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## Unbundling the impacts of economic empowerment programmes: evidence from Malawi

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Discussion Paper

32/2018

# Unbundling the Impacts of Economic Empowerment Programmes

## Evidence from Malawi

*Francesco Burchi*  
*Christoph Strupat*

# Unbundling the impacts of economic empowerment programmes

Evidence from Malawi

Francesco Burchi

Christoph Strupat

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## Abbreviations

CT	cash transfer
CPI	consumer price index
EEP	(Tingathe) Economic Empowerment Pilot Project
FISP	Food Input Subsidy Programme
G-CSPI	Global Correlation Sensitive Poverty Index
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
HFIAS	Household Food Insecurity Access Scale
ILO	International Labour Organization
MES	Microentrepreneurship Support Programme (Chile)
MVAC	Malawi Vulnerability Assessment Committee Programme
MWK	Malawian kwacha
NGO	non-governmental organisation
NSO	National Statistical Office (Malawi)
P.c.	per capita
REAP	Rural Entrepreneur Access Project (Kenya)
SCTP	Social Cash Transfer Programme (Malawi)
USD	US dollar
VSL	Village Savings and Loans
WINGS	Women's Income Generating Support (Uganda)

## Executive summary

In Malawi, poverty is a structural problem. Over the last years, the government of Malawi together with international donors have launched several anti-poverty schemes. The most remarkable of these programmes with regard to coverage and effectiveness is the Social Cash Transfer Programme (SCTP). While impact assessments indicate that this programme has improved its beneficiaries' access to basic goods and services, they also show that it does not ensure their sustainable graduation out of poverty. In other words, beneficiary households are not able to exit poverty by their own means but remain dependent on the provision cash transfers. The Tingathe Economic Empowerment Pilot Project (EEP) was established to address this weakness and to put beneficiaries onto a "graduation pathway". It provides households with resources to improve their well-being substantially and to lay a foundation with which to escape poverty and dependence on social assistance in the mid- to long term. The pilot project was jointly designed and implemented by the Social Protection Programme of the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) in cooperation with the Government of Malawi, the Mwanza District Council, and the COMSIP Cooperative Union.

The design of the Tingathe EEP was influenced by the graduation strategy implemented by BRAC, a large non-governmental organisation from Bangladesh. This strategy consists of providing households in extreme poverty with an assistance package, including cash and productive asset transfer, various forms of training, and community mobilisation for social integration. While many studies point to the positive impacts of this programme on several outcomes, it seems that the magnitude of the impacts is not large despite the high costs of these initiatives. Moreover, the evidence we have so far only concerns the effects of the *overall* package; we do not know which of the various different components is more effective. Against this background, some organisations implemented similar interventions, but encompassing less components. These programmes had an economic empowerment goal and combined the transfer of a large lump-sum with different types of business and financial training and the creation of savings groups. The Tingathe EEP belongs to this category of programmes.

The Tingathe EEP targets the same beneficiaries as the SCTP, namely households that live in ultra-poverty (that is, below the food poverty line) and are labour-constrained (with no or only a few household members able to work). It provides them with a lump-sum and training on financial and business matters. The training is also organised in such a way as to encourage beneficiaries to create COMSIP Village Savings and Loans (VSL) groups. Compared to other economic empowerment programmes, the EEP has three unique features. First, it is designed as a cluster-randomised-control-trial that allows one to disentangle the impacts of the various different project components, namely training, the lump-sum, and the combination of the two. Second, it targets ultra-poor households where all or most of the members are either too old, too young, or too sick to work. Third, it allows beneficiaries to appoint someone to carry out project-related activities on their behalf, which is of particular relevance to labour-constrained households. In the Tingathe EEP – as well as in the SCTP – this person is referred to as the *proxy*.

Given these unique features of the Tingathe EEP, this study contributes to closing three important gaps in knowledge in the field of economic empowerment programmes:

**First**, it examines the impacts of the overall project as well as the impacts of each project component – namely training, the lump-sum, and the combination of the two – on several outcome variables. This way we can also investigate which project component is more effective for each specific outcome.

**Second**, the study verifies whether the project’s impacts differ between labour-constrained and non-labour-constrained households. While the project targets labour-constrained households, we discovered that not all households fulfil the project criteria to be defined as labour-constrained. For this reason, we can explore the impacts of the Tingathe EEP for two separate groups: labour-constrained households; and non-labour-constrained households.

**Third**, the study assesses the impacts of the proxy option and whether labour-constrained households in particular benefitted from this option.

In order to address these knowledge gaps, an impact assessment was carried out with an experimental study design, using longitudinal information for about 800 households both before and after implementation of the Tingathe EEP. This number includes households in the three randomly allocated project components (training, lump-sum, and the combination of the two) as well as the control group. In order to address all the knowledge gaps, we focus on eight outcome variable categories: 1) financial inclusion; 2) non-farm business activities; 3) livestock; 4) household assets; 5) agricultural production; 6) food security; 7) total consumption and poverty; and 8) ability to deal with shocks (drought resilience). Table 1 summarises the impacts of the overall project as well as the three project components on all outcomes variables.

### **What are the impacts of the project and its components? Which component is more effective for each specific outcome?**

The impact assessment shows that the overall project had substantial positive impacts on **financial inclusion**, measured by means of variables related to financial literacy, savings and loans. These effects were entirely driven by the financial and business training; the lump-sum transfer alone had no effect. The training, indeed, focused on group formation and the provision of basic financial and managerial information, which facilitated the creation of the Village Saving and Loan (VSL) groups. This was considered by the project designers as well as by many institutions engaging in graduation strategies as an important channel to improve beneficiaries’ living conditions in a sustainable manner. Ultra-poor households, in fact, have otherwise no access to savings and loans, and therefore cannot smooth their consumption throughout the year. However, longer-term assessment is needed in order to verify whether, for example, most of the people are actually able to repay the loans and whether the creation of these savings groups is a first step towards the generation of joint productive activities.

<b>Table 1: Summary of impacts</b>				
Outcome variables	Overall project	Lump-sum plus training	Lump-sum only	Training-only
<b>1) FINANCIAL INCLUSION</b>				
Financial literacy index	0.58***	0.80***	0.19	0.71***
Saving uptake (yes/no)	0.26***	0.34***	0.02	0.44***
Amount savings (MWK)	4,408***	5,237***	909.3	6,899***
Loan uptake (yes/no)	0.19**	0.17***	-0.06	0.35***
Amount loan (MWK)	2,018**	3,005***	-610.2	3,503***
<b>2) NON-FARM BUSINESS ACTIVITIES</b>				
Start non-farm business (yes/no)	0.05***	0.08***	0.01	0.04***
Sales of non-farm business (MWK)	1,965**	2,300**	25.99	3,429**
Profits of non-farm business (MWK)	793.5*	1,065**	-1.099	1,360*
<b>3) LIVESTOCK</b>				
Per capita number of livestock	0.29**	0.56***	0.35	0.05
Per capita wealth of livestock (MWK)	7,462***	14,293***	5,116***	2,702
Per capita expenditures on livestock (MWK)	6,477**	14,061***	4,912***	200.6
<b>4) HOUSEHOLDS ASSETS</b>				
Per capita number of assets	0.20	-0.01	0.35	0.28**
Per capita number of agricultural assets	0.07	0.07	0.06	0.05
Per capita number of non-agricultural assets	0.14	-0.10	0.29	0.21***
Asset wealth index	0.17	-0.08	0.01	0.59***
<b>5) AGRICULTURAL PRODUCTION</b>				
Per capita quantity of harvest (kg)	42.00*	50.45*	44.08	13.86
Per capita quantity of harvest (own consumption) (kg)	30.04**	47.27**	30.08	15.60
Per capita quantity of harvest sold (kg)	2.316	6.21***	1.54	-0.88
Per capita value of harvest (MWK)	3,496*	6,001***	3,274	2,176
Per capita value of harvest (own consumption) (MWK)	1,925*	3,499***	608.8	1,564
Per capita value of harvest sold (MWK)	1,319	3,038***	548.4	310.9
<b>6) FOOD SECURITY</b>				
Per capita food consumption (MWK)	8,385	10,222*	4,141	10,402
Diet diversity score	0.03	-0.22	-0.04	0.35**
Household food insecurity access scale (HFIA)	-0.15	-0.03	-0.11	-0.32*
<b>7) TOTAL CONSUMPTION AND POVERTY</b>				
Per capita total consumption (MWK)	17,595	21,519**	20,393	11,016
Poor household (yes/no)	-0.06	-0.05**	-0.08	-0.04
<b>8) DROUGHT RESILIENCE</b>				
Drought recovery (yes/no)	0.09*	-0.01	0.09	0.22***
Number of months needed for drought recovery	-1.24**	-1.98***	-1.80***	-0.41
Notes: * 10 per cent significance ** 5 per cent significance; *** 1 per cent significance. MWK: Malawian kwacha Source: Authors				

The EEP also had statistically significant impacts on the likelihood of starting up new **non-farm business activities**, such as petty trading or beer brewing, as well as on the sales and profits in these activities. However, the size of these effects is not large and is restricted to beneficiaries who participated in the financial and business training (as seen in Table 1). Only 18 out of 256 project beneficiaries started a non-farm business such as petty trading or brewing business in the treatment group while 10 out of 530 households started up such a business in the control group. The start-up of new forms of micro-businesses in sectors other than agriculture or the expansion of already existing ones was indeed expected by project designers to be one of the main graduation pathways. The underlying rationale was that, by removing capital and knowledge/skills constraints, poor households could make larger investments in non-traditional micro-business activities and become small entrepreneurs. Our results indicate that this was rarely the case. In most of the cases, beneficiaries simply continued their farm activities or engaged in livestock rearing, or used the money and knowledge for other purposes, such as improving the condition of their housing. Moreover, given that the lump-sum alone did not generate any significant effect on non-farm business activities, this points to the limitations of giving cash alone as a tool for a long-lasting poverty reduction. Nevertheless, if most of the beneficiaries did not become entrepreneurs, it is fundamental to understand the reasons why. One probable reason is that many beneficiaries did not want to engage in risky activities preferring to have a constant, safe source of income. Other reasons may be due to the local context. Through the qualitative interviews, we found that people felt social pressure to share the lump-sum transfer and to spend it over a fairly limited period of time, sometimes without an adequate investment plan. Another potential reason for this behaviour concerns the demand side: Given that Mwanza is a poor district, there may be little demand for potential goods and services produced through the new micro-business activities.

With regard to **livestock**, the lump-sum transfer played a key role. A considerable share of the lump-sum was used to purchase livestock, thereby significantly increasing livestock wealth. Livestock in Malawi – as well as in other sub-Saharan African countries such as Ethiopia or Zambia – is a fundamental productive asset. According to the BRAC graduation strategies, ensuring that poor households engage in livestock rearing is potentially the most important channel through which people can escape poverty (Bandiera et al., 2017). For the same reasons, some integrated programmes provide some type of livestock directly: others provide cash and enable people to choose what to buy as long as it is of a productive nature. One problem identified in some of these cases is that beneficiaries who got or bought livestock were unaware of how to handle livestock: in such a case, only minimal benefits are expected from owning livestock. Therefore, integrated services (for instance, training) are required. When similar problems were encountered in the EEP, project administrators reacted and decided to introduce Livestock Management and Horticulture Training, which had initially not been planned.

The overall project had no impact on **household assets (other than livestock)**, including both agricultural and non-agricultural assets. The results for the different project components show that the ‘training-only’ group had more assets per household member than the control group, especially in respect to non-agricultural assets.

Turning to **agricultural production**, the project improved the quantity and monetary amount of the last harvest. This impact was due to the ‘lump-sum plus training’ group that increased their harvest quantity significantly, while the groups that only receive training or the lump-sum did not increase the quantity of their harvest. Interestingly, most of this additional harvest of the lump-sum plus training group was used for own consumption purposes, possibly in order to improve their food security situation. Only some of the additional harvest was sold. If we turn to harvest sales, we find a highly significant increase for the lump-sum plus training group. As we did not find any impact of the project on agricultural assets, the increase in agricultural production might be more a result of investments in seeds and fertilisers and less due to basic productivity-enhancing implements for farming. In any case, it seems that the combination of training and the lump-sum transfer was crucial in order to improve agricultural production. Since the primary source of livelihood for the households living in Mwanza and Neno is crop production, the benefits from the sales of crops as generated by the lump-sum plus training group are a promising first step on a potential graduation pathway out of poverty.

In a context characterised by high poverty and food insecurity such as in rural Malawi, it is important to verify whether a project such as the EEP generated impacts on **food consumption** and, even more, on **food security**. The overall project did not have a significant impact on per capita food consumption. However, if we turn to the different treatment arms, we find a significant impact for the lump-sum plus training group. This finding is partly explained by the result from the previous section on agricultural production showing that the additional harvest of the lump-sum plus training group was predominately used for own consumption purposes. With regard to food security, the overall project had no impact on the indicators. There are two possible explanations for these results: First, the project did not have a nutrition-related component, therefore it was unlikely to have had a significant effect on diet diversity in particular. Second, it may be that the project had investments and engagement in economic activities, which in the mid-to long term might improve food security, but in the short term may show no effect. Longer term impact assessments would be required to verify the plausibility of the latter argument.

Turning to **total consumption** and the **poverty status** of the household, the overall project does not significantly affect either of the two outcomes. The same occurs for the ‘lump-sum only’ and for the training-only beneficiaries. Only the combination of a lump-sum and training generates positive effects on consumption: this group had on average a larger per capita consumption and was also less poor than the control group. Households that received a lump-sum along with training managed to translate each *kwacha* (Malawian currency) received an additional 0.6 kwacha of benefits – measured in terms of total consumption. What is responsible for this multiplier effect is that the lump-sum plus training group was able to increase their agricultural production. Most of the additional harvest was used for food consumption, while some was sold and probably improved their income situation over the last 12 months. Furthermore, this group had invested heavily in livestock. It is possible that livestock rearing, alongside the crop production, had generated additional income through the selling of livestock and their offspring.

As drought had been an extremely severe event in Malawi in 2017, it was particularly important to investigate whether a project such as the EEP could help households to **deal with this shock (resilience)**. Our results indicate that the overall project supported more

beneficiaries in recovering from the drought than households in the control group. This effect was entirely driven by the training-only group. If we focus on beneficiaries who had recovered from the drought and then focus just on the duration of recovery, we find that the overall project contributed to accelerating the process of recovery. Interestingly, the impacts on the duration of recovery were only significant for the lump-sum plus training and for the lump-sum only groups, and not for the training-only group.

Summarising the results concerning the first gap in knowledge, the project had positive effects on direct measures of well-being, the resilience of the beneficiaries and the viability of their income-generating activities, as well as on potential drivers of future well-being. Given that the impacts for many (productive) outcomes are much larger in the group of beneficiaries who received **both training and a lump-sum** as compared to the group who received only the latter, we can conclude that **the training increased the productive use of the lump-sum transfer**. Whether these improvements will translate into beneficiaries' graduation out of poverty remains an open question. Further, longer-term impact assessments are needed to verify this.

### **What is the difference in project impacts between labour-constrained and non-labour-constrained households?**

In order to address the second knowledge gap, we conducted an analysis with 17 outcome variables, and find that there are almost no differences in the project's impacts between labour-constrained and non-labour-constrained households. Some further robustness checks, based on different ways of operationalising the definition of labour constraint, support these conclusions. While further long-term assessment is needed, these findings cast some doubt on the common view that labour-constrained households cannot benefit from economic empowerment programmes and will always need to depend on social assistance.

