FCS and Simpson's Index

Dependent Variable	Endline Impact (1)	Midline Impact (2)	Impact Diff (EL-ML) (3)=(1)-(2)	Baseline Treated Mean (4)	Endline Treated Mean (5)	Endline Control Mean (6)
Dietary Diversity	1.205***	0.378	0.827***	5.820	6.912	5.620
	(4.11)	(1.42)	(2.98)			
Food Consumption Score	2.298***	0.679	1.619***	8.260	10.369	7.975
	(4.49)	(1.45)	(3.58)			
Simpson's Diversity Index	0.066***	0.022	0.045**	0.594	0.661	0.580
	(3.48)	(1.01)	(2.41)			
N	9,906	9,906		1,576	1,576	1,726

Notes: Estimations use difference-in-differences modelling among panel households. Binary outcomes are estimated using LPM. See Table 4.1.1 for additional explanatory notes on model specification, including a list of control variables utilized. * 10% significance ** 5% significance; *** 1% significance

Table 4.7.3 – Food Security – Enough Food and Meals per Day

Dependent Variable	Endline Impact (1)	Midline Impact (2)	Impact Diff (EL-ML) (3)=(1)-(2)	Baseline Treated Mean (4)	Endline Treated Mean (5)	Endline Control Mean (6)
Worried about having enough food for past 7 days	-0.204***	-0.113**	-0.091**	0.839	0.698	0.899
	(-3.20)	(-2.39)	(2.10)			
Number of meals eaten per day	0.294***	0.184***	0.110**	1.906	2.227	1.954
	(5.92)	(4.18)	(2.32)			
Eats more than 1 meal per day	0.136***	0.077***	0.059**	0.794	0.936	0.816
	(4.20)	(3.09)	(2.42)			
N	9,769	9,769		1,559	1,528	1,704

Notes: Estimations use difference-in-differences modelling among panel households. Binary outcomes are estimated using LPM. See Table 4.1.1 for additional explanatory notes on model specification, including a list of control variables utilized. * 10% significance ** 5% significance; *** 1% significance

On food security, we were interested to know whether households were about having enough food, number of meals eaten per day, and whether household eat more than one meal per day. We find an impact of 20 pp reduction in the share of households worried about having enough to eat in the past 7 days, and a 14 pp impact on the share of households eating more than 1 meal per day (Table 4.7.3).

5. Household Resilience Capacity and Structure

This section of the report focuses on the estimation of household resilience capacity index and analysis of its structure and validity. The method for estimating the resilience index follows the FAO RIMA II model[7]. It must be stated that while the SCTP evaluation survey instruments were not explicitly designed with the RIMA II model in mind,we have enough variables that match all the RIMA II indicators and constructs quite closely. In addition, having actual data on shocks and coping strategies allows for some validity test which may be elusive for most studies. The panel data also allows for both contemporaneous and lagged analysis of the predictive power of the resilience capacity index for food security and responses to shocks.

5.1 The FAO RIMA II model, indicators and the SCTP instrument

The RIMA II model assumes resilience as a latent construct with multiple predictors and multiple outcomes. The predictors are grouped into four main categories called pillars. The pillars are namely access to basic services (ABS), ownership of assets (AST), social safety nets (SSN) and household

ming for Emergency response workshop, 25 to 17 February 2014.

[7] Resilience Index Measurement and Analysis – II. Food and Agricultural Organization of the United Nations. Rome 2016.

adaptive capacity (AC).Each pillar is a latent variable of itself determined by a number of household level indicators. The household is considered the unit of analysis because it is the unit of decision making for household production and consumption. The outcomes are per capita food consumption and the Simpson's Dietary Diversity Index. For the pillar of ABS, we do not have any direct measures to construct in index. However, since we are mostly concerned about resilience profiles for T and C households, it is reasonable to assume that, by design, C and T households are equally clustered in terms of this covariate dimension of resilience. For the other pillars, Table 5.1.1 shows the typical indicators that FAO considers for each pillar and the corresponding indicators that we have available from the SCTP instrument.

The outcome variables of per capita food expenditure and the Simpson's index are identical, so are the AST indicators of asset ownership (agricultural and non-agricultural) and livestock. For SSN, we have total in-kind transfers, credit constraint and perceived available support in times of need. Credit constraint and perceived available support captures a potential for support when shocks set in, and these are more relevant for measuring resilience. We recognize a potential downside to using the variable of in-kind assistance as a measure of resilience. Households that are better off by themselves may have little in-kind assistance, especially in 'normal' times, and so the indicator of whether support can be activated when needed is likely a more appropriate ex-ante measure. On AC, we have an indicator on number of income sources and the ratio of FTW to NFTW. Ideally, we would prefer to have the total income from each of these domains as a more direct measure of capacity and importance to household livelihood. We also have a binary variable of whether the household is crop production only household, or it does crop production with other income generating activities. Each measured variable is constructed to be positive that such more is better, and for binary variables, the better outcome is coded as 1.

Table 5.1.1 – RIMA Domain Indicators by FAO and SCTP Equivalents

Domain	FAO suggested indicators	SCTP Equivalents/Proxies
Outcome Indicators	Average per person daily income, Average per person daily expenditure, Food consumption score/other nutrition proxy, dietary diversity and food frequency score, dietary energy consumption	V1. Per capita food expenditure V2. Simpson's Diversity Index
AST	Agric assets, Non-Agric Assets, TLU, Land owned	V3. 'Wealth' index of agric assets, durable goods, housing& household characteristics V4. Per capita TLU owned V5. Per capita Total Land Cultivated
SSN	Amount of cash and in-kind assistance, Social Networks, Frequency of assistance, Formal/Informal Transfers	V6. Log of total in-kind transfers V7. Log of value of free maize V8. Credit Constraint, V9. Perceived available support in times of need
AC	Diversity of income sources, Educational level (household average), Employment ratio, Available coping strategies	V10. Number of income sources V11. Ratio of FTW to NFTW, V12. Not Crop production only household