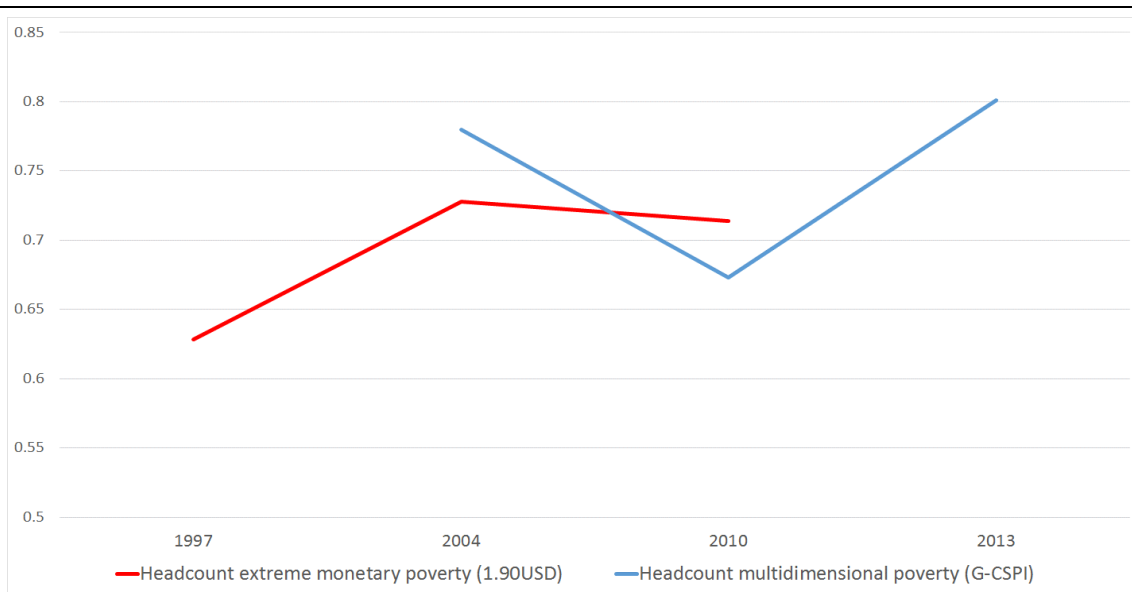
### **What are the impacts of the proxy option and who has benefitted most from this option?**

With regard to the third knowledge gap, it appears that active proxies are crucial in enabling most of the project impacts. In particular, we find that an active proxy is a powerful enabler for productive activities such as livestock and agricultural production. As the proxy option was introduced to support labour-constrained beneficiaries, we checked whether the presence of an active proxy played a crucial role in explaining the insignificant differences in the project's impacts between labour-constrained and non-labour-constrained households. We find that labour-constrained beneficiaries benefitted from the presence of an active proxy, while at the same time we find almost no differences between non-labour-constrained beneficiaries with an active proxy and those with no proxy. As, to the best of our knowledge, no economic empowerment programme had included such a proxy option in the past, we were able to show for the first time that labour-constrained households can benefit from such programmes. While further longer terms assessments are needed, these results suggest that proxies can be an important part of more inclusive economic empowerment programmes that also can include ultra-poor and labour-constrained households.

## 1 Introduction

In Malawi, poverty is a structural problem, which is very hard to tackle. Based on official World Bank statistics, the percentage of people under the international extreme poverty line (USD 1.90 per day) is very high and increased substantially between 1997 (62.8 per cent) and 2004 (72.8 per cent), to then only minimally decline in 2010 (71.4 per cent) (see Figure 1). The picture appears even more worrisome, looking at the figures for multidimensional poverty based on the recently proposed Global Correlation Sensitive Poverty Index (G-CSPI) (Burchi, Rippin, & Montenegro, 2018). After a decline in multidimensional poverty in the period 2004 to 2010, the estimate for 2013 shows a peak.<sup>1</sup>

**Figure 1: Trends in monetary and multidimensional poverty in Malawi**



Source: Authors, based on PovcalNet data and data from Burchi, Rippin & Montenegro (2018)

To tackle poverty and food insecurity over the last decades, and with the support of international donors, the government of Malawi has launched a number of noteworthy anti-poverty initiatives. In particular, various different social protection schemes have been implemented, initially in pilot form. The most remarkable of these programmes with regard to coverage and effectiveness is the Social Cash Transfer Programme (SCTP). This programme commenced in 2006 as a pilot programme and has since been gradually expanded due to the technical support of UNICEF, the United Nations Children’s Fund, and, very recently, the financial support of the World Bank. As in other sub-Saharan countries (such as Zambia), the SCTP targets households in ultra-poverty (that is, below the food poverty line) and with strong labour constraints. This programme has substantially improved the economic conditions as well as many dimensions of well-being of the beneficiaries (Miller, Tsoka, & Reichert, 2011; Abdoulayi et al., 2016). However, like any cash transfer (CT) alone, it does not have the explicit aim of sustainably graduating the beneficiaries out of poverty. The work of Abdoulayi et al. (2016) indicates that the poverty-reduction effects are indeed not large, and that therefore there is a serious risk that people remain dependent

<sup>1</sup> The 2013 official estimates of monetary poverty from PovcalNet were not available at the time of publishing this paper.



on the assistance. This limitation is common to many cash transfer programmes implemented in other countries, even when they are adequately designed and implemented (in other words when the transfer size is not too low and payments take place on a regular basis) (Burchi, Scarlato, & D’Agostino, 2018; Roelen et al., 2017).

The main objective of the Tingathe Economic Empowerment Pilot Project (EEP) was to put beneficiaries onto a “graduation pathway”, that is, to provide them with the necessary resources to significantly improve their well-being and lay the foundation for an exit from poverty and dependence on social assistance in the mid- to long term. The project was jointly designed and implemented by the Social Protection Programme of the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) in cooperation with the Government of Malawi, the Mwanza District Council, and the COMSIP Cooperative Union. The design and objectives of the EEP have been influenced by the international debate on graduation, which began at the time of the graduation strategy implemented at the beginning of 2000s by BRAC, a large NGO from Bangladesh. This strategy consisted of providing poor households with a package of assistance, including: 1) productive asset transfer; 2) enterprise development training; 3) life-skills training; 4) health support; and 5) promotion of community mobilisation for social integration. Within this framework, poverty is conceived as a multidimensional phenomenon: that is why integrated, multi-component interventions are required to tackle its structural causes. Extensive empirical evidence exists with regard to the effectiveness of such an approach. Most of the studies highlight the highly significant and long-lasting negative impacts on poverty and food insecurity, among other dependent variables (Raza, Das, & Misha, 2012; Bandiera et al., 2017). The same strategy, with some adjustments for local conditions, has been implemented by the Ford Foundation and Consultative Group to Assist the Poor (CGAP) in another six countries. Similar initiatives have also been implemented on a smaller geographical scale by NGOs in other parts of Bangladesh, Rwanda and Haiti. Also in these cases, most of the empirical studies point to the effectiveness of the BRAC-type model (Banerjee et al., 2015; Pritchard, Kenward, & Hannan, 2015; Gahamanyi & Kettlewell, 2015; Sabates-Wheeler & Devereux, 2013; Pain, Vautravers, & Descieux, 2015).

Despite this positive evidence – which has gained extensive attention in the development community – some elements of caution and knowledge gaps emerge. First, as highlighted by Kidd and Bailey (2017) and Banerjee et al. (2015), the magnitude of the impacts is not large; for it could take a very long time to help beneficiaries graduate out of poverty. Second, the costs of these initiatives are high; it is, therefore, necessary to verify whether this is best strategy in comparative terms. Third, the evidence we have so far concerns the effects of the overall package; we have no evidence of which of the five components are the most effective. Also, given the costs of such an intervention, it would be important to know whether similar results could be obtained, by concentrating only on a sub-set of components.

In part to address these issues, several similar interventions have been carried out worldwide, but encompassing less components. Given the presence of some form of cash transfer in each of these programmes, they have been generally defined as “cash plus” programmes (Roelen et al., 2017). Among them, a few programmes had a specific economic empowerment goal and combined the transfer of a large lump-sum with different types of business training, financial training and the creation of savings groups.

One of these programmes is the Microentrepreneurship Support Programme (MES) in Chile, which provides very poor households (who applied either to start a business or to

enlarge one) – already beneficiaries of the comprehensive cash transfer “Chile Solidario” – with a large lump-sum (USD 600 which is 4.5 times the monthly poverty line) and long business training sessions (lasting a total of 60 hours). A group of beneficiaries received an additional grant of USD 240 between 7 and 8 months after receiving the first. Martinez Puentes, and Tagle (2013) find that the MES improved business practices and increased total employment and labour income without, however, having any significant impact on female decision-making and educational expenditures. The authors conclude that the second grant does not provide significant additional benefits.

Another interesting example is the Women’s Income Generating Support (WINGS) programme run by the NGO AVSI in North Uganda. The basic package of support consists of a lump-sum transfer (USD 150) and a short business training (5 days). On top of that, one group received training on group formation while another received some intensive supervision on the formulation and realisation of a business plan. In a comprehensive impact evaluation, Blattman, Green, Jamison, Christian, and Annan (2016) found that the overall programme had a significant impact on non-farm employment, durable and non-durable consumption and earnings while it had no significant impact on the non-economic dimensions of well-being. Moreover, their results point to the importance of group formation to ensure further (significant) improvements in earnings, savings, loan taking, and community engagement. On the other hand, the intensive supervisory activity – which is by far the most expensive part of the programme – proved to be either neutral or even deleterious.

A project similar to the WINGS programme is the Rural Entrepreneur Access Project (REAP), realised in North Kenya. REAP reaches ultra-poor women willing to engage in a business with another two women and provides two grants at two different moments, training in business skills, business mentoring, and financial training and the formation of saving groups. The impact assessment conducted by Gobin, Santos and Toth (2018) highlights significant effects on non-agricultural income, and on savings, while no significant effect on consumption and expenditures seems to have materialised. After one year, it is estimated that beneficiaries are 13.2 per cent more likely to have incomes above the poverty line (a 78.6 per cent increase over the control group). Interestingly, the authors compare their results with those of the graduation strategies, and conclude that they are very similar; costs, however, are significantly lower in the REAP.

The Tingathe EEP belongs to this limited set of programmes which focus on a few potentially relevant types of support. As for MES, WINGS, and REAP, lack of cash and financial and business knowledge are implicitly assumed to be the main root causes of (ultra-)poverty. Unlike these programmes, however, the EEP was designed as a cluster-randomised-control-trial, which allows one to identify the specific contribution of each programme component. This was not the case in the previous programmes (Gobin et al., 2018). Hence, by assessing the impacts of the EEP, we can not only examine whether it has improved the living standards of the beneficiaries in Malawi but also fill an important knowledge gap, whose utility may extend beyond the country context.

GIZ designed the project in the following way: The district of Mwanza, located in the south-west part of Malawi is divided up into 20 clusters of neighbouring villages, hereby referred to as “village clusters”. All SCTP beneficiaries that are ultra-poor and labour-constrained households living in 6 out of these 20 clusters are targeted by the EEP. In detail: a) two randomly selected clusters receive a lump-sum transfer (MWK 50,000, or about USD 50);

b) two randomly selected clusters receive financial and business training; and c) two randomly selected clusters receive both the lump-sum transfer and the financial/business training. The control group consists of SCTP beneficiaries from the remaining 14 village clusters of Mwanza and another 10 village clusters of the neighbouring district of Neno. The specific objective of the programme is to put the beneficiaries onto the “graduation pathway”, in other words to provide them with the necessary (material and immaterial) resources to significantly improve their well-being and to lay the foundation for their exit from poverty and dependence on social assistance in the mid- to long term.

Unlike the other programmes presented, that target potential entrepreneurs and business owners with labour capacities, the EEP targets ultra-poor households that are supposed to have strong labour impediments (high dependency ratio).<sup>2</sup> As the variability in terms of the dependency ratio is large among project beneficiaries, we are able to study a little-explored point: whether projects like this can, in the same way, improve the living standards of households with relatively low and high labour constraints. The standard assumption in the literature is that labour-constrained households cannot engage in economic activities and that they will therefore remain dependent on social assistance. We also explored an important innovative feature of the EEP: the use of the proxy. Against the background of targeting mostly labour-constrained households, the pilot project offered the main receivers the option to select someone who carries out project-related activities – such as attending the business training, choosing how to spend the lump-sum, or starting a business activity – on their behalf.

The German Development Institute / Deutsches Institut für Entwicklungspolitik (DIE) has been in charge of the impact assessment of the EEP from the very beginning. A mixed-methods approach has been employed. The first step consisted in a qualitative study. This was conducted immediately after the project’s implementation for the main purpose of discovering how beneficiaries used the lump-sum and how they planned to use the skills acquired during the training sessions (Beierl, Burchi, & Strupat, 2017). The present study presents the results of the quantitative impact assessment. It is based on an experimental study design using longitudinal information for about 800 households before and after the implementation of the Tingathe EEP. This number includes households in the three randomly allocated project components (training/lump-sum/combination of the two) and the control group.

In detail, this paper has three main objectives: First, it examines whether the EEP has improved the living standards of the beneficiaries and which project component has been the most effective in improving the different outcomes. Second, as the project targets labour-constrained households but not all households satisfy this target, it investigates whether project impacts are significantly different between the two groups (that is, more labour-constrained and less labour-constrained). Third, it studies the relevance of the proxy, and whether labour-constrained households in particular have benefitted from this option.

The impact assessment focuses on several dependent variables. We start with variables that are almost directly – and in a very short time – influenced by the project, such as financial knowledge, participation in the Village Savings and Loan (VSL) groups, and

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2 The dependency ratio is the number of household members divided by the number of household members of a productive age that are fit for work.

amount of savings. As the EEP plans to put beneficiaries onto the “graduation pathway”, we focus in a second step on variables that reflect investments in productive activities and can lead to first steps of graduation out of poverty. These variables contain creation of non-farm businesses, purchase of livestock, and agricultural production. In a last step, we will focus on variables that can be seen as final outcomes of the EEP such as overall wealth, poverty, food security and ability to deal with shocks (resilience).

The remainder of this paper is organised as follows: Section 2 introduces the main feature of the EEP. Section 3 presents in greater detail the evaluation setting, the way the study is designed, as well as the sampling strategies along with the methods used to analyse the data. In Section 4 we carry out an attrition analysis to verify that there are no biases in our estimates due to the inability to track households or missing information in the endline survey. Descriptive information is provided in Section 5, while Section 6 presents and discusses the estimates of the impacts of the overall programme as well as the impacts of each individual treatment group on many outcome variables. Section 7 examines whether the impacts are different among labour-constrained and non-labour-constrained households. Section 8 discusses the role of the proxy option and its contribution to the project’s effects. Finally, concluding remarks are presented in Section 9.