5.2 Model Estimation and Summary Results

Empirically, the Resilience Capacity Index (RCI) is estimated using the Multiple Indicator and Multiple Outcome model (MIMIC) in a structural equation framework. The RIMA model is estimated using structural equation model based on the conceptual path diagram in Fig. 5.2.1. Each pillar is separately estimated using factor analysis of the variables that make up the dimension.The predicted value of each of the components is standardized to range from 0-100 and in-turn used to construct the RCI in the MIMIC model. In the MIMIC estimation, several approaches are used to estimate the weights as check for robustness and also try to eliminate any bias on the weights due to the treatment. Weights are generated using only the C households at baseline and endline, or only baseline data for T and C, or baseline for T and C and endline for C, and using all the data. The results are robust under all specifications and so we proceed with the model that uses all the data since this is recommended. Tables 5.2.1a, 5.2.1b and 5.2.1c give a summary of the MIMIC estimation. Table 5.2.1a gives the standardized coefficients of the pillars, the Z values and the significance. We find that each of the pillars is significant in the model at the one per cent level of significance. Table 5.2.1b gives the standardized coefficients to the reflective indicators. The coefficient of per capita consumption is standardized to one to make the coefficient of the Simpson's index interpretable. We find that a 1 unit increase in the RCI results in a 0.13 increase in the standard deviation of the Simpson's index.

The summary model fit statistics indicate that the chi-square value is significant at the 1 per cent level. The root mean square estimate of approximation is 0.0947 and the p-value indicates that there is greater than the

Table 5.2.1a: Model Output on Formative Indicators (Pillars)

Covariate	Coefficient	Z	P>|z|
Assets, AST	0.1111	28.2887	0.0000
Social Safety Nets, SSN	0.0028	8.9865	0.0000
Adaptive Capacity, AC	0.0019	5.6091	0.0000

Table 5.2.1b: Model Output on Reflective Indicators (Food Security)

Covariate	Coefficient	Z	P>|z|
Log PC Food	1.0000		
Simpsons Food Diversity Index	0.1308	17.1302	0.0000

Table 5.2.1c: Summary Model Fit Statistics

N	Chi-Square (p-val)	RMSEA (p RMSEA<0.05)	CFI	TLI	CD
6,595	120.3428 (0.0000)	0.0947 (0.0000)	0.9301	0.7554	0.3607

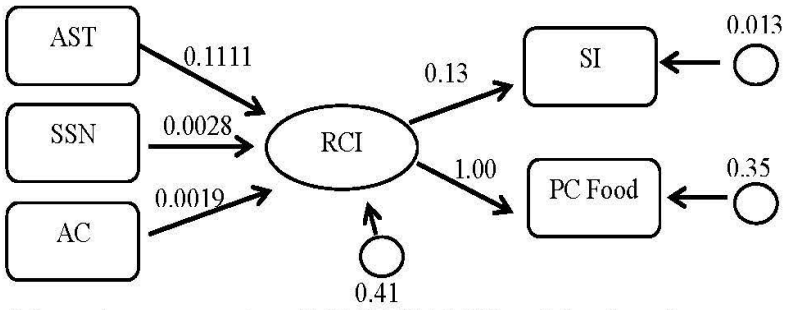


Fig. 5.2.1: Schematic representation of RIMA II MIMIC model and results.

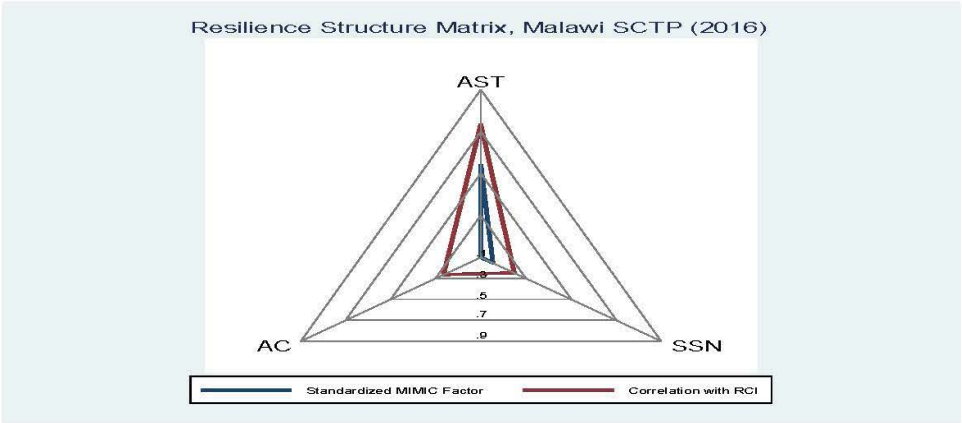


Fig. 5.2.2: Resilience structure matrix and correlation with RCI for Resilience Pillars

Table 5.2.2: Distribution of RCI by Treatment Status and Wave

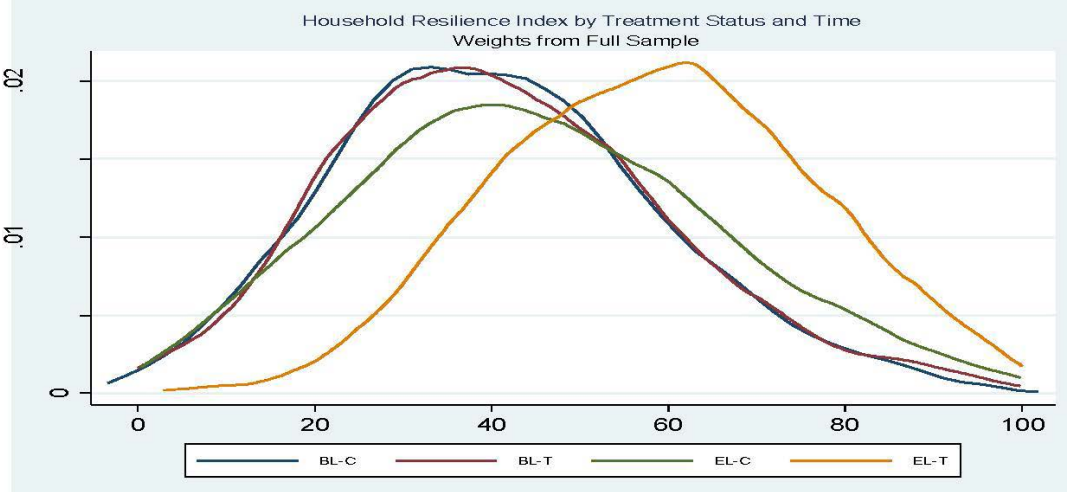
	Baseline			Endline		
Resilience Quintiles	C	T	Total	C	T	Total
Lowest	21.96	24.12	22.99	27.86	12.92	20.73
Second	22.40	18.93	20.75	19.15	15.40	17.36
Middle	18.83	19.22	19.02	17.88	19.73	18.76
Fourth	17.70	18.69	18.17	17.30	22.79	19.91
Highest	19.10	19.04	19.08	17.82	29.15	23.22
Total	100.00	100.00	100.00	100.00	100.00	100.00