## 2 Project design

The Economic Empowerment Pilot Project in the district of Mwanza in Malawi is implemented by COMSIP and the Government of Malawi with the support of the GIZ Social Protection Programme within the country-wide Social Cash Transfer Programme (SCTP) that was initially launched in 2006. The SCTP is targeted specifically at households that are both ultra-poor and labour-constrained. The coverage per district is limited to 10 per cent of all households. Those households receive bimonthly payments that vary based on household size and the number of children enrolled in primary and secondary school.<sup>3</sup>

The intention of cash transfer programmes like the one in Malawi is to provide social assistance in order to support the beneficiaries in meeting their basic consumption needs. They are not intended to enable beneficiaries to graduate out of poverty (in the sense that their livelihoods are sufficiently strengthened through programme participation to prevent them falling back into poverty once they are no longer in the programme). For this reason, the economic empowerment pilot project tried to close this gap and aimed at enabling SCTP beneficiaries to enter a “graduation pathway” through a combination of transfers, skills development, and cash for investments. Due to budget constraints, the pilot project was implemented in six clusters (small geographical units) in Mwanza and consisted of the following components:

- **A training package:** Households in two village clusters received training on group formation, financial literacy and business management, which included case studies for business investment. The group formation was meant to lead to the formation of COMSIP Village Savings and Loans (VSL) groups. VSL groups are an instrument –

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3 The amount per household varies from between the equivalent of USD 4 and USD 13.

widespread in Malawi – to promote pooled savings and to give out loans among the group members. The trainings took place from January to May 2016. Counselling was on demand but was to be proactively offered by the Community Social Support Committee (CSSC),<sup>4</sup> which in each cluster consisted of six extension workers and six volunteers from the communities. In July 2016, the training component included coaching and mentoring by district staff. It consisted of four refresher training sessions (two training sessions on financial literacy, one training session on business management and one training session on environmental and social safeguards), which were combined with monitoring visits. This additional training ended in December 2016.

- **A lump-sum payment:** Households in two village clusters obtained a payment of MWK 50,000 (USD 70) which could be used for business investment. This amount, which did not change depending on household size, was equivalent to about 58 per cent of the 2013 annual national poverty line (MWK 85,852) and 94 per cent of the ultra-poverty (or food poverty) line (MWK 53,262) (Abdoulayi et al., 2016). Households were informed about this lump-sum payment one month in advance and were asked about their primary spending intentions. The payment took place on 15 June 2016. An information leaflet was distributed at the time of payment to remind the beneficiaries that this was a one-off transfer, and separate from the cash transfers they received on a regular basis. The leaflet also highlighted the objective of the pilot project and suggested that the funds could be used for productive purposes. Having said that, the households were free to decide on what to spend the money.
- **A lump-sum plus training:** Households in two village clusters received a combination of the two interventions described above.

Most of the recipient households were labour-constrained, that is, households were without any members between 19 and 64 years old who were fit for work or had an overall dependency ratio above 3.<sup>5</sup> For this reason, the project offered the beneficiary the option of choosing a proxy, namely someone who would attend the training or engage in business activities on his/her behalf. This is an innovative feature of the project, which sees beneficiaries as potential entrepreneurs or investors.

### 3 Evaluation design, sampling and methods

The impact assessment for the Economic Empowerment Pilot Project was carried out with an experimental study design, using longitudinal information. A mixed methods approach was employed, where results from quantitative surveys were triangulated with findings from qualitative interviews. The quantitative survey design consists of a **cluster-randomised control trial** using the targeting registry of the Social Cash Transfer Programme as a baseline survey. The registry consists of all households that are beneficiaries of the SCTP in the districts of Mwanza and Neno. Basic household characteristics and specific information

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4 The CSSC was formed by the SCTP and assumes, for instance, targeting tasks in the community.

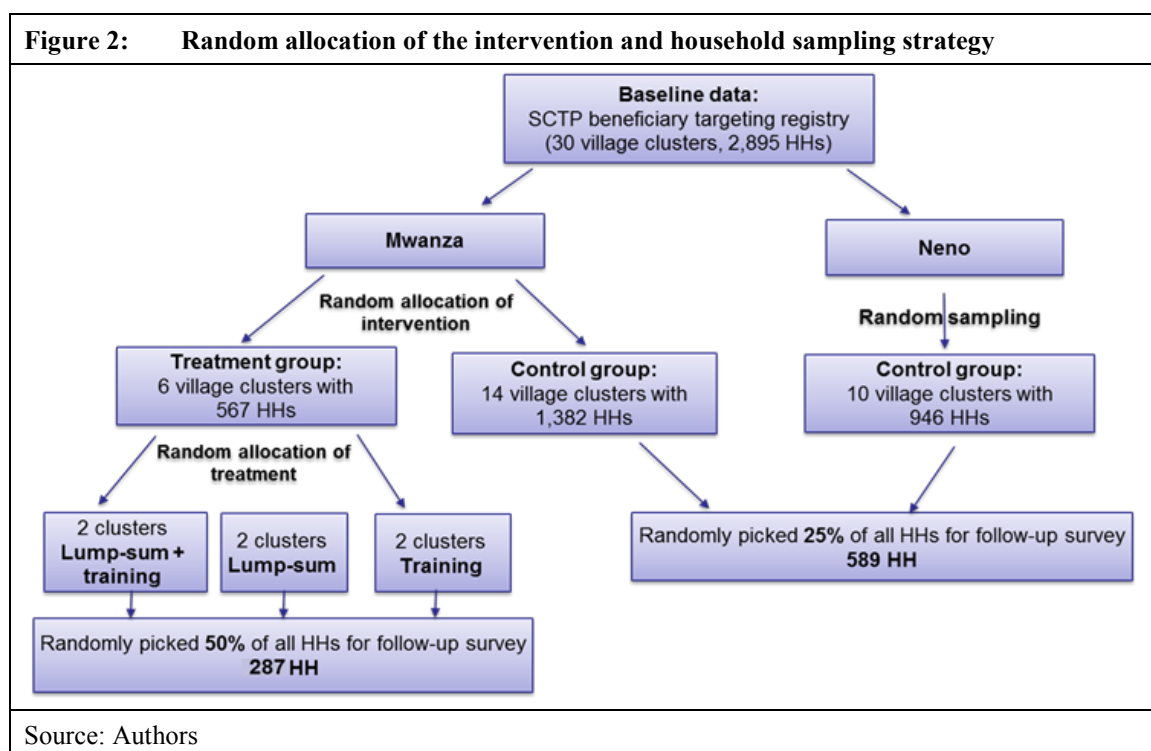
5 The exact formula for the calculation of the dependency ratio is the following:

$$\text{Dependency ratio} = \frac{(\text{Household size})}{\sum(19 - 64 \text{ fit for work}) - \sum(19 - 25 \text{ attending school})}$$

about the beneficiary and the household members were collected between November 2014 and January 2015, that is, before the implementation of the pilot project. As the training component of the project was implemented between January and July 2016 and the lump-sum payment was made in June 2016, the follow-up survey was conducted by DIE between June and July 2017.

The qualitative survey consists of a longitudinal study of 30 treatment households using a semi-structured household questionnaire. The in-depth interviews with these households were conducted one, three and ten weeks after the lump-sum payment. Furthermore, we arranged meetings with all 10 VSL groups that had been formed as a result of the training. During these meetings, we gathered information through focus group discussions. The main aim of our qualitative research was to explore for what purpose the beneficiaries had spent the lump-sum transfer and to provide the necessary orientation for the quantitative assessment, by identifying all relevant impact channels and possible barriers to investment and business activities. For more details and the results of our qualitative assessment of the pilot project see our qualitative survey report (Beierl et al., 2017).

The six treatment clusters were randomly selected out of the 20 clusters from Mwanza district. Among the six clusters, we randomly assigned two clusters to each of the three treatment groups (lump-sum plus training; lump-sum; and training) (see Figure 2). The remaining 14 clusters form the control group.



For the random selection of the intervention clusters, we used a two-step approach. First, we used household baseline data (SCTP household registry data) of the beneficiaries to build strata of comparable clusters with regard to the average educational level and the population size of the clusters. We randomised the treatment within six strata (six different combinations of average education level and cluster population size) in order to ensure that the resulting treatment and control group were balanced with regard to the

stratification criteria. Furthermore, we applied a min/max t-stat method to assure balance for further important baseline criteria that could not be accounted for in the stratification because of dimensionality reasons. Examples of such “secondary” balancing criteria are housing, age, land ownership, the food security situation, and household assets. After verifying that the randomisation worked and the treatment group and control group were not fundamentally different at the baseline, we randomly select three pairs of clusters out of the six treatment clusters according to the three treatment groups. We provide further balance tables for the three treatment groups in comparison to the control group and find no statistically significant differences between the groups at baseline. In a last step, we decided to increase the statistical power of the study by expanding the control group. Ten additional clusters out of 30 clusters from the closest neighbouring district of Mwanza were randomly selected and included in our control group. As the district of Neno is very similar to Mwanza in socio-economic terms, treatment and control group still do not reveal statistically significant differences.

As the final control group consists of 24 clusters, while the treatment group includes only 6 clusters, we applied a proportional sampling strategy at the cluster level. Using our baseline data, 25 percent of all SCTP households in the control group were randomly selected and surveyed in the follow-up sample. The same was done for 50 percent of all SCTP households in the treatment group. In order to check if the treatment and control groups are balanced across all baseline variables, we provide balance tables that show the means of the baseline variables (see Table 1 and 2). As can be seen from the p-values, two-sided tests of equality of the values for the two compared samples do not reveal statistically significant differences. This indicates that treatment and comparison groups are balanced across all baseline variables. We further checked whether each of the three treatment groups (lump-sum plus training, lump-sum, and training) is fundamentally different from the control group. We only find some minor differences in some of the baseline characteristics (see Table A1 to A3 in the Appendix).<sup>6</sup>

Assessing the project impact requires that we estimate what would have happened if the project had not been implemented. This requires having a comparison group, which is a group with characteristics as similar as possible to the project intervention areas but without the interventions. As our control group meets this requirement (see Table 1 and 2), we estimate programme impact by comparing the treatment group and its different treatment arms with the control group using outcome indicators of the follow-up survey. The validity of the impact estimates obtained by this design depends on the assumption that the condition of the comparison group provides a good approximation of the condition that would have occurred in the project areas if the project had never been implemented. Although the randomised nature of the study allows us to be comfortable with that assumption, we also consider individual and household characteristics from the baseline survey, when we estimate the impact of the project, that are not affected by the intervention, for example, beneficiary age, beneficiary sex, school attendance of the beneficiary, chronic illness status of the beneficiary, disability status of the beneficiary, marital status of the beneficiary, changes in household size, number of children in primary school, number of non-labour-constrained household members, housing conditions, asset

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6 Minor differences in the asset wealth quantiles can be found between the lump-sum plus training and control group.

wealth index and participation in other assistant programmes (MVAC (Malawi Vulnerability Assessment Committee Programme), FISP (Food Input Subsidy Programme), School-Meals). In order to measure the overall impact of the project we use the following model:

$$Y_{ihc} = EEP_c \beta + X_{ihc}\gamma + \varepsilon_{ihc} \quad (1)$$

where,  $Y_{ihc}$ , represents the outcome of interest from the follow-up survey for respondent  $i$  of household  $h$  residing in cluster  $c$ , while  $EEP_c$  is a binary variable set to 1 if cluster  $c$  is in the project area, and to 0 if it is in the control area.  $X_{ihc}$  represents a set of individual and household characteristics from the baseline survey as described above and  $\varepsilon_{ihc}$  is the usual error term. The main coefficient of interest is  $\beta$  which indicates the impact of the overall project as compared to the control group, controlling for differences in the observed individual and household characteristics. As we are also interested in the impact of the different treatment arms, we augment equation (1) as follows:

$$Y_{ihc} = LT_c \beta_1 + L_c \beta_2 + T_c \beta_3 + X_{ihc}\gamma + \varepsilon_{ihc} \quad (2)$$

where,  $LT_c$  is a binary variable that indicates whether the cluster  $c$  receives the lump-sum payment and the training component.  $L_c$  represents a binary variable that shows if the cluster receives just the lump-sum payment, while  $T_c$  is also a binary variable which represents if the cluster receives the training component. As we include all three indicators of the treatment arms, the coefficients of interest  $\beta_1$ ,  $\beta_2$  and  $\beta_3$  give the impact of the respective treatment arm compared to the control group. Both models are estimated with regression analysis methods applied to data from households that provided information in both the baseline and follow-up survey. Non-linear regression methods (logit or Poisson regressions) were applied for the outcome variables with binary or count structure. Standard errors are corrected for clustering at the village cluster level.

#### 4 Attrition analysis

Attrition occurs when households from the baseline sample are missing in the follow-up surveys. There are different reasons why households do not respond 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 wave of data collection. Attrition can cause problems for an impact assessment because it not only decreases the sample size (leading to less precise estimates of programme impact) but can also introduce bias into the sample of analysis. If attrition is selective, it can lead to incorrect programme impact estimates, or it can change the characteristics of the sample and, therefore, affect the representativeness of the 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 when individuals leave the sample. Differential attrition can create biased samples by reducing or eliminating the balance between the treatment and control groups achieved at baseline. 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. In addition, overall attrition can affect the ability of the study's findings to be generalised to the population of interest.



Ideally, both types of attrition should be null or negligible. We investigated attrition by testing for similarities at baseline between treatment and control groups for all households interviewed at baseline and at the follow-up (differential attrition) and, all households in the population and the households who were in the follow-up survey (overall attrition). Fortunately, we do not find evidence of differential attrition, meaning that we were able to preserve the balance between the treatment and control groups found in the baseline survey. Furthermore, we do not find evidence of overall attrition in the sample.

#### 4.1 Differential attrition

We were able to retain most of the baseline households across the three waves of surveys: 90 per cent of the baseline households (786) were also re-interviewed in the follow-up survey. Consequently, overall attrition in the total sample is low, at 10 per cent, and it is balanced between the treatment (10.0 per cent) and control (10.8 per cent) groups. Furthermore, it is also balanced across the three treatment groups and the control group. To further explore differential attrition, we tested 17 household and individual background variables for statistical differences at baseline between the treatment groups and the control group. Table 2 shows the statistical differences between the treatment and control groups for the original sample including the missing observations, while Table 3 shows the differences excluding these observations. We find no statistical difference in the indicators. These results demonstrate that the average baseline characteristics of the households that remained in the sample were similar for the treatment and control group. The balance in the sample between treatment statuses allays the concern that attrition introduced a selection bias.