Table 5.2.3: Impacts on Resilience Capacity Index (Overall and Heterogeneous)

Dependent Variable	Endline Impact (1)	Baseline Treatment Mean (2)	Baseline Control Mean (3)	Endline Treated Mean (4)	Endline Control Mean (5)
Full Sample	12.432***	42.144	41.493	58.457	45.076
	(7.67)				
N	6,472	1,556	1,686	1,532	1,698
Baseline poorest 50%	14.516***	28.249	28.114	54.380	38.462
	(9.87)				
N	3,283	780	853	785	865
Baseline Small Households	11.797***	48.970	48.854	62.482	49.456
	(6.28)				
N	3,188	782	826	753	827
Baseline Labour Constrained Households	13.144***	41.806	40.952	58.189	44.073
	(7.88)				
N	5,236	1,302	1,369	1,231	1,334

Notes: Estimations use difference-in-differences modelling among panel households. Binary outcomes are estimated using LPM. See Table 4.1.1 for additional explanatory notes on model specification, including a list of control variables utilized. * 10% significance ** 5% significance; **** 1% significance.

Figure 5.3 – RCI by treatment status and time



recommended threshold of 0.05. However, there is no universal agreement on these quality fit threshold. The CFI and the TLI are both appreciable high to indicate a good fit. Fig. 5.2.1 shows the diagrammatic representation of the model results. Fig. 5.2.2. gives a radar plot of the resilience structure matrix and correlation of pillars with RCI.

Table 5.2.2 gives a summary of the RCI scores for T and C groups at baseline and at endline, and this is depicted with the kernel density in Fig. 5.2.3. We find a clear increase in the distribution of the resilience scores

for the T group at endline compared to the near identical resilience distribution of C and T at baseline. Table 5.2.3 gives the impact estimation results on resilience for the overall sample, baseline bottom 50 per cent of households, baseline small households, and baseline labour constrained households. We find that the impacts are significant for all groups.

5.3 Resilience Capacity and Coping with Shocks

To examine the predictive power of the resilience index, we further analyse the actual coping responses to shocks against the resilience index. The coping mechanism to shock was not an input to the determination of the resilience index and we would expect that more resilient households would tend to cope with positive responses as compared to less resilient households. Table 5.2.4 shows the distribution of the resilience and the share of positive coping responses to shocks at baseline and endline. The results show a high degree of agreement between the resilience scores and the share of positive responses to shocks that are adopted by households. At baseline, we find that the share of households adopting positive responses to shocks increases from 26 per cent for those in the lowest resiliency quintile to 59 percent for those in the highest resiliency quintile. This distribution is pretty much the same for C and T households. At endline, we find that the distribution of the share of households with positive coping responses to shocks stays essentially the same for C households as it was at baseline, but the share of households with positive coping responses to shocks is much higher

Table 5.2.4 – Share of Positive Coping Responses to Shocks by Resiliency Quintiles

	Baseline			Endline		
Resilience Quintiles	C	T	Total	C	T	Total
Lowest	0.23	0.29	0.26	0.25	0.63	0.37
Second	0.31	0.34	0.33	0.34	0.67	0.47
Middle	0.42	0.42	0.42	0.40	0.69	0.54
Fourth	0.49	0.47	0.48	0.51	0.76	0.64
Highest	0.59	0.59	0.59	0.62	0.77	0.71
Total	0.39	0.41	0.40	0.40	0.72	0.55

Figure 5.4 – Lowess graph of positive coping and RCI

at all quintiles for the T group, increasing from 63 per cent for those in the lowest quintile to 77 per cent for those in the highest quintile. A lowess graph of the RCI and share of positive coping strategies to shocks is further depicted in Fig. 5.4 and clearly shows the concomitant agreement between the RCI and positive coping with shocks.

Table 5.2.5 – Baseline resilience and endline food security among C households

Baseline RCI quintiles among C households	Endline Food Security Indicators			
	Mean PC Food (MWK)	No food worry	Simpson's Index	Food Consumption Score
Lowest	19790.400	0.053	0.526	6.281
Second	25427.950	0.057	0.582	7.934
Middle	34004.360	0.071	0.595	8.873
Fourth	39047.250	0.140	0.620	9.342
Highest	54268.380	0.205	0.668	9.703

5.4 Baseline Resilience and Endline Food Security among C Households

Another examination of the validity of the RCI is its predictive power of food security, regardless of the treatment. This is done by examining the effect of baseline resilience and endline food security among C households. As shown in Table 5.2.5, we find that endline food security generally increases with increasing baseline RCI. This also shows that the RCI has reasonable validity for use in predicting future food security and as ranking tool for targeting of interventions.

6. Summary and Conclusions

This paper has examined the impacts of Malawi's SCTP program on the concept of resilience. We find that the SCTP has positively impacted household production, asset ownership, income diversification and strengthening as hypothesized. The SCTP has not led to a reduction in labour supply by beneficiary households has is often a concern for unconditional cash transfers. We also find that the SCTP has not produced any "crowding-out" effect on pre-existing social safety nets, both public and private. There is increased per capita food consumption, dietary diversity and food security. Using the FAO RIMA II model, we estimate the impact of these dynamics of household resilience and find that although the SCTP was not explicitly designed with increasing resilience in mind, nonetheless, the SCTP has positively impacted resilience. Thus, there is reason to believe that cash transfer, even one that is unconditional, can produce positive impacts on household resilience.

We examine the validity of the resilience index by analysing its correlation with positive coping to shocks and find that increasing resilience is associated with positive coping to shocks. Additionally, by analysing only the C sample, we find that baseline resilience is predictive of endline food consumption and food security. This implies that the RCI can be used as a profiling and ranking tool for interventions.

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Annex A: Attrition Analysis Tables

A.1 Selective Attrition

Table A.1.1: Individual-Level Characteristics (Controls versus Treatment for Panel Households)

Variables	Control Mean	Control N1	Treatment Mean	Treatment N2	Mean Diff	Diff SE	p-value
Age (in years)	24.907	8,017	25.813	7,234	0.905	1.015	0.380
Child under-five	0.121	8,017	0.121	7,234	-0.000	0.009	0.980
Child ages 5-17	0.498	8,017	0.484	7,234	-0.014	0.012	0.241
Adult (18-64)	0.249	8,017	0.245	7,234	-0.004	0.014	0.749
Elderly (65 and older)	0.137	8,017	0.156	7,234	0.019	0.018	0.279
Orphan (one or both parents)	0.206	8,017	0.224	7,234	0.018	0.026	0.481
Female	0.571	8,017	0.572	7,234	0.001	0.007	0.913
Chronic illness	0.149	8,017	0.174	7,234	0.024	0.016	0.140
Any disability	0.007	8,017	0.006	7,234	-0.001	0.001	0.307
Currently in school	0.373	8,017	0.356	7,234	-0.017	0.022	0.450

Notes: Weighted results; standard errors obtained considering multi-stage sampling design

Table A.1.2: Main Respondent Characteristics (Control versus Treatment for Panel Households)

Variables	Control Mean	Control N1	Treatment Mean	Treatment N2	Mean Diff	Diff SE	p-value
Female	0.852	1,726	0.831	1,577	-0.021	0.022	0.345
Age (in years)	56.904	1,726	58.908	1,577	2.004	2.198	0.370
Widowed	0.419	1,726	0.440	1,577	0.022	0.036	0.551
Divorced/Separated	0.645	1,726	0.645	1,577	0.000	0.036	0.991
Currently in school	0.007	1,726	0.010	1,577	0.003	0.003	0.255
Ever attended school	0.296	1,726	0.298	1,577	0.001	0.054	0.982
Highest grade completed	3.587	549	3.624	531	0.037	0.269	0.891
Chronic illness	0.408	1,726	0.471	1,577	0.062	0.043	0.157
Any disability	0.011	1,726	0.012	1,577	0.001	0.004	0.826

Notes: Weighted results; standard errors obtained considering multi-stage sampling design

Table A.1.3: Household Demographic Characteristics (Control versus Treatment for Panel Households)

Variables	Control Mean	Control N1	Treatment Mean	Treatment N2	Mean Diff	Diff SE	p-value
Numbers of persons in household	4.579	1,726	4.533	1,577	-0.046	0.224	0.840
No. of children under 5	0.556	1,726	0.549	1,577	-0.007	0.059	0.912
No. of children 5-17	2.281	1,726	2.195	1,577	-0.086	0.132	0.519
Number of adults (18-64)	1.142	1,726	1.111	1,577	-0.031	0.105	0.766
Number of elderly (65+)	0.626	1,726	0.708	1,577	0.082	0.056	0.154
Number of orphans	0.943	1,726	1.017	1,577	0.074	0.126	0.563
Household has a disabled	0.033	1,726	0.027	1,577	-0.005	0.005	0.295
Number of working age (15-64)	1.493	1,726	1.469	1,577	-0.025	0.123	0.843
No. of dependents (<15 or >65)	3.085	1,726	3.064	1,577	-0.021	0.127	0.870
No. currently in school	1.707	1,726	1.614	1,577	-0.093	0.141	0.516
No. of persons per room	2.462	1,719	2.521	1,573	0.059	0.159	0.714

Notes: Weighted results; standard errors obtained considering multi-stage sampling design

Table A.2.1: Individual-Level Characteristics (Attriters versus Panel Households)

Variables	Attriters Mean	Attriters N1	Panel Mean	Panel N2	Mean Diff	Diff SE	p-value
Age (in years)	28.280	827	25.352	15,251	-2.927	1.426	0.049
Child under-five	0.138	827	0.121	15,251	-0.017	0.012	0.163
Child ages 5-17	0.442	827	0.491	15,251	0.050	0.020	0.019
Adult (18-64)	0.237	827	0.247	15,251	0.010	0.011	0.361
Elderly (65 and older)	0.193	827	0.146	15,251	-0.047	0.020	0.025
Orphan (one or both parents)	0.201	827	0.215	15,251	0.015	0.026	0.582
Female	0.594	827	0.571	15,251	-0.023	0.016	0.169
Chronic illness	0.203	827	0.161	15,251	-0.041	0.017	0.021
Any disability	0.007	827	0.007	15,251	-0.001	0.003	0.854
Currently in school	0.331	827	0.365	15,251	0.034	0.027	0.230

Notes: Weighted results; standard errors obtained considering multi-stage sampling design

Table A.2.2: Main Respondent Characteristics (Attriters versus Panel Households)

Variables	Attriters Mean	Attriters N1	Panel Mean	Panel N2	Mean Diff	Diff SE	p-value
Female	0.750	228	0.841	3,303	0.092	0.028	0.003
Age (in years)	59.918	228	57.894	3,303	-2.024	1.903	0.297
Widowed	0.482	228	0.429	3,303	-0.052	0.036	0.160
Divorced/Separated	0.666	228	0.645	3,303	-0.021	0.038	0.586
Currently in school	0.014	228	0.008	3,303	-0.005	0.006	0.415
Ever attended school	0.273	228	0.297	3,303	0.024	0.039	0.532
Highest grade completed	3.996	72	3.605	1,080	-0.391	0.359	0.286
Chronic illness	0.522	228	0.439	3,303	-0.082	0.028	0.007
Any disability	0.020	228	0.012	3,303	-0.009	0.009	0.334