Baseline variables (2014/2015)	6 pilot clusters (mean)	24 control clusters (mean)	Difference in means	p-value
School attendance beneficiary (1/0)	0.473	0.494	-0.020	0.57
Female beneficiary (1/0)	0.742	0.774	-0.032	0.29
Age of beneficiary	61.14	60.06	1.076	0.45
Married beneficiary (1/0)	0.258	0.221	0.037	0.22
Number of household members	3.603	3.783	-0.179	0.21
Number of household members aged 19-65 (fit for work)	0.554	0.585	-0.031	0.63
Disabled beneficiary (1/0)	0.195	0.187	0.008	0.76
Chronic illness beneficiary (1/0)	0.191	0.202	-0.010	0.72
Own land (1/0)	0.965	0.934	0.031	0.16
Number of meals per day (1/0)	1.480	1.424	0.056	0.14
1st quantile wealth assets index (1/0)	0.338	0.317	0.020	0.54
2nd quantile wealth assets index (1/0)	0.282	0.264	0.017	0.59
3rd quantile wealth assets index (1/0)	0.200	0.185	-0.016	0.58
4th quantile wealth assets index (1/0)	0.195	0.217	-0.022	0.45
House: grass roof (1/0)	0.909	0.878	0.032	0.16
House: cement floor (1/0)	0.041	0.032	0.009	0.47
House: brick wall (1/0)	0.310	0.329	-0.019	0.57
Number of households	287	589		
Source: Authors				

<b>Table 3: Balance table – sample excluding the missing observations (786 observations)</b>				
Baseline variables (2014/2015)	6 pilot clusters (mean)	24 control clusters (mean)	Difference in means	p-value
School attendance beneficiary (1/0)	0.492	0.504	-0.011	0.76
Female beneficiary (1/0)	0.742	0.777	-0.035	0.28
Age of beneficiary	59.78	58.13	1.655	0.26
Married beneficiary (1/0)	0.269	0.221	0.049	0.13
Number of household members	3.664	3.843	-0.179	0.23
Number of household members aged 19-65 (fit for work)	0.515	0.609	-0.094	0.17
Disabled beneficiary (1/0)	0.191	0.179	0.012	0.68
Chronic illness beneficiary (1/0)	0.180	0.181	-0.001	0.96
Own land (1/0)	0.965	0.938	0.027	0.12
Number of meals per day (1/0)	1.484	1.432	0.052	0.19
1st quantile wealth assets index (1/0)	0.332	0.311	0.021	0.56
2nd quantile wealth assets index (1/0)	0.281	0.277	0.004	0.91
3rd quantile wealth assets index (1/0)	0.160	0.156	0.003	0.90
4th quantile wealth assets index (1/0)	0.226	0.255	0.028	0.39
House: grass roof (1/0)	0.902	0.875	0.027	0.27
House: cement floor (1/0)	0.043	0.034	0.009	0.53
House: brick wall (1/0)	0.308	0.347	-0.038	0.28
Number of households	256	530		
Source: Authors				

## 4.2 Overall attrition

90 per cent of the households from the baseline remain in the panel sample. Even though we have a low attrition level, we further explored overall attrition by testing 17 background variables for differences at baseline between the group of households that remained in the sample and the overall population (Table 4). We find no statistical differences in any of the indicators, which shows that overall attrition does not affect the study results. This implies that our study's findings can still be generalised to the population of interest.

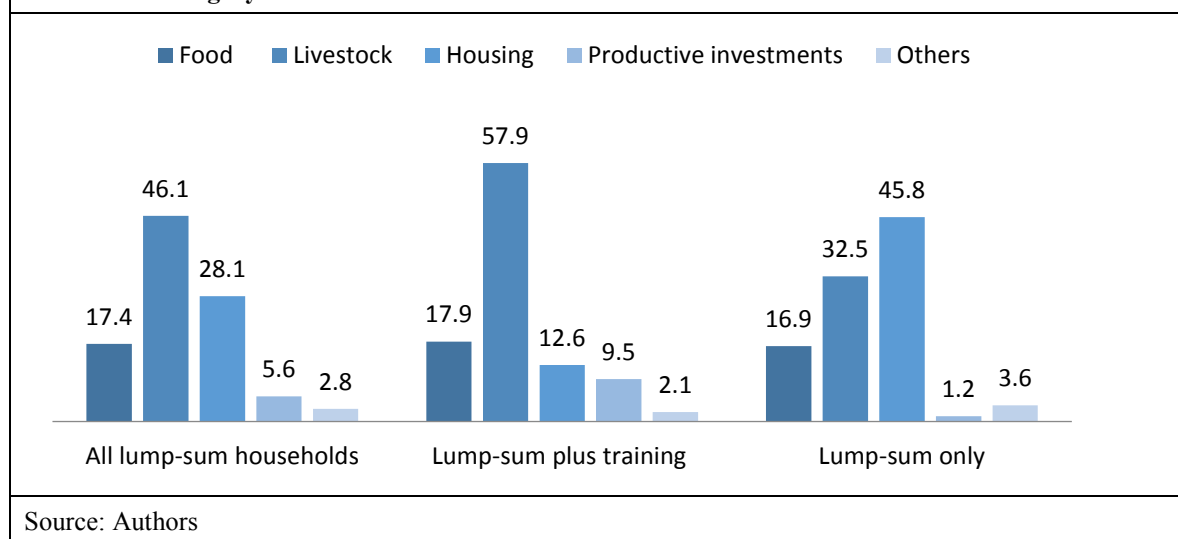
Baseline variables (2014/2015)	Sample (mean)	Population (mean)	Difference in means	p-value
School attendance beneficiary (1/0)	0.464	0.439	0.025	0.21
Female beneficiary (1/0)	0.766	0.746	0.020	0.25
Age of beneficiary	60.04	61.32	-1.27	0.11
Married beneficiary (1/0)	0.237	0.249	-0.013	0.45
Number of household members	3.784	3.730	0.054	0.51
Number of household members aged 19-65 (fit for work)	0.558	0.592	-0.034	0.61
Disabled beneficiary (1/0)	0.205	0.204	0.001	0.92
Chronic illness beneficiary (1/0)	0.180	0.192	-0.012	0.66
Own land (1/0)	0.946	0.959	-0.012	0.13
Number of meals per day (1/0)	1.449	1.429	0.020	0.32
1st quantile wealth assets index (1/0)	0.319	0.316	0.002	0.66
2nd quantile wealth assets index (1/0)	0.272	0.264	0.008	0.82
3rd quantile wealth assets index (1/0)	0.196	0.177	0.018	0.23
4th quantile wealth assets index (1/0)	0.212	0.241	0.028	0.18
House: grass roof (1/0)	0.884	0.893	-0.010	0.43
House: cement floor (1/0)	0.037	0.026	0.011	0.11
House: brick wall (1/0)	0.335	0.310	0.024	0.19
Number of households	786	2,895		
Source: Authors				

## 5 Descriptive findings

In a first step we explore for what purpose the beneficiaries used the lump-sum transfer. The main uses of the lump-sum transfer can be classified into the following five categories: 1) food; 2) livestock; 3) housing; 4) productive investments which consist of farming inputs and tools (such as hoes); and 5) others. The category “others” consists mostly of clothes, education and health. As we asked for the first and second spending priority, the patterns of lump-sum use for the first priority are highlighted in Figure 3, while the use of the lump-sum transfer for the second spending priority is highlighted in Figure 4. Thus, we are able to ascertain what was the most important and second-most important purpose of using the lump-sum transfer. If we consider the entire group of beneficiaries who received the lump-sum, they rank livestock as their most important expenditure category. 46 percent of all 170 lump-sum transfer recipients used their lump-sum transfer predominately for livestock, followed by housing (28 per cent), food (17 per cent) and productive investments (6 per cent). These findings are in line with the results of the qualitative survey (Beierl et al., 2017). Livestock is generally considered a productive asset as it can be used for breeding, rearing and obtaining products such as milk or eggs, that can be sold later at a higher price (see, for instance, Abdoulayi et al., 2016). Given its peculiar nature, we decided to keep the category “livestock” separate from other productive investments, which consists of business/farming inputs and tools (such as hoes). If we aggregate both spending categories, we find that 52 per cent of all lump-sum transfer recipients used their lump-sum transfer for productive activities.

There is, however, a very different pattern of expenses for the lump-sum plus training and lump-sum only group. 58 per cent of all beneficiaries in the first group reported spending the lump-sum mainly on livestock, while only 32.5 per cent of the lump-sum only group used the transfer for livestock. Additionally, a similar pattern can be found for the other productive investments: 9.5 per cent in the lump-sum plus training group versus 1.2 per cent in the lump-sum only group. These findings are in line with the logic of the project: beneficiaries who are trained in financial literacy and business-related matters are more inclined to use the lump-sum transfer for productive purposes compared to lump-sum only beneficiaries.

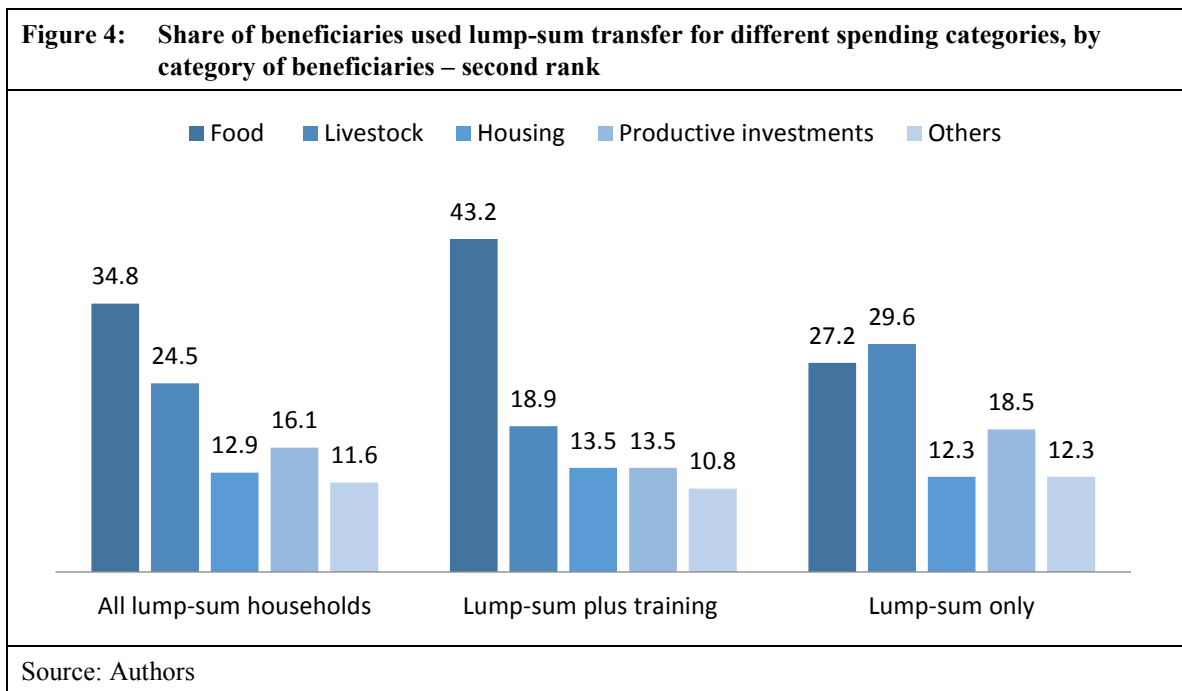
**Figure 3: Share of beneficiaries used lump-sum transfer for different spending categories, by category of beneficiaries – first rank**



Housing is the second largest expenditure category: 28 per cent of all lump-sum recipients used the transfer mainly for housing expenses. Most of the expenses that fall into this category were directed towards the purchase of iron sheets and, to a lesser extent, for other housing materials. This aggregate result is, again, the consequence of the very different behaviour of the two groups of beneficiaries. Housing is the first expenditure category for lump-sum only recipients: 46 per cent of these beneficiaries used the lump-sum transfer for that purpose. This share is significantly lower (13 per cent) among recipients of both the lump-sum and training. Given that this use of the capital is for consumption purposes, it is not surprising to find that training reduces the incentives to rely on this type of expenses.

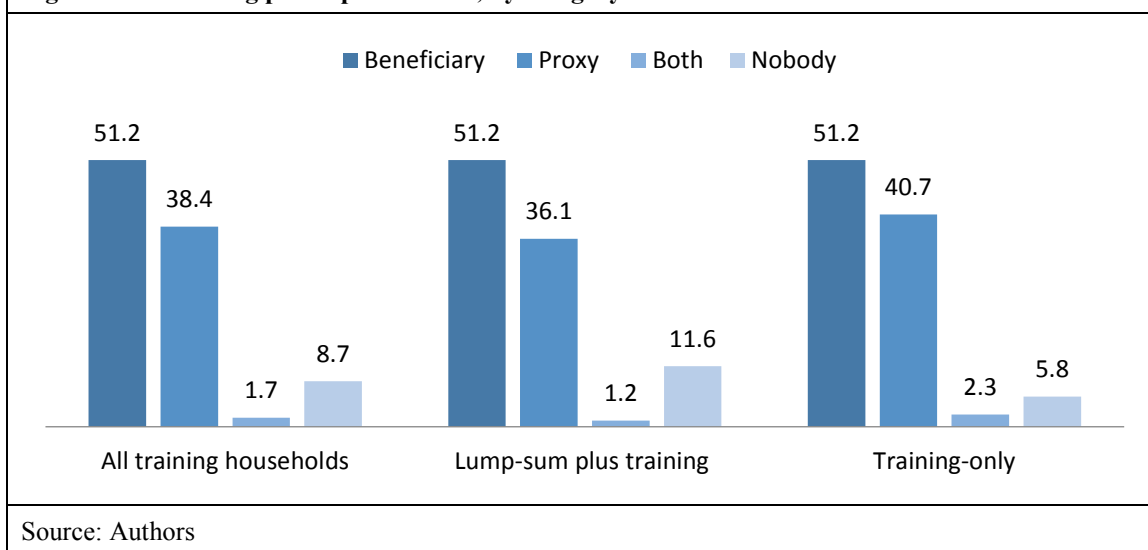
Food is the third-largest expenditure category, with 17.4 per cent of the recipients reporting that they used the lump-sum transfer for purchasing food. Our qualitative interviews showed that most households were severely affected by the 2016/2017 drought so that the food security situation of most interviewed households became critical. The situation was aggravated by the widespread exclusion of Social Cash Transfer Beneficiaries from emergency free-maize programmes. For this reason, some households used the lump-sum to purchase food. The qualitative interviews confirmed that maize was mainly purchased in particular and that it was viewed as a fundamental consumption good. These considerations work for both groups of beneficiaries, as no significant difference is found between lump-sum plus training and lump-sum only beneficiaries.

In light of the illustrated descriptive evidence on the main use of the lump-sum transfer, we can conclude that a substantial part (52 per cent) directly used the lump-sum for productive purposes, that is, to buy livestock or other productive assets. If we turn to the findings of the use of the lump-sum transfer for the second spending priority (see Figure 4), a slightly different pattern emerges. It seems that in second place most lump-sum recipients used the transfer for food purchases (35 per cent). This is especially the case for those beneficiaries that received lump-sum plus training (43 per cent). This finding reflects the food security situation regarding the drought between 2016 and 2017. Due to the high price of maize during this period, the regular Social Cash Transfer Payments were often not sufficient to purchase enough maize for the household, which may have caused many beneficiaries to use the lump-sum to buy food at the second stage.