Notes: Weighted results; standard errors obtained considering multi-stage sampling design

Table A.2.3: Household Demographic Characteristics (Attriters versus Panel Households)

Variables	Attriters Mean	Attriters N1	Panel Mean	Panel N2	Mean Diff	Diff SE	p-value
Numbers of persons in household	3.558	228	4.556	3,303	0.998	0.174	0.000
No. of children under 5	0.490	228	0.552	3,303	0.062	0.051	0.236
No. of children 5-17	1.572	228	2.238	3,303	0.667	0.135	0.000
Number of adults (18-64)	0.844	228	1.127	3,303	0.283	0.052	0.000
Number of elderly (65+)	0.687	228	0.667	3,303	-0.020	0.042	0.636
Number of orphans	0.713	228	0.980	3,303	0.266	0.111	0.023
Household has a disabled	0.026	228	0.030	3,303	0.004	0.011	0.684
Number of working age (15-64)	1.046	228	1.481	3,303	0.435	0.069	0.000
No. of dependents (<15 or >65)	2.511	228	3.075	3,303	0.564	0.128	0.000
No. currently in school	1.177	228	1.661	3,303	0.484	0.141	0.002
No. of persons per room	2.223	228	2.491	3,292	0.268	0.149	0.083

Notes: Weighted results; standard errors obtained considering multi-stage sampling design

Annex B: Variable Factor Loadings and Uniqueness

Table B1: AST Variables Factor Loadings and Uniqueness

Variable	Factor1	Factor2	Uniqueness
PC TLU	0.2843	0.1883	0.8837
PC Land Holding (Acres)	0.3040	-0.1821	0.8744
Wealth Index	0.4606	0.0039	0.7878

Table B2: SSN Variables Factor Loadings and Uniqueness

Variable	Factor1	Factor2	Factor3	Uniqueness
Perceived support	0.2565	0.1919	-0.0785	0.8912
Value of social network	0.5410	0.0352	0.0146	0.7059
Log of free maize	0.4245	-0.1956	0.0104	0.7814
Credit constraint	0.0837	0.1767	0.0938	0.9530

Table B3: AC Variables Factor Loadings and Uniqueness

Variable	Factor1	Factor2	Uniqueness
Non-Agri household	0.2910	-0.1740	0.8851
Household education	0.4294	0.0099	0.8155
Labour Constraint	0.2456	0.1888	0.9040

Table C.1.1: Impacts on Household Economic Activities - Baseline Bottom 50 per cent

Dependent Variable	Endline Impact (1)	Midline Impact (2)	Impact Diff (EL-ML) (3)=(1)-(2)	Baseline Treated Mean (4)	Endline Treated Mean (5)	Endline Control Mean (6)
Crop production household	0.026*	-0.012	0.038***	0.951	0.980	0.945
	(1.75)	(-0.76)	(2.88)			
Total crop harvest (kg)	63.249***	10.642	52.607**	160.372	274.995	186.683
	(4.47)	(0.58)	(2.69)			
Total crop harvest (kg) - Staples	62.296***	11.100	51.196**	155.661	263.008	177.523
	(4.28)	(0.64)	(2.50)			
Total value of crop harvest (MWK)	11,710.837***	-1,047.365	12,758.202***	26,906.869	48,332.181	30,391.480
	(2.87)	(-0.24)	(4.10)			
Raised or owned livestock	0.331***	0.192***	0.139***	0.252	0.660	0.269
	(7.91)	(4.04)	(4.33)			
TLU owned presently	0.067***	0.039***	0.028**	0.026	0.106	0.040
	(5.06)	(2.96)	(2.50)			
Household has non-farm enterprise	-0.024	-0.059	0.035	0.259	0.284	0.189
	(-0.56)	(-1.51)	(0.80)			
Number of economic activities	0.333***	0.121**	0.211***	1.462	1.925	1.404
	(5.04)	(2.11)	(3.55)			
N	5,037	5,037		794	794	885

Notes: Estimations use difference-in-differences modelling among panel households. Binary outcomes are estimated using LPM. See Table 4.1.1 for additional explanatory notes on model specification, including a list of control variables utilized. * 10% significance ** 5% significance; **** 1% significance.

Table C.1.2: Impacts on Loans and Credits - Baseline Bottom 50 per cent

Dependent Variable	Endline Impact (1)	Midline Impact (2)	Impact Diff (EL-ML) (3)=(1)-(2)	Baseline Treated Mean (4)	Endline Treated Mean (5)	Endline Control Mean (6)
Still owes on loan from 12+ months	-0.068**	0.003	-0.070***	0.075	0.096	0.174
	(-2.38)	(0.09)	(2.84)			
Took a loan in last 12m	-0.021	-0.048	0.027	0.271	0.246	0.260
	(-0.43)	(-1.16)	(0.69)			
Loan fully paid	0.036	0.037	-0.001	0.803	0.836	0.788
	(0.87)	(1.06)	(0.04)			
Purchased on credit in last 12m	-0.109**	-0.081**	-0.029	0.323	0.222	0.285
	(-2.54)	(-2.19)	(0.75)			
Credit on purchases fully paid	0.117***	0.067**	0.050*	0.807	0.899	0.808
	(3.65)	(2.62)	(1.73)			
Currently Owes	-0.139***	-0.077*	-0.063*	0.342	0.273	0.403
	(-2.79)	(-1.95)	(1.74)			
Total current debt (MWK)	-1,029.212**	-473.498*	-555.714	943.312	1,264.285	2,221.996
	(-2.57)	(-1.83)	(1.66)			
N	5,037	5,037		794	794	885

Notes: Estimations use difference-in-differences modelling among panel households. Binary outcomes are estimated using LPM. See Table 4.1.1 for additional explanatory notes on model specification, including a list of control variables utilized. * 10% significance ** 5% significance; **** 1% significance.