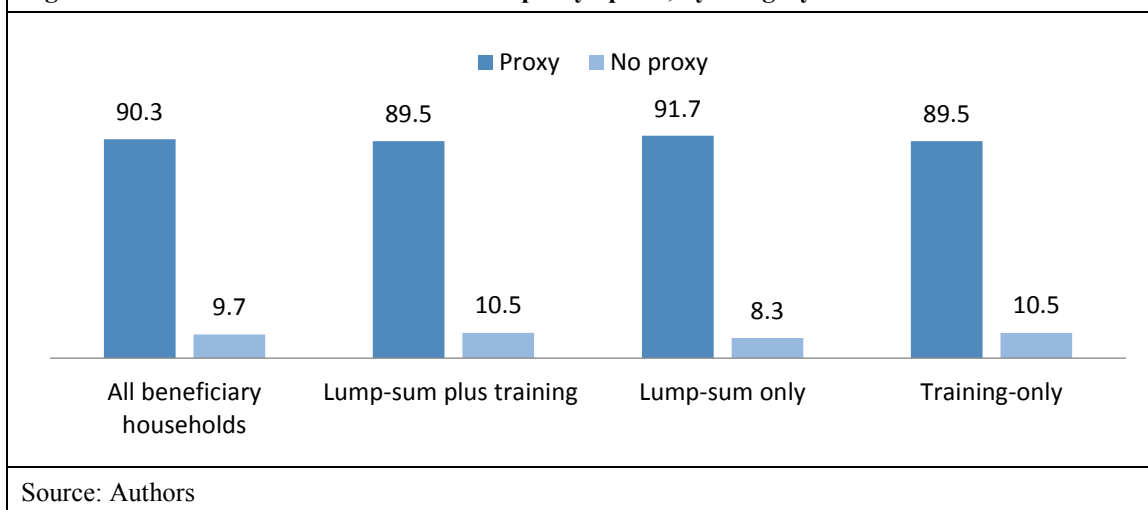
In a second step, we explore how many beneficiaries of the village clusters that received the training component actually attended the training sessions. As most of the recipients are labour-constrained, the project offered to the beneficiary the option of choosing a proxy (another person) who would attend the training on his/her behalf. Hence, we also checked how often the beneficiaries used this option. Figure 5 shows the participation rates of the 172 project beneficiaries who were eligible for the training. More than half of the beneficiaries attended the training sessions alone (51 per cent); 1.7 per cent of them attended the training together with the proxy; while 38.4 per cent of the beneficiaries sent their proxy to attend the training alone. About 9 per cent of them neither attended the training by themselves nor sent their proxy. This share of non-participation is higher in the lump-sum plus training group (11.6 per cent) as compared to the training-only group (5.8 per cent).

**Figure 5: Training participation rates, by category of beneficiaries**



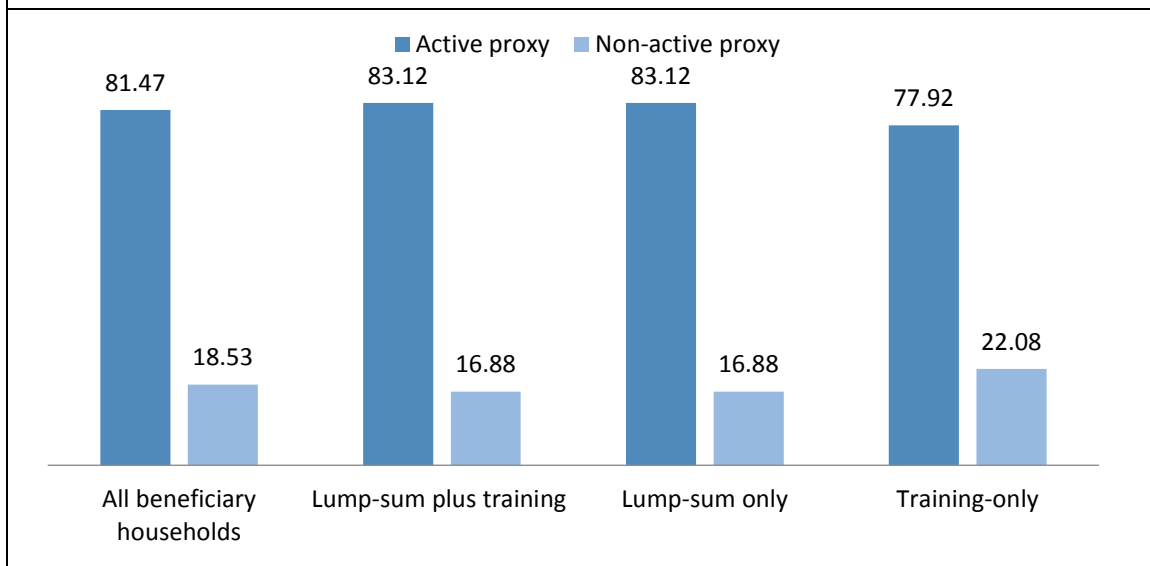
In a third step, we explore how many of the 256 project beneficiaries have used the proxy option and for what purpose they have actually used the proxy (for example, to attend the training, invest the lump-sum transfer etc.). As shown in Figure 6, the vast majority of project beneficiaries (90.3 per cent) have used the proxy option, while only 9.7 per cent have not. We find only small differences between the treatment groups. The majority of the 232 proxies does not live in the same household as the beneficiary (69 per cent).

**Figure 6: Share of beneficiaries that used proxy option, by category of beneficiaries**



For those beneficiaries who opted for having a proxy it is worth examining whether the proxy had an “active” or “non-active” role. We defined a proxy as “active” if she/he undertook at least one project activity on behalf of the beneficiary. These activities included participation in training, collecting the lump-sum transfer, advising on how to use the money (lump-sum transfer and/or loan from VSL groups) and if they joined a VSL group. If the beneficiaries reported that the proxy had carried out no activity on their behalf, we classified the proxy as “non-active”. As visualised in Figure 7, roughly 81 per cent of the 232 beneficiaries that used the proxy option had a proxy with an active role, while about 19 per cent were considered “non-active”. We do not find any remarkable differences across the different treatment groups.

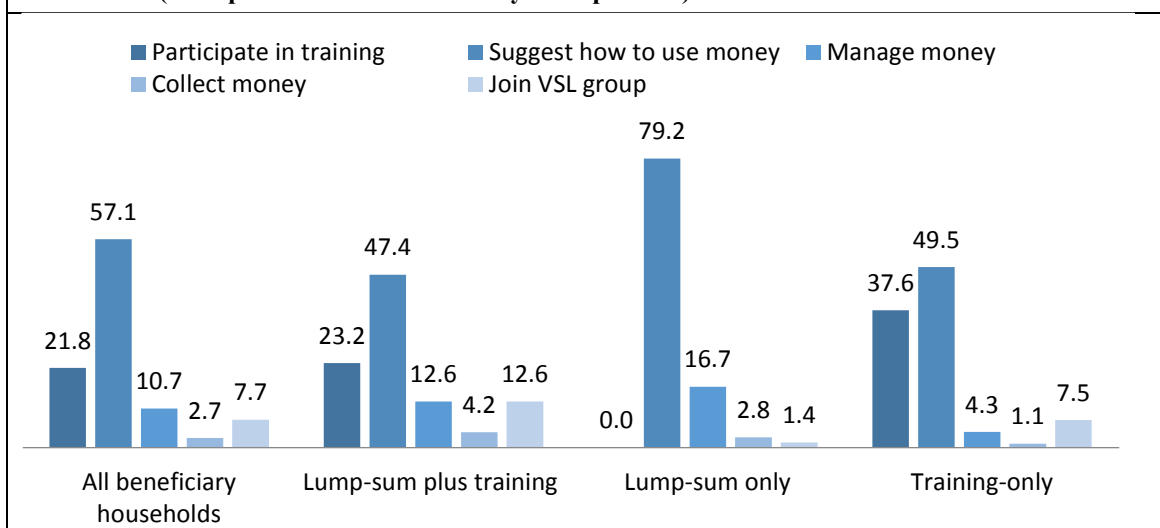
**Figure 7: Share of beneficiaries that used the proxy option with active or non-active proxy, by category of beneficiaries**



Source: Authors

In Figure 8, we examine what kind of activity the proxies did on behalf of the beneficiaries. This analysis was only carried out on the group of project beneficiaries with an active proxy. Beneficiaries were allowed to name all activities of the proxies and, thus, multiple answers were possible. Most proxies answered that proxies acted as advisers on how to use money (57 per cent) and participated in the training (22 per cent). Within the lump-sum plus training group, most of the beneficiaries reported that the proxy contributed by joining the VSL groups or by managing their money. Most of the lump-sum only group proxies advised the beneficiary on how to use money (most likely the lump-sum transfer). The proxies of the training-only group mainly answered that they participated in the training session and suggested how to use the money, which may reflect some sort of knowledge transfer regarding the training content from the proxy to the beneficiary.

**Figure 8: Type of activities of active proxy, by category of beneficiaries (multiple answers of beneficiary were possible)**



Source: Authors

## 6 Results

The analysis of the results of the quantitative impact assessment starts with the variables that are influenced by the project almost directly and over a very short time, such as financial literacy; participation in the Village Savings and Loan (VSL) groups; and amount of savings and loans. As the EEP plans to put beneficiaries on the “graduation pathway”, we focus in a second step on variables that reflect investments in productive activities and that can lead to initial steps of the graduation out of poverty. These variables include creation of non-farm businesses; purchase of livestock; purchase of assets and agricultural production. Finally, we investigate the project impacts on measure of well-being, such as food security, consumption, poverty and the ability to deal with shocks (drought resilience).

### 6.1 Financial literacy

The project intended to increase beneficiaries’ knowledge about several financial and business issues. In order to assess whether it succeeded from that point of view, respondents were required to answer 15 multiple-choice questions during the survey. Each question entailed only one correct answer. The number of correct answers was then used to measure beneficiaries’ knowledge. Since the survey was conducted more than one year after the end of the training, we could assess not only whether the project had been effective in providing financial and business knowledge but also whether beneficiaries retained such knowledge after more than one year. On average, the project beneficiaries answered 10.4 questions in a correct way, while the control group answered 10 questions correctly (see Table A4 in the Appendix). If we turn to our estimation results that also include control variables, the overall project has significantly increased financial/business literacy (Table 5). Beneficiaries answered correctly, on average, more than half a question more. We find the highest impacts in the lump-sum plus training and training-only treatment groups, where the training managed to increase the number of correct answers by about 0.8 of a question (that is, beneficiaries in this group answered correctly almost one question more than the control group). As expected, the provision of the lump-sum transfer alone did not affect significantly financial literacy.

	(1)	(2)
<b>Variables</b>	<b>Financial literacy index</b>	<b>Financial literacy index</b>
Project	0.581*** (0.135)	
Lump-sum plus training		0.799*** (0.167)
Lump-sum only		0.189 (0.159)
Training-only		0.710*** (0.0858)
Observations	778	778

Notes: Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. The specifications include standard control variables from the baseline survey that are not affected by the intervention such as beneficiary age, beneficiary sex, school attendance of the beneficiary, chronic illness status of the beneficiary, disability status of the beneficiary, marital status of the beneficiary, changes in household size, number of children in primary school, number of non-labour-constrained household members, housing conditions, asset wealth index, participation in other assistant programmes (MVAC, FISP, School-Meals). Standard errors are clustered at the district cluster level.

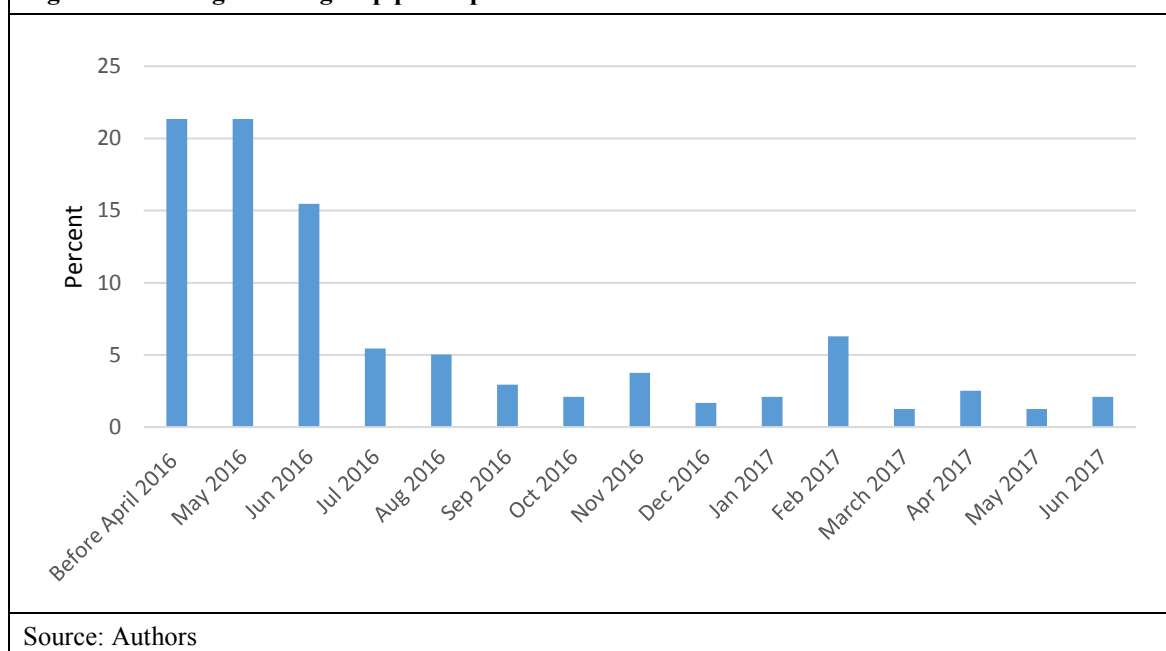
Source: Authors



## 6.2 Savings and loans

As the training component was meant to lead to the formation of COMSIP Village Savings and Loans (VSL) groups, we checked when the beneficiaries of the training clusters joined a VSL group. Figure 9 shows that most of the beneficiaries joined the VSL groups before June 2016. Given that COMSIP’s financial and business training lasted from January to May 2016, these VSL groups were founded during the training sessions or, in a few cases, immediately afterwards. The group formation module took place in January 2016 while the financial literacy module took place between March and April 2016. As VSL groups are an instrument to promote pooled savings and to give out loans among the group members, we test whether there are differences in means between the treatment and control group in savings and loans (see Table A4 in the Appendix). We find that the overall project increases savings uptake by 26 percentage points. This result is very similar with our impact estimates of the project on savings uptake (see Table 6). This substantial increase is due to higher participation rates in VSL groups as we only find a raise in savings uptake in the lump-sum plus training and the training-only group (see column 2 of Table 6). We also find an increase in the amount of savings by 4,400 MWK, which corresponds to a relative increase of 80 percent compared to the control group. In line with the results on the saving uptake, we also find a substantial increase in the amount of savings in the treatment arms including training (of between 5,000 MWK and 7,000 MWK).