Table C.1.3: Credit Constraints - Baseline Bottom 50 per cent

Dependent Variable	Endline Impact (1)	Midline Impact (2)	Impact Diff (EL-ML) (3)=(1)-(2)	Baseline Treated Mean (4)	Endline Treated Mean (5)	Endline Control Mean (6)
Applied for loan but refused	-0.027***	-0.035**	0.009	0.058	0.017	0.026
	(-2.81)	(-2.59)	(0.68)			
Asked to buy on credit but refused	-0.052*	-0.007	-0.045*	0.108	0.041	0.088
	(-1.96)	(-0.25)	(1.93)			
Wanted larger loan at same interest rate	-0.035	-0.048	0.013	0.123	0.099	0.098
	(-0.95)	(-1.36)	(0.38)			
Sure to get a loan if applied	-0.053	-0.012	-0.041	0.181	0.118	0.129
	(-1.25)	(-0.36)	(1.24)			
Would apply for loan if sure can get	-0.061	-0.016	-0.046	0.153	0.094	0.146
	(-1.18)	(-0.38)	(1.31)			
Sure can buy on credit if asked	-0.020	0.019	-0.039	0.167	0.175	0.160
	(-0.50)	(0.44)	(0.58)			
Would ask to purchase on credit if sure can get	0.036	0.040*	-0.004	0.088	0.082	0.068
	(1.11)	(1.79)	(0.11)			
Loan/Credit Purchase constrained	0.035	0.034	0.001	0.873	0.902	0.896
	(1.37)	(1.25)	(0.03)			
N	5,037	5,037		794	794	885

Notes: Estimations use difference-in-differences modelling among panel households. Binary outcomes are estimated using LPM. See Table 4.1.1 for additional explanatory notes on model specification, including a list of control variables utilized. * 10% significance ** 5% significance; **** 1% significance.

Table C.1.4: Credit Use - Baseline Bottom 50 per cent

Dependent Variable	Endline Impact (1)	Midline Impact (2)	Impact Diff (EL-ML) (3)=(1)-(2)	Baseline Treated Mean (4)	Endline Treated Mean (5)	Endline Control Mean (6)
Some loan used for prod invest	0.011	-0.008	0.018	0.029	0.033	0.020
	(1.12)	(-0.84)	(1.66)			
Some loan used for consumption	-0.015	-0.047*	0.032	0.185	0.177	0.186
	(-0.39)	(-1.84)	(0.91)			
Some loan used for education	-0.008	0.002	-0.010	0.011	0.028	0.031
	(-0.67)	(0.20)	(0.88)			
Some loan used for health	-0.014	-0.015	0.000	0.053	0.074	0.069
	(-0.54)	(-0.64)	(0.01)			
Some credit used for prod invest	-0.001	0.003	-0.003	0.010	0.004	0.003
	(-0.11)	(0.38)	(0.62)			
Some credit used for consumption	-0.100**	-0.072*	-0.029	0.291	0.201	0.264
	(-2.31)	(-1.73)	(0.79)			
Some credit used for education	-0.000	0.002	-0.002	0.001	0.001	0.003
	(-0.01)	(0.63)	(0.50)			
Some credit used for health	-0.008	-0.018	0.011	0.016	0.015	0.014
	(-0.79)	(-1.67)	(0.99)			
N	5,037	5,037		794	794	885

Notes: Estimations use difference-in-differences modelling among panel households. Binary outcomes are estimated using LPM. See Table 4.1.1 for additional explanatory notes on model specification, including a list of control variables utilized. * 10% significance ** 5% significance; **** 1% significance.

Table C.1.5: Impacts on In- and Out-Transfers - Baseline Bottom 50 per cent

Dependent Variable	Endline Impact (1)	Midline Impact (2)	Impact Diff (EL-ML) (3)=(1)-(2)	Baseline Treated Mean (4)	Endline Treated Mean (5)	Endline Control Mean (6)
Any in-transfer of cash, food or labour	0.121	0.010	0.112	0.717	0.719	0.654
	(1.65)	(0.12)	(1.43)			
Any out-transfer of cash, food or labour	0.037	0.021	0.016	0.028	0.108	0.067
	(1.28)	(0.75)	(0.55)			
Total value of cash, food of labour in-transfer (MWK)	1,291.193	735.405	555.788	6,101.291	8,213.298	7,352.113
	(0.76)	(0.42)	(0.39)			
Total value of cash, food of labour out-transfer (MWK)	923.373**	228.848	694.525	520.361	1,605.166	996.184
	(2.05)	(0.60)	(1.55)			
Net transfer of cash, food or labour (MWK)	367.820	506.557	-138.737	5,580.930	6,608.132	6,355.929
	(0.25)	(0.32)	(0.11)			
Household received Agric Implements/Inputs	0.047	-0.000	0.048	0.172	0.136	0.117
	(0.77)	(-0.00)	(1.31)			
N	5,036	5,036		794	794	885

Notes: Estimations use difference-in-differences modelling among panel households. Binary outcomes are estimated using LPM. See Table 4.1.1 for additional explanatory notes on model specification, including a list of control variables utilized. * 10% significance ** 5% significance; **** 1% significance.

Table C.1.5: Impacts on Out-Transfers - Baseline Bottom 50 per cent

Dependent Variable	Endline Impact (1)	Midline Impact (2)	Impact Diff (EL-ML) (3)=(1)-(2)	Baseline Treated Mean (4)	Endline Treated Mean (5)	Endline Control Mean (6)
Household transferred Cash Transfer	0.037	0.021	0.016	0.028	0.108	0.067
	(1.28)	(0.75)	(0.56)			
Household transferred Food/Other Consumables	0.064	0.044	0.021	0.189	0.286	0.239
	(0.83)	(0.59)	(0.39)			
Household transferred Labour or Time	-0.020	0.004	-0.025	0.119	0.144	0.186
	(-0.29)	(0.09)	(0.44)			
Household transferred Agric Implements/Inputs	-0.014	-0.014	0.001	0.015	0.022	0.025
	(-0.80)	(-1.45)	(0.03)			
N	5,036	5,036		794	794	885

Notes: Estimations use difference-in-differences modelling among panel households. Binary outcomes are estimated using LPM. See Table 4.1.1 for additional explanatory notes on model specification, including a list of control variables utilized. * 10% significance ** 5% significance; **** 1% significance.

Table C.1.7: Impacts on Social Safety Nets - Baseline Bottom 50 per cent

Dependent Variable	Endline Impact (1)	Midline Impact (2)	Impact Diff (EL-ML) (3)=(1)-(2)	Baseline Treated Mean (4)	Endline Treated Mean (5)	Endline Control Mean (6)
Any SSN benefit	-0.006	0.002	-0.007	0.672	0.616	0.586
	(-0.09)	(0.03)	(0.14)			
No. of SSN benefits	-0.234	-0.142	-0.092	1.145	0.803	0.864
	(-1.10)	(-0.79)	(0.69)			
Value of SSN benefits (MWK)	650.538	1,086.246	-435.708	8,396.757	8,920.237	8,122.398
	(0.33)	(0.66)	(0.43)			
Voucher for fertilizer	0.042	0.025	0.018	0.461	0.471	0.412
	(0.67)	(0.39)	(0.47)			
Value of Voucher for fertilizer	1,268.851	946.156	322.695	5,365.867	6,492.591	5,268.756
	(1.46)	(1.00)	(0.41)			
N	5,037	5,037		794	794	885

Notes: Estimations use difference-in-differences modelling among panel households. Binary outcomes are estimated using LPM. See Table 4.1.1 for additional explanatory notes on model specification, including a list of control variables utilized. * 10% significance ** 5% significance; **** 1% significance.

Table C.1.8: Impacts on Specific Social Safety Nets - Baseline Bottom 50 per cent

Dependent Variable	Endline Impact (1)	Midline Impact (2)	Impact Diff (EL-ML) (3)=(1)-(2)	Baseline Treated Mean (4)	Endline Treated Mean (5)	Endline Control Mean (6)
Free maize	-0.086	-0.076	-0.011	0.183	0.024	0.074
	(-0.99)	(-1.05)	(0.27)			
Quantity of Free Maize (kg)	-12.772	-13.337	0.565	25.337	0.917	4.174
	(-0.89)	(-0.96)	(0.08)			
Other free food	-0.108	-0.057	-0.051	0.171	0.067	0.117
	(-1.55)	(-0.82)	(1.31)			
Value of Other free food	95.239	115.193	-19.954	1,131.487	243.344	386.182
	(0.09)	(0.13)	(0.07)			
Food/Cash for work	0.009	-0.008	0.017	0.068	0.012	0.020
	(0.44)	(-0.34)	(0.98)			
Value of Food/Cash for work	-32.548	-139.845	107.297	308.825	63.438	84.502
	(-0.37)	(-1.31)	(1.25)			
School Feeding	-0.083	-0.043	-0.040	0.204	0.158	0.178
	(-1.11)	(-1.10)	(0.51)			
Value of School Feeding	-841.152	-403.654	-437.497	1,178.494	1,200.238	1,594.492
	(-1.15)	(-1.07)	(0.56)			
Community Based Childcare	0.007	0.003	0.004	0.040	0.036	0.019
	(0.32)	(0.09)	(0.21)			
Value of Community Based Childcare	-3.209	-67.808	64.599	182.616	193.814	86.628
	(-0.02)	(-0.61)	(0.53)			
N	5,037	5,037		794	794	885

Notes: Estimations use difference-in-differences modelling among panel households. Binary outcomes are estimated using LPM. See Table 4.1.1 for additional explanatory notes on model specification, including a list of control variables utilized. * 10% significance ** 5% significance; **** 1% significance.

Table C.1.9: Impacts on Shocks and Coping-Baseline Bottom 50 per cent

Dependent Variable	Endline Impact (1)	Midline Impact (2)	Impact Diff (EL-ML) (3)=(1)-(2)	Baseline Treated Mean (4)	Endline Treated Mean (5)	Endline Control Mean (6)
Any Negative Shock	-0.034	0.021	-0.055	0.970	0.882	0.923
	(-0.99)	(0.50)	(1.02)			
No. of Shocks	0.046	0.149	-0.103	2.619	2.372	2.414
	(0.23)	(0.64)	(0.41)			
Any Covariate Shock	-0.045	0.021	-0.067	0.940	0.854	0.909
	(-0.99)	(0.36)	(1.02)			
Number of covariate shocks	0.015	0.125	-0.110	2.200	1.853	1.845
	(0.09)	(0.53)	(0.52)			
Any Idiosyncractic Shock	0.023	0.019	0.003	0.266	0.146	0.162
	(0.45)	(0.41)	(0.09)			
Number of idiosyncratic shocks	0.019	-0.003	0.022	0.313	0.166	0.182
	(0.32)	(-0.05)	(0.56)			
Share of Positive Coping Strategies	0.354***	0.204**	0.150	0.337	0.695	0.338
	(5.71)	(2.51)	(1.45)			
Share of Negative Coping Strategies	-0.304***	-0.060	-0.245***	0.261	0.282	0.534
	(-5.11)	(-0.89)	(3.26)			
N	4,495	4,495		770	714	821

Notes: Estimations use difference-in-differences modelling among panel households. Binary outcomes are estimated using LPM. See Table 4.1.1 for additional explanatory notes on model specification, including a list of control variables utilized. * 10% significance ** 5% significance; **** 1% significance.