**Figure 9: Timing of VSL group participation**



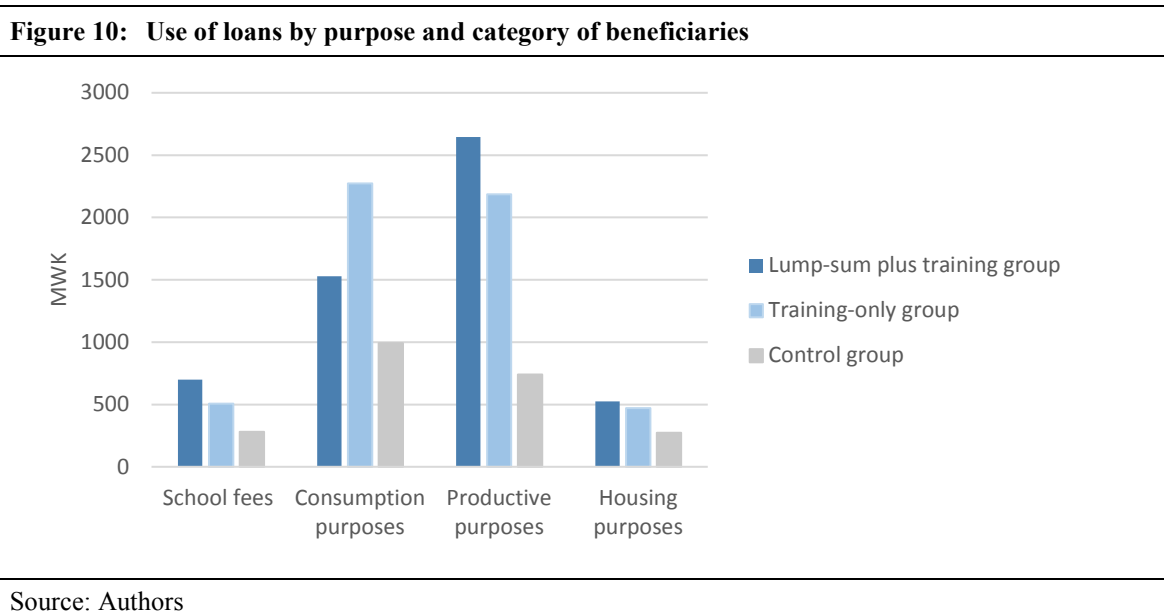
Parallel to the increase in savings, we also find a raise in loan uptake by 19 percentage points and in the amount of loans by 2,000 MWK which corresponds to a relative increase of 85 percent compared to the control group. Beneficiaries of the training-only group exhibit the highest loan uptake of 35 percentage points, while the lump-sum plus training group have a 17 percentage point higher loan uptake. In contrast, to the differences in the probability of loan uptake, changes in the amount of loan are similar between the training-only group (3,500 MWK) and the lump-sum plus training group (3,000 MWK), while we do not find any effect for the lump-sum only group.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variables	Saving uptake (yes/no)	Saving uptake (yes/no)	Amount savings (MWK)	Amount savings (MWK)	Loan uptake (yes/no)	Loan uptake (yes/no)	Amount loan (MWK)	Amount loan (MWK)
Project	0.263*** (0.0761)		4,408*** (1,369)		0.186** (0.0724)		2,018** (863.4)	
Lump-sum plus training		0.339*** (0.0335)		5,237*** (971.4)		0.171*** (0.0527)		3,005*** (516.8)
Lump-sum only		0.0159 (0.0684)		909.3 (2,026)		-0.0635 (0.0730)		-610.2 (518.8)
Training-only		0.444*** (0.0498)		6,899*** (959.8)		0.354*** (0.0125)		3,503*** (400.6)
Observations	786	786	784	784	786	786	786	786

Notes: Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. The specifications include standard control variables from the baseline survey that are not affected by the intervention (see Table 4 for detailed list of control variables). We have applied the logit model for binary outcome variables and show the marginal effects. Standard errors are clustered at the district cluster level.

Source: Authors

As we find an increase in loan uptake for the lump-sum plus training and training-only groups, we explore the usage of loans. We calculate the average amount of loans for four different loan categories, that is, school fees, consumption purposes (contains clothes and food), productive purposes (contains farm tools and business inputs) and housing purposes (contains housing utensils and housing investments). It appears that the lump-sum plus training group takes a higher amount of loans for productive purposes and less for consumption purpose as compared to the training only and control group. In contrast, the training only group takes on average a similar amount of loans for productive and consumption purposes.



### 6.3 Non-farm business activities and labour supply

The specific objective of the EEP is to put the beneficiaries onto the “graduation pathway”, so that they can exit poverty and dependence on social assistance in the mid- to long term. One way of reaching this specific objective was to foster non-farm business activities such as petty trading or brewing activities that could serve as an additional income source especially during the lean season. For that reason, the training component also contained business management training, which included case studies for business investment. We check whether the project led to the start of new non-farm businesses during the previous 12 months and find that the overall project has significantly increased the probability of starting new non-farm business activities, but that the magnitude of this impact is not large. Seven percent of all beneficiaries in the treatment group started a non-farm business while only 2 percent have done the same in the control group (see Table A4 in the Appendix). Our impact estimates reveal the same results: the project beneficiaries have a 5 percentage points higher probability of initiating a new business compared to the control group (see Table 7). While 10 out of 530 households have started a business in the control group, 18 out of 256 households started one in the treatment group. The treatment groups that received (business) training were responsible for this effect. The size of the effect is largest for the treatment group that received training along with a lump-sum payment (8 percentage points). This is in line with the finding that those beneficiaries also used their lump-sum payment for new business inputs (see Section 5). Furthermore, this group used a higher amount of loans for productive purposes such as farm tools, business and farm inputs.

If we turn to the amount of sales and profits of the last 30 days before the interview from all non-farm business activities (including the activities of the new non-farm businesses and those that have been established before the project), the project increased sales by 2,000 MWK, which is almost twice as high as the sales of the control group, and profits by 790 MWK, about 1.8 times higher than those of the control group. However, for profits the effects are significant only at the 10 percent level. Similar to the start of non-farm business activities, the training was responsible for these impacts.

We also investigate whether the project has affected external labour supply. This paid work includes all work that the beneficiary had done for a person of another household (namely, *ganyu*, a range of short-term rural labour relationships) and/or institution (such as the local government, school, and so on) in the previous month. Table 8 shows that the overall project did not affect the likelihood of doing paid work and the number of working hours, as all impacts are not statistically significant different from zero. If we turn to the results of the various different project components, we only find a substantial and statistically significant reduction of paid work for the training-only group. This treatment group is 7 percentage points less likely to do any paid work as compared to the control group. The reduction might be explained by the substitution of paid work activities for non-farm business activities that are possibly needed to generate more sales and profits in order to be able to pay the interest on the VSL loans.

	(1)	(2)	(3)	(4)	(5)	(6)
<b>Variables</b>	<b>Start non-farm business (yes/no)</b>	<b>Start non-farm business (yes/no)</b>	<b>Sales of non-farm business (MWK)</b>	<b>Sales of non-farm business (MWK)</b>	<b>Profits of non-farm business (MWK)</b>	<b>Profits of non-farm business (MWK)</b>
Project	0.0506*** (0.0162)		1,965** (898.8)		793.5* (409.7)	
Lump-sum plus training		0.0773*** (0.00721)		2,300** (973.7)		1,065** (491.9)
Lump-sum only		0.00217 (0.0157)		25.99 (483.7)		-1.099 (217.3)
Training-only		0.0392*** (0.00859)		3,429** (1,561)		1,360* (768.2)
Observations	723	723	760	760	760	760

Notes: Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. The specifications include standard control variables from the baseline survey that are not affected by the intervention (see Table 4 for detailed list of control variables). Standard errors are clustered at the district cluster level.

Source: Authors

	(1)	(2)	(3)	(4)
<b>Variables</b>	<b>Paid work (yes/no)</b>	<b>Paid work (yes/no)</b>	<b>Number of working hours</b>	<b>Number of working hours</b>
Project	-0.0447 (0.0325)		-2.705 (1.631)	
Lump-sum plus training		-0.0194 (0.0335)		-2.615 (3.021)
Lump-sum only		-0.0402 (0.0894)		-3.031 (2.474)
Training-only		-0.0756*** (0.0240)		-2.488 (1.643)
Observations	786	786	786	786

Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. The specifications include standard control variables from the baseline survey that are not affected by the intervention (see Table 4 for detailed list of control variables). Standard errors are clustered at the district cluster level.

Source: Authors

## 6.4 Livestock

According to the descriptive findings, many beneficiaries used the lump-sum transfer in order to buy livestock. Livestock production can provide an alternative source of livelihood and food for rural communities. Households that keep livestock alongside crop production have diversified sources of income that can boost household income and food security, as well as enhance their resilience to shocks. The descriptive findings are reflected in our quantitative results. The project increases the per capita number of livestock by 0.29, which corresponds to a relative increase of 30 percent compared to the

control group (see Table A4 and Table 9). This result is mostly triggered by an increase in the number of goats, pigs and piglets.

Given the high differences in the economic value of the different types of livestock, we also built an index of (per capita) livestock wealth. This index reflects the total market value of the entire livestock owned by the household.<sup>7</sup> The results show that the project has a positive and significant impact on per capita livestock wealth, entirely driven by the groups that received the lump-sum transfer. The overall project increases livestock wealth by nearly 7,500 MWK, which corresponds to a raise of 80 percent compared to the control group. As expected, a large share of livestock wealth was accumulated by the project participants in the year before the survey or, more precisely, after receiving the lump-sum transfer. This appears clear from columns (5) and (6) of Table 9, where we investigate the impacts on per capita yearly expenditures on livestock. The Tingathe Economic Empowerment Programme, as a whole, increases per capita expenditures on livestock on average by 6,500 MWK. Also in this case, impacts are only statistically significant among recipients of the lump-sum payment, and not among beneficiaries who participated only in the training. In particular, the treatment group that receives lump-sum payment plus training increased their spending on livestock by 2.4 times as compared to the control group. The result that the impact is significantly larger in the lump-sum plus training group as compared to the lump-sum only group support the finding of the descriptive analysis (Section 5) and of the qualitative study (Beierl et al., 2017). The training increases the productive use of the lump-sum transfer significantly. Comparing the impact of the project on expenditures and wealth of livestock shows that the impact on wealth of livestock is slightly larger. The difference between both values gives the return on the investment in livestock (for example, reproduction of livestock over the last 12 months improves livestock wealth), which is on average 15 percent for the treatment group.

	(1)	(2)	(3)	(4)	(5)	(6)
<b>Variables</b>	<b>Per capita number of livestock</b>	<b>Per capita number of livestock</b>	<b>Per capita wealth of livestock (MWK)</b>	<b>Per capita wealth of livestock (MWK)</b>	<b>Per capita expenditures on livestock (MWK)</b>	<b>Per capita expenditures on livestock (MWK)</b>
Project	0.288** (0.142)		7,462*** (2,129)		6,477** (2,793)	
Lump-sum plus training		0.558*** (0.092)		14,293*** (1,031)		14,061*** (3,595)
Lump-sum only		0.348 (0.284)		5,116*** (1,182)		4,912*** (950.1)
Training-only		0.049 (0.124)		2,702 (1,692)		200.6 (521.5)
Observations	786	786	786	786	786	786

Notes: Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. The specifications include standard control variables from the baseline survey that are not affected by the intervention (see Table 4 for detailed list of control variables). Standard errors are clustered at the district cluster level.

Source: Authors

7 The construction of this index was possible thanks to the collection of livestock prices conducted in the field.

## 6.5 Assets

In order to explore whether the quantity of assets and the asset composition of beneficiary households had possibly changed due to the project, we collected information on the ownership and expenditures on assets over the previous 12 months. The primary source of livelihood for the households living in Mwanza and Neno is crop production. The inability to own and use basic productivity-enhancing tools for farming, such as hoes, may affect the productive efficiency of these households. The project may stimulate the acquisition of agricultural implements and this could result in increased agricultural production. Furthermore, in times of crisis, the acquisition of durable non-agricultural assets could come in handy as collateral to secure a loan from moneylenders or other members of the community or, at worst, be sold in order to deal with the crisis.

We collected information about agricultural assets, such as hoes, *panga* knives, watering cans and sickles, and non-agricultural assets such as chairs, radios, bicycles, beds, mattresses, sleeping mats, and blankets. In a first step, we test whether there are differences in means between the treatment and control group in the overall number of household assets per household member and find that the treatment group has statistically significantly more assets (0.36) compared to the control group (see Table A4 in the Appendix). The differences between the treatment and control group are larger for non-agricultural assets (0.24) as compared to agricultural assets (0.11). However, when we take control variables into consideration, we do not find any statistically significant impacts of the project on the number of assets per household member anymore (see Table 10). The results for the different treatment arms show that the training-only group has 0.28 more assets per household member compared to the control group. Most of these assets are non-agricultural assets (see column 6 of Table 10). We do not find any impacts of the project on the number of agricultural assets, which suggests that probably no productivity-enhancing implements for farming have been acquired by the project beneficiaries.

	(1)	(2)	(3)	(4)	(5)	(6)
<b>Variables</b>	<b>Per capita number of assets</b>	<b>Per capita number of assets</b>	<b>Per capita number of agriculture assets</b>	<b>Per capita number of agriculture assets</b>	<b>Per capita number of non-agricultural assets</b>	<b>Per capita number of non-agricultural assets</b>
Project	0.201 (0.136)		0.073 (0.049)		0.138 (0.109)	
Lump-sum plus training		-0.009 (0.178)		0.070 (0.096)		-0.097 (0.088)
Lump-sum only		0.349 (0.293)		0.059 (0.055)		0.290 (0.251)
Training-only		0.277** (0.130)		0.052 (0.055)		0.214*** (0.084)
Observations	786	786	786	786	786	786

Notes: Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. The specifications include standard control variables from the baseline survey that are not affected by the intervention (see Table 4 for detailed list of control variables). Standard errors are clustered at the district cluster level.

Source: Authors

We also show the results for an asset-based wealth index, which is constructed by aggregating the number of different types of household assets owned (excluding livestock) by means of principal component analysis. If we look at the estimates, we do not find any impact of the project on the asset wealth index (see Table 11). The training-only group has a higher asset wealth index compared to the control group, which is due to the higher number of assets per household member for this treatment group. In columns (3) and (4), we focus on respondent's expenditures (in 2017 prices) on assets in the year preceding the survey. In this case, neither the overall project nor any of the three arms shows a significant impact.

	(1)	(2)	(3)	(4)
Variables	Asset wealth index	Asset wealth index	Per capita exp. on durable assets (MWK)	Per capita exp. on durable assets (MWK)
Project	0.175 (0.190)		179.4 (164.9)	
Lump-sum plus training		-0.0790 (0.275)		-4.822 (165.8)
Lump-sum only		0.00820 (0.253)		516.8 (325.7)
Training-only		0.594*** (0.177)		47.38 (101.1)
Observations	786	786	786	786

Notes: Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Standard errors are clustered at the district cluster level.  
Source: Authors

## 6.6 Agriculture

As discussed in the previous section, agriculture is the primary economic activity in Mwanza and Neno. The project may stimulate investments in farm inputs that enhance agricultural productivity. This could be through investments in improved seed varieties, fertilisers, farm tools/assets, agricultural technology (such as irrigation or soil/water conservation structures) or through crop diversification. Table 12 shows the project impact on the quantity of agricultural production, consumption and sales of the last harvest period. The overall project increases the per capita quantity of the last harvest on average by 42 kg, which corresponds to a relative increase of 24 percent compared to the control group. The coefficient is, however, significant only at the 10 percent level. This impact is due to the lump-sum plus training group that increase their harvest quantity significantly by 50 kg (30 per cent). Interestingly, most of this additional harvest of the lump-sum plus training group was used for own consumption purposes, maybe in order to improve their food security situation. Only 6 kg of the additional harvest were sold, which corresponds to 46 per cent higher quantity of sold harvest as compared to the control group.

In a second step, we turn to the per capita value of the harvest as we collected market prices for all agricultural products in the study region. This is important, as the project – and in particular the lump-sum – may have induced a shift towards cash crops, which

would generate an increase in the *value* of the harvest without necessarily influencing the *quantity* of harvest. Table 13 shows that the results are indeed in line with those on the quantity of harvest: the project increases the per capita value of the harvest, on average, by 3,500 MWK or 18 percent as compared to the control group. This effect is highly significant and substantial for the lump-sum plus training group as they raise their per capita value of the harvest by 6,000 MWK. As most of the additional harvest was used for own consumption purposes, we find a significant increase in the per capita value of the harvest for own consumption by 1,900 MWK of the overall project and by 3,500 MWK of the lump-sum plus training group. If we turn to harvest sales, we find a highly significant increase for the lump-sum plus training group. Their sales increased by around 3,000 MWK, which corresponds to a substantial relative increase of 64 per cent as compared to the control group.