Table C.1.10: Impacts on Specific Shocks - Baseline Bottom 50 per cent

Dependent Variable	Endline Impact (1)	Midline Impact (2)	Impact Diff (EL-ML) (3)=(1)-(2)	Baseline Treated Mean (4)	Endline Treated Mean (5)	Endline Control Mean (6)
Drought/irregular rains	-0.064	0.042	-0.106	0.628	0.626	0.660
	(-0.82)	(0.38)	(1.39)			
Unusually high level of crop/livestock pest/disease	0.007	0.020	-0.013	0.097	0.068	0.071
	(0.21)	(0.42)	(0.32)			
Unusually high prices of food	0.041	0.003	0.037	0.878	0.707	0.678
	(0.79)	(0.04)	(0.46)			
Serious illness or accident to household member(s)	0.014	0.007	0.007	0.180	0.104	0.091
	(0.41)	(0.18)	(0.25)			
Death of household income earner(s)	-0.011	-0.009	-0.002	0.038	0.030	0.038
	(-0.66)	(-0.80)	(0.15)			
N	5,037	5,037		794	794	885

Notes: Estimations use difference-in-differences modelling among panel households. Binary outcomes are estimated using LPM. See Table 4.1.1 for additional explanatory notes on model specification, including a list of control variables utilized. * 10% significance ** 5% significance; **** 1% significance.

Table C.1.11: Impacts on Coping Strategies - Baseline Bottom 50 per cent

Dependent Variable	Endline Impact (1)	Midline Impact (2)	Impact Diff (EL-ML) (3)=(1)-(2)	Baseline Treated Mean (4)	Endline Treated Mean (5)	Endline Control Mean (6)
Did nothing	-0.113	0.027	-0.141*	0.211	0.199	0.346
	(-1.29)	(0.30)	(1.89)			
Own savings	-0.067	-0.083	0.016	0.168	0.096	0.178
	(-1.44)	(-1.36)	(0.21)			
R'ced external assistance	-0.121**	0.024	-0.145**	0.436	0.191	0.284
	(-2.37)	(0.32)	(2.59)			
More work	-0.287***	-0.237***	-0.050	0.545	0.150	0.429
	(-3.66)	(-3.94)	(0.70)			
Borrowed	-0.062**	-0.017	-0.045*	0.029	0.035	0.079
	(-2.48)	(-1.31)	(1.82)			
Household members moved out	-0.007	-0.013	0.006	0.005	0.011	0.018
	(-0.97)	(-1.49)	(0.51)			
Changed eating pattern	-0.282***	-0.108*	-0.174***	0.261	0.109	0.333
	(-4.01)	(-1.85)	(3.24)			
N	4,494	4,494		770	714	821

Notes: Estimations use difference-in-differences modelling among panel households. Binary outcomes are estimated using LPM. See Table 4.1.1 for additional explanatory notes on model specification, including a list of control variables utilized. * 10% significance ** 5% significance; **** 1% significance.

Table C.1.12: Impacts on Labour Supply - Baseline Bottom 50 per cent

Dependent Variable	Endline Impact (1)	Midline Impact (2)	Impact Diff (EL-ML) (3)=(1)-(2)	Baseline Treated Mean (4)	Endline Treated Mean (5)	Endline Control Mean (6)
Total Members FTW	0.057	-0.007	0.064	0.758	0.864	0.864
	(0.86)	(-0.09)	(1.36)			
Males FTW	0.007	-0.045	0.052**	0.256	0.336	0.334
	(0.16)	(-1.23)	(2.10)			
Females FTW	0.050	0.039	0.012	0.502	0.528	0.531
	(1.09)	(0.78)	(0.32)			
Severely Labour Constrained	-0.031	-0.017	-0.014	0.474	0.425	0.415
	(-0.95)	(-0.40)	(0.50)			
Moderately Labour Constrained	0.019	0.006	0.014	0.383	0.376	0.384
	(1.08)	(0.19)	(0.55)			
Labour Constrained	-0.012	-0.011	-0.001	0.857	0.801	0.799
	(-0.51)	(-0.30)	(0.03)			
N	5,037	5,037		794	794	885

Notes: Estimations use difference-in-differences modelling among panel households. Binary outcomes are estimated using LPM. See Table 4.1.1 for additional explanatory notes on model specification, including a list of control variables utilized. * 10% significance ** 5% significance; **** 1% significance.

Table C.1.13: Impacts on Labour Use by Activity - Baseline Bottom 50 per cent

Dependent Variable	Endline Impact (1)	Midline Impact (2)	Impact Diff (EL-ML) (3)=(1)-(2)	Baseline Treated Mean (4)	Endline Treated Mean (5)	Endline Control Mean (6)
All Chores (Hours Yesterday)	0.141	-0.395	0.536	8.867	9.094	8.765
	(0.18)	(-0.49)	(1.20)			
Own Farm Activities (Days in Past Season)	13.661	2.163	11.498	90.698	107.274	94.039
	(1.40)	(0.18)	(1.34)			
Fishing (Days in Last 7 Days)	-0.073	-0.060	-0.013	0.000	0.004	0.092
	(-1.31)	(-0.87)	(0.23)			
Non-Farm Enterprise (Hours in Last 7 Days)	-0.211	-0.878**	0.667**	1.799	1.183	0.802
	(-0.53)	(-2.30)	(2.29)			
Livestock Activities (Hours in Last 7 Days)	0.234	0.312	-0.079	0.253	0.884	0.336
	(1.32)	(1.25)	(0.32)			
Casual, Part time activities (Hours in Last 7 Days)	-3.446**	-3.190**	-0.255	9.563	6.044	10.151
	(-2.55)	(-2.12)	(0.19)			
Ganyu Work (Months in last 12 Months)	-4.697***	-4.474***	-0.223	9.709	7.723	11.521
	(-2.76)	(-2.81)	(0.16)			
Work Outside Household excluding Ganyu (Hours in Last 7 Days)	0.116	0.143	-0.027	0.112	0.064	0.257
	(0.40)	(0.59)	(0.17)			
N	5,037	5,037		794	794	885

Notes: Estimations use difference-in-differences modelling among panel households. Binary outcomes are estimated using LPM. See Table 4.1.1 for additional explanatory notes on model specification, including a list of control variables utilized. * 10% significance ** 5% significance; **** 1% significance.