	(1)	(2)	(3)	(4)	(5)	(6)
<b>Variables</b>	<b>Per capita quantity of harvest (kg)</b>	<b>Per capita quantity of harvest (kg)</b>	<b>Per capita quantity of harvest: own consumption (kg)</b>	<b>Per capita quantity of harvest: own consumption (kg)</b>	<b>Per capita quantity of harvest sold (kg)</b>	<b>Per capita quantity of harvest sold (kg)</b>
Project	42.00* (23.81)		30.04** (13.36)		2.316 (2.348)	
Lump-sum plus training		50.45* (28.36)		47.27** (19.62)		6.214*** (1.919)
Lump-sum only		44.08 (50.23)		30.08 (25.69)		1.536 (4.734)
Training-only		13.86 (17.01)		15.60 (17.46)		-0.884 (1.544)
Observations	778	778	778	778	778	778

Notes: Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. The specifications include standard control variables from the baseline survey that are not affected by the intervention (see Table 4 for detailed list of control variables). Standard errors are clustered at the district cluster level.

Source: Authors

As maize accounts for 95 per cent of all staple crops harvested and pigeon peas account for 90 per cent of all cash crops harvested, we look at the project impacts for these main crops separately. Table 14 shows that the increase in agricultural production is driven by an increase in maize. Project participants produce 46 kg more maize compared to households of the control group and the per capita value of the maize harvest increases by 2,760 MWK. The effects are significant at a 10 per cent level while, in contrast, we do not find any statistical effect of the project for pigeon peas. This provides some evidence that the overall effects of the project on crop production are triggered more by an increase in staple crops than cash crops.

Overall, the estimates show that the project affects agricultural production. This impact is driven by the lump-sum plus training group and is in line with findings from previous sections. The lump-sum plus training group tends to use the lump-sum and loans more for productive purposes than other treatment groups. As we did not find any impact of the project on agricultural assets, the increase in agricultural production might be more a



result of investments in seeds and fertilisers and less due to basic productivity-enhancing implements for farming.

	(1)	(2)	(3)	(4)	(5)	(6)
Variables	Per capita value of harvest (MWK)	Per capita value of harvest (MWK)	Per capita value of harvest: own consumption (MWK)	Per capita value of harvest: own consumption (MWK)	Per capita value of harvest sold (MWK)	Per capita value of harvest sold (MWK)
Project	3,496* (1,933)		1,925* (1,049)		1,319 (843.8)	
Lump-sum plus training		6,001*** (1,781)		3,499*** (750.4)		3,038*** (608.6)
Lump-sum only		3,274 (3,907)		608.8 (2,129)		548.4 (1,303)
Training-only		2,176 (1,464)		1,564 (1,109)		310.9 (665.5)
Observations	778	778	778	778	778	778

Notes: Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. The specifications include standard control variables from the baseline survey that are not affected by the intervention (see Table 4 for detailed list of control variables). Standard errors are clustered at the district cluster level.

Source: Authors

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variables	Per capita quantity of maize (kg)	Per capita quantity of maize (kg)	Per capita quantity of pigeon peas (kg)	Per capita quantity of pigeon peas (kg)	Per capita value of maize (MWK)	Per capita value of maize (MWK)	Per capita value of pigeon peas (MWK)	Per capita value of pigeon peas (MWK)
Project	46.00* (26.49)		1.25 (2.88)		2,760* (1,590)		627.84 (1,441)	
Lump-sum plus training		91.88 (55.11)		3.90 (5.00)		5,512 (3,306)		1,949 (2,505)
Lump-sum only		24.18 (30.35)		-2.29 (2.66)		1,450 (1,821)		-1,147 (1,332)
Training-only		24.74 (22.46)		1.92 (2.02)		1,484 (1,348)		961.02 (1,013)
Observations	778	778	778	778	778	778	778	778

Notes: Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. The specifications include standard control variables from the baseline survey that are not affected by the intervention (see Table 4 for detailed list of control variables). Standard errors are clustered at the district cluster level.

Source: Authors

## 6.7 Food consumption and food security

In a context characterised by high poverty and food insecurity, it is important to verify whether a project like the EEP generated impacts on food consumption and, even more so, food security. Columns (1) and (2) of Table 15 present the results on per capita food consumption, measured as the monetary value (in 2017) of the sum of all food items consumed, including both those purchased at the market as well as those produced for own consumption.<sup>8</sup> The overall project does not have a significant impact on per capita food consumption. However, if we turn to the different treatment arms, we find a significant impact for the lump-sum plus training group. Households in this group increased their food consumption per household member by 10,220 MWK, which corresponds to an increase of 10 percent as compared to the control group. This finding is partly explained by the result from the previous section on agricultural production showing that the additional harvest of the lump-sum plus training group was predominately used for own consumption purposes.

In a second step, we explore the project's impact on two main indicators of food security. The first is the household dietary diversity score, calculated as the number of different food groups that the household has consumed at least once in the seven days before the interview (Swindale & Bilinsky, 2006). It can potentially range from 0 (no food group consumed) to 10 (all food groups consumed).<sup>9</sup> Our estimates indicate that the EEP does not improve the household diet. Surprisingly, the impacts are positive and significant only in the group participating in the training. While a possible explanation would be that these households use the VSL loans to buy food, as confirmed by the qualitative assessment, it is difficult to imagine that these loans are used to consume new types of foods, instead of consuming standard staple foods such as maize. For this group, in fact, the project does not improve per capita food consumption, however the size of the coefficient is large.

The second indicator is a restricted version of the Household Food Insecurity Access Scale (HFIAS), developed by USAID (Coates, Swindale, & Bilinsky, 2007). It is calculated by aggregating self-reported information on people's frequency in the use of coping strategies ranging from moderate ones, such as eating a smaller meal because of a lack of food to extreme ones, such as going a whole day and night without eating anything. The results indicate that the whole project, as well as every single arm, is negatively associated with HFIAS, but this relationship is again significant only for the training-only group.

In general, the estimates show that the overall project has no influence on food security. No systematic differences between project beneficiaries and the control group in any of the three indicators have been detected. There are two possible explanations for these results. First, the project does not have a nutrition-related component, therefore it is unlikely to have a significant effect on diet diversity in particular. Second, it may be that the project has investments and engagement in economic activities, which in the mid- to long term may improve food security, but in the short term may show no effect. This would also be in line

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8 The module of the questionnaire included 66 food items. To find out the prices of all these items, a market analysis was conducted.

9 The food groups are: 1) cereals, grains and cereal products; 2) roots, tubers and plantains; 3) pulses and nuts; 4) vegetables; 5) meat, fish and animal products; 6) fruits; 7) milk and milk products; 8) fats and oil; 9) sugar, sugar products and honey; 10) condiments.

with the findings of a systematic review, pointing to the significantly lower effect of cash transfers on food and nutrition security when they are conditional to working requirements or accumulation of savings, as compared to when they are unconditional or when conditionalities are related to health (Manley, Gitter, & Slavchevska, 2013). Longer term impact assessments would be required to verify the plausibility of the latter argument.

	(1)	(2)	(3)	(4)	(5)	(6)
<b>Variables</b>	<b>Per capita food consumption (MWK)</b>	<b>Per capita food consumption (MWK)</b>	<b>Diet diversity score</b>	<b>Diet diversity score</b>	<b>HFIAS</b>	<b>HFIAS</b>
Project	8,385 (7,933)		0.0329 (0.174)		-0.146 (0.140)	
Lump-sum plus training		10,222* (5,968)		-0.224 (0.259)		-0.0322 (0.158)
Lump-sum only		4,141 (21,549)		-0.0374 (0.293)		-0.111 (0.290)
Training-only		10,402 (7,191)		0.350** (0.170)		-0.323* (0.174)
Observations	776	776	786	786	776	776

Notes: Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. The specifications include standard control variables from the baseline survey that are not affected by the intervention (see Table 4 for detailed list of control variables). Standard errors are clustered at the district cluster level.

Source: Authors

## 6.8 Non-food expenditures

In this sub-section we explore whether the EEP has influenced the patterns of (yearly) expenditures not related to food. First, we look at the impacts of the project on all expenditures excluding food. Then, we analyse the household's budget allocation choices: since the previous section have already explored expenditures on livestock and assets, we concentrate here on the remaining items. These items were divided into 5 larger categories: housing, health, education, events, and regular expenditures.<sup>10</sup>

We test whether there are differences in means between the treatment and control group in the per capita non-food expenditures and find that the treatment group spend on average 9,000 MWK more than the control group (see Table A4). However, when we consider control variables in our impact assessment the effect is no longer statistically significant. The results for the various different treatment arms reveal that the lump-sum plus training group spends, on average, almost 9,000 MWK per household member more compared to

10 The specific expenditure items for each category are: 1) for housing: iron sheets, cement, bricks, doors, windows; 2) for health: all those related to health services, doctors and medicines; 3) for education: school fees and books; 4) for events: weddings and funerals; 5) "regular": clothes, charcoal, toiletries, paraffin, candles, batteries, transport.

the control group. The size of the coefficient for the lump-sum only group is large (18,000 MWK), but lacks statistical significance (see Table 16).

If we turn to the different expenditure items, it seems that the overall project has incentivised the allocation of the household budget towards housing materials. This, of course, adds to the large impacts on expenditures for livestock examined in Section 6.4. As expected, project beneficiaries who did not receive the lump-sum transfer did not experience significant changes in their expenditures patterns. The only exception relates to health: the training-only group reduced their expenditures in this area, but the coefficient is significant only at the 10 per cent level. The lump-sum only group, instead, registered a significant increase in housing expenditures and, to a lower extent, on events. For housing, the comparison between the coefficient for the lump-sum only and the lump-sum plus training group supports previous conclusions that money without training is more likely to be used for non-productive purposes. In the qualitative interviews, several beneficiaries that received only the lump-sum transfer described using the lump-sum to improve the conditions of their houses, in particular, buying iron sheets for the roof and making bricks to replace mud walls. A worrisome finding concerns education expenditures: the lump-sum only beneficiaries spend almost 200 MWK less on education than the control group and the coefficient is highly significant. This result is difficult to interpret: It could theoretically be that these beneficiary households required further workforce and pushed their children out of school. However, this is only an initial hypothesis as we do not have any information on child labour nor on school drop-outs. Moreover, it would not be clear why this does not happen for the beneficiaries of the combined interventions, where the probability of engaging in business activities is even higher.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
<b>Variables</b>	<b>Per capita non-food expenditure (MWK)</b>	<b>Per capita non-food expenditure (MWK)</b>	<b>Per capita housing expenditure (MWK)</b>	<b>Per capita housing expenditure (MWK)</b>	<b>Per capita health expenditure (MWK)</b>	<b>Per capita health expenditure (MWK)</b>	<b>Per capita education expenditures (MWK)</b>	<b>Per capita education expenditures (MWK)</b>	<b>Per capita expenditures on events (MWK)</b>	<b>Per capita expenditures on events (MWK)</b>	<b>Per capita regular expenditures (MWK)</b>	<b>Per capita regular expenditures (MWK)</b>
Project	8,857 (6,530)		2,293** (1,115)		17.22 (51.83)		-102.9 (83.39)		54.15** (23.98)		-60.65 (6,004)	
Lump-sum plus training		8,929** (3,964)		1,009** (411.0)		42.01 (75.85)		-17.40 (156.9)		60.05** (24.71)		6,221 (6,492)
Lump-sum only		18,193 (15,745)		6,044*** (771.8)		100.4 (69.45)		-193.6*** (69.88)		70.68* (36.70)		6,743 (13,901)
Training-only		-84.29 (4,691)		43.29 (610.8)		-87.17* (43.34)		-104.3 (76.78)		32.40 (44.26)		-216.5 (5,059)
Observations	786	786	786	786	786	786	786	786	786	786	786	786

Notes: Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. The specifications include standard control variables from the baseline survey that are not affected by the intervention (see Table 4 for detailed list of control variables). Standard errors are clustered at the district cluster level.

Source: Authors

## 6.9 Total consumption and poverty

In this sub-section we focus first of all on total consumption and then on monetary poverty, which in Malawi is calculated on the basis of consumption data. Total consumption is calculated as the sum of consumption of food and consumption of non-food items. As highlighted in sub-section 6.6, we collected in-depth information on the consumption of the various food items. For all the other items, we only have data on expenditures. However, while we expect to see substantial differences between food consumption and food expenditures among poor households, this discrepancy is likely to be minimal for items not related to food. Therefore, our hypothesis is that non-food expenditures and non-food consumption are equal. Given that, we added food consumption to non-food consumption to generate the overall annual consumption of the household and then divided it by household size to receive the per capita value.

The results presented in columns (1) and (2) of Table 17 show that the overall project did not significantly affect per capita household consumption. The same occurs for the lump-sum only and for the training-only beneficiaries. In contrast, the combination of lump-sum transfer and financial/business training generates positive effects on consumption: this group has on average a larger per capita consumption than the control group by about 21,500 MWK, which corresponds to a relative increase of 16 per cent.<sup>11</sup> As the average number of household members is 3.7, the overall impact of the project on household consumption amounts to 79,550 MWK. If we put this amount in relation to the lump-sum transfer of 50,000 MWK, which was given independently of the household size, we get a multiplier effect of 1.6. In other words, beneficiaries of the lump-sum plus training group have managed to translate each kwacha received into an additional 0.6 kwacha of benefits.<sup>12</sup> What is mainly responsible for this multiplier effect is that the lump-sum plus training group was able to increase their agricultural production. Most of the additional harvest was used for food consumption, while some was sold and probably improved the income situation over the last 12 months. Furthermore, this group has invested heavily in livestock. It is possible that livestock rearing, alongside the crop production, has generated additional income through selling of livestock and their offspring.

In order to estimate the effects on monetary poverty, we used the 2013 poverty line calculated by Abdoulayi et al (2016). Based on their estimations, a household was considered poor if it had a per capita consumption below 85,852 MWK (August 2013). To compare our estimates of household consumption with the poverty line, we first took the value of the (rural) consumer price index (CPI) in Malawi for August 2013. After that, we calculated the average (rural) CPI in the 12 months preceding our survey and divided it by the CPI for August 2013. Finally, we adjusted our estimates of household consumption by dividing them by this ratio. According to our calculations, 75 per cent of all households in the sample live below the poverty line (see Table A4). If we compare the poverty rates between the treatment and control group, it seems that the project reduces poverty by 8

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11 The largest component of consumption affected by the programme for this treatment group is food, where the effect is 10,222 MWK (see sub-section 6.7), which represents 48 per cent of the total consumption impact of the programme. The non-food components of consumption account for 42 per cent of the total programme impact.

12 We still have to consider the monetary costs of the training in order to get the full picture.

percentage points (69 per cent of the treatment group as against 77 per cent of the control group). However, if we consider control variables in order to measure the overall impact of the project, the effect becomes smaller (6 percentage points) and lacks statistical significance. Looking at the relative contribution of the various different treatment arms, it is possible to notice that the impact is statistically significant only for the group of households which received the combined interventions. For this group, the project reduced the likelihood to be in poverty by nearly 5.3 percentage points.

	(1)	(2)	(3)	(4)
<b>Variables</b>	<b>Per capita total consumption (MWK)</b>	<b>Per capita total consumption (MWK)</b>	<b>Poverty (yes/no)</b>	<b>Poverty (yes/no)</b>
Project	17,595 (12,611)		-0.0577 (0.0439)	
Lump-sum plus training		21,519** (8,581)		-0.0532** (0.0242)
Lump-sum only		20,393 (34,763)		-0.0841 (0.120)
Training-only		11,016 (11,554)		-0.0371 (0.0312)
Observations	776	776	776	776

Notes: Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. The specifications include standard control variables from the baseline survey that are not affected by the intervention (see Table 4 for detailed list of control variables). Standard errors are clustered at the district cluster level.

Source: Authors

## 6.10 Drought resilience

In 2017, Malawi experienced one of the most severe droughts in its history. It is accordingly important to examine whether the Economic Empowerment Project made the beneficiaries less vulnerable to this shock and helped them to deal better with its negative consequences. First of all, survey respondents were asked to report whether they perceived the impact of the drought on their household as negligible, small, or large. The first two columns in Table 18 show that neither the project as a whole, nor any of the three components influence the likelihood of experiencing at least some negative consequences of the drought.

In a second step, households which reported some impacts of the drought were asked whether they had recovered from it (within the last 14 months). A higher proportion of beneficiaries than non-beneficiaries had recovered from the drought, and this difference is statistically significant at the 10 per cent level: project participants are about 9 per cent more likely to have recovered from the drought than households in the control group. This effect is driven entirely by the training-only group: beneficiaries in this group have a nearly 22 per cent higher probability of recovering from drought as compared to the control group. This is probably due to the possibility of relying on loans obtained through the participation in the VSL groups that were often used for consumption purposes (see sub-section 6.2). In addition, the training-only group acquired more durable non-agricultural assets than the other treatment groups; these assets may have worked as collateral to secure a loan from external moneylenders or some of them may have been sold in order to deal with the drought.

Finally, all individuals that did experience the negative consequences of drought but had recovered were asked in which month they had recovered (ranging from May 2016 until June 2017). We should highlight that this particular analysis is, therefore, based on a smaller sample, consisting of 451 households. It is possible to explore whether, within this group, the project has contributed to accelerating the process of recovery. Results in column (5) of Table 18 show that the intervention has, on average, reduced the recovery period by about 1.2 months. Interestingly, the impacts are now highly significant for the lump-sum plus training and for the lump-sum only groups, and not for the training-only group. The first group required nearly 2 months less to recover from the drought, and the second group slightly less, namely 1.8 months. Combining the information from columns (3) to (6) it emerges that through the exclusive participation in the training it was possible to increase the probability of recovering within a relative long period of time (14 months), but it is actually the lump-sum which shortens the recovery time.

To have a clearer, synthetic picture we constructed a further variable indicating the number of months necessary for recovering from the drought, where all the individuals that had not yet recovered at the time of the survey were assumed to recover during the following month (therefore 15 months, in total). This allowed us to include more households in our estimation sample (593 households). The results presented in columns (7) and (8) highlight the important role of the EEP in accelerating the period of recovery, which was due to the positive effects of the lump-sum, with or without training.<sup>13</sup>

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variables	Drought impact size	Drought impact size	Drought recovery (yes/no)	Drought recovery (yes/no)	Number of months needed to recover	Number of months needed to recover	Number of months needed to recover (unconditional)	Number of months needed to recover (unconditional)
Project	-0.0150 (0.0665)		0.0877* (0.0492)		-1.243** (0.551)		-1.361*** (0.451)	
Lump-sum plus training		0.0478 (0.101)		-0.00415 (0.0370)		-1.985*** (0.675)		-1.215*** (0.397)
Lump-sum only		-0.0375 (0.137)		0.0902 (0.0618)		-1.803*** (0.480)		-1.876*** (0.306)
Training-only		-0.0595 (0.0537)		0.221*** (0.0676)		-0.406 (0.782)		-1.093 (0.986)
Observations	786	786	593	593	451	451	593	593

Notes: Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. The specifications include standard control variables from the baseline survey that are not affected by the intervention (see Table 4 for detailed list of control variables). Standard errors are clustered at the district cluster level.

Source: Authors

13 These results hold even under the hypothesis that those who had not yet recovered at the moment of the survey needed in total 16, 17, 18, 19, 20 or 21 months to do so. Given that already 76 per cent had recovered and, on average, that they needed 9 months, it is unrealistic to think that those who had not yet recovered necessitated more than 21 months.



## 7 Labour versus non-labour-constrained analysis

One peculiar feature of the EEP is that it targets households satisfying two criteria: 1) consumption below the food poverty line; 2) labour constraint. While there are cash transfer (CT) programmes targeting labour-constrained households in countries such as Zambia, Burundi, Zimbabwe and Egypt, this is normally not a case of graduation or cash-plus programmes. Since the EEP builds on the structure of the SCTP in Malawi, the definition of the labour-constrained household is based on the design of the latter programme. According to the SCTP targeting manual, a household is considered labour-constrained if it has no member in the age bracket 19-64 years fit for work or if it has at least one household member in that age-group who is fit for work but the overall dependency ratio is above 3 (see calculation of the dependency ratio in the footnote).<sup>14</sup> Dependents are household members who are too young, too old or too sick/handicapped for productive work. In the SCTP definition, all people between 19 and 25 of age who are attending school do not fall into the category “fit for work”. Given that similar programmes have targeted households with at least a minimal labour capacity based on the hypothesis that only the latter can engage in economic activities (and eventually start a virtuous circle of poverty reduction), this heterogeneity analysis can provide preliminary insights on whether such a hypothesis holds.

Based on our follow-up survey data we first analyse how many households were actually labour-constrained, based on the programme definition.<sup>15</sup> Figure 10 shows the distribution of our household sample according to the variable “proportion of household members fit for work”. This variable is the inverse of the dependency ratio. This allows us to also visualise the cases where no 19 to 64-year-old household member is fit for work, which would not be possible if one stuck to the dependency ratio as it would be undefined. Out of 786 households, 618 (78.63 per cent) are labour-constrained based on programme criteria, while the remaining 168 (21.4 per cent) are not classifiable as labour-constrained. There are several possible explanations for the latter figures. One is that the SCTP (and therefore the EEP) reaches the bottom 10 per cent in each district of Malawi, which means that there may be cases in which one reaches the 10 per cent of households which do not fully meet all the eligibility criteria of the targeting scheme.<sup>16</sup> Another explanation is that some conditions of the households have changed compared to the baseline and that this is reflected in these numbers calculated on the basis of the follow-up survey data. For example, the age composition within a household or the inflow of adults that are fit for work into the household can change the household labour-constrained status. In order to test if this took place, we check how many households were labour-constrained in our baseline survey and find that 90 per cent of the 786 households had no working capacities according to the programme criteria. We test in a second step which factors of the households were responsible for the decline in the number of labour-constrained households. We find that the overall project has no influence on the labour-constrained

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14 The exact formula for the calculation of the dependency ratio is the following:

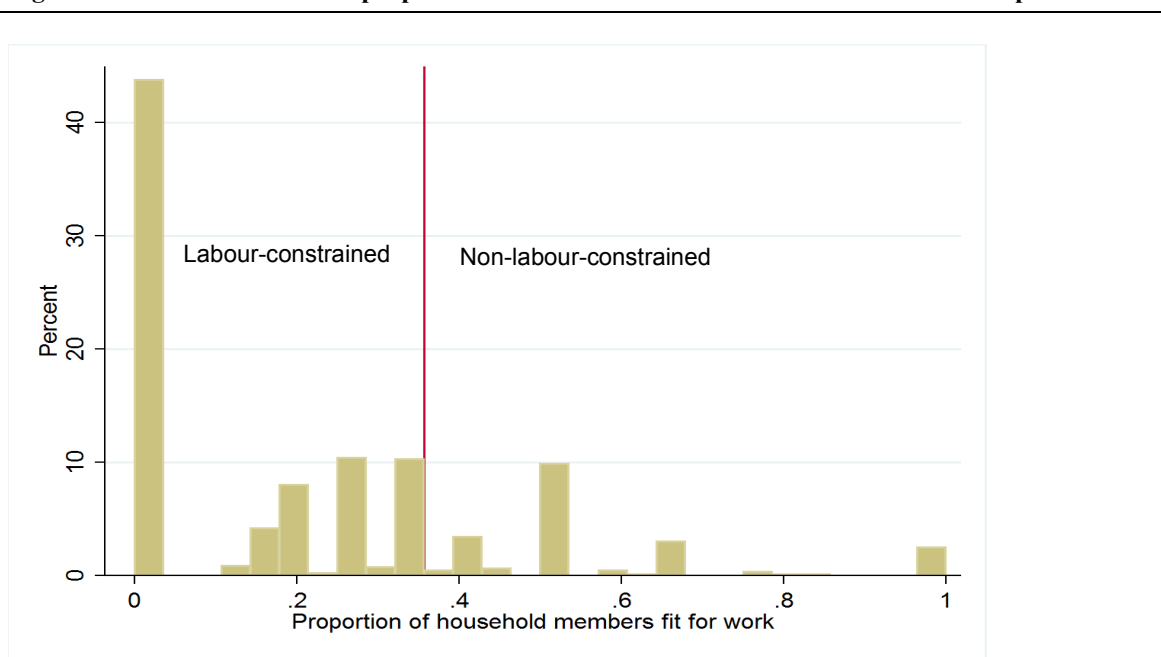
$$\text{Dependency ratio} = \frac{(\text{Household size})}{\sum(19 - 64 \text{ fit for work}) - \sum(19 - 25 \text{ attending school})}$$

15 Unfortunately, we did not collect information on whether 19 to 25-year-olds attended school: to compensate this, we classified as labour-constrained those household with a dependency ratio not lower (rather than strictly higher) than 3.

16 These have been defined by Devereux et al. (2017) as “inclusion errors by design”.

status but, as expected, the inflow and outflow of household members and the age of the beneficiaries led to changes in the labour-constrained status.

**Figure 11: Distribution of the proportion of household members fit for work in our sample**



Note: The proportion of household members fit for work has to be lower than 0.33 for the household to be defined as labour-constrained. This is equivalent to having the dependency ratio higher than three.

Source: Authors

We analyse whether the EEP’s impact change depending on whether the household is labour-constrained or not. The results, which focus on almost all the dependent variables discussed so far, are presented in Table 19. Our coefficient of interest is that of the interaction term between project participation and labour-constraint status.<sup>17</sup> For 15 of the 17 outcome variables, project impacts do not differ statistically between labour-constrained and non-labour-constrained households. The differences are statistically significant – but only at the 10 per cent level – for household diet diversity and for expenditures on housings.

One important criticism could be that the self-reported information on whether people consider themselves “fit for work” does not really reflect the work capabilities of the respondents. In order to check this, we adjusted the self-reported information on whether people consider themselves “fit for work”, by considering information about major chronic diseases and disabilities of the respondents. These revisions generate a large increase in the number of labour-constrained households: from 78.63 per cent to 85.24 per cent. We re-run the estimates with the new classification (see Table A5). In this case, there is a statistically significant difference between labour-constrained and non-labour-constrained households in one outcome, diet diversity, while for the remaining 16 outcome variables the project impacts do not differ statistically between labour-constrained and non-labour-constrained households.

<sup>17</sup> For the non-linear models, we calculated the average marginal effects of the interaction terms.

Additional robustness checks were carried out, revising the indicator that shows whether a household is labour-constrained or not. In particular, the assumption that children or young people between 15 and 19 years old are labour-constrained does not mirror reality. A 2015 ILO report on child labour in Malawi shows that 52 per cent of all people between 15 and 19 years in rural areas work (ILO [International Labour Organization], 2017). Moreover, the last ILO labour force survey counts every person between age 15 and 64 as workforce in Malawi (NSO [National Statistical Office], 2014). The child labour report indicates that 50 per cent of the children in the 14 to 17 age bracket work on average 14 hours per week (economic activities) in rural areas, which corresponds to slightly more than one fourth of the official weekly working hours in the country. This shows that excluding these children from the calculation of the potential household workforce is problematical. For this reason, we revised our measurement of this variable. Children in the 14 to 17 age group are assumed to provide 0.15 labour force, while 18- and 19-year-olds are assumed to provide 0.25 or 0.5 labour force, depending on whether they are in school or not. These revisions generate a small reduction in the number of labour-constrained households: from 85.24 per cent to 81.55 per cent. Subsequently we re-run the estimates with the new classification (see Table A6 in the Appendix) and found that for none of the outcomes there was statistically significant difference between labour-constrained and non-labour-constrained households.

These findings and the robustness checks provide first evidence in the literature that poor and labour-constrained households can benefit from an economic empowerment project. As one feature of the project is the availability of a proxy who carries out project-related activities on behalf of the labour-constrained beneficiary, we examine in the next section whether this project feature explains this finding. While longer term evidence is needed to understand whether these positive outcomes for labour-constrained households hold beyond one year after project implementation and whether this may really put them in a virtuous cycle of poverty reduction, these findings cast some doubts on the prevailing view that the ultra-poor and labour-constrained households cannot benefit from economic empowerment projects.

**Table 19: Project impacts on several outcomes according to labour constraint status**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
Variables	Financial literacy index	Saving uptake (yes/no)	Amount savings	Amount loans (MWK)	Start non-farm business (yes/no)	Paid work (yes/no)	P.c. wealth live-stock (MWK)	P.c. value harvest (MWK)	Asset wealth	P.c. food consumption (MWK)	Diet diversity score	HFIAS	P.c. exp. housing (MWK)	P.c. non-food expenditures	P.c. total consumption (MWK)	Drought impact size	Drought months for recovery (unconditional)
Project * labour-constrained	0.367 (0.250)	-0.119 (0.069)	230.2 (1,546)	863.23 (1,111)	0.001 (0.014)	-0.088 (0.056)	-2,166 (4,609)	3,511 (3,316)	0.148 (0.210)	11,902 (15,878)	0.495* (0.265)	0.410 (0.308)	-1,350* (755.6)	135.8 (7,489)	14,797 (14,361)	-0.0480 (0.129)	0.162 (0.588)
Labour-constrained	-0.354*** (0.125)	-0.047 (0.058)	-1,124 (1,242)	-586.1 (648.9)	0.024 (0.026)	-0.015 (0.043)	-4,942* (2,531)	-7,606*** (2,570)	-0.228 (0.165)	-17,134** (8,121)	-0.57*** (0.151)	0.115 (0.204)	141.8 (720.7)	-5,658 (6,104)	-23,735** (11,243)	-0.0144 (0.073)	0.233 (0.458)
Project	0.258* (0.155)	0.264*** (0.0826)	4,124** (1,646)	1,198 (784)	0.0540*** (0.020)	-0.047 (0.033)	9,395** (3,653)	1,505 (3,143)	-0.0078 (0.196)	3,010 (17,723)	-0.37** (0.179)	-0.372 (0.288)	3,414** (1,513)	8,749 (8,636)	9,744 (19,382)	0.00883 (0.157)	-1.444* (0.757)
Observations	778	786	784	786	723	786	786	778	786	776	786	782	786	786	776	786	593

Notes: Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. The specifications include standard control variables from the baseline survey that are not affected by the intervention (see Table 4 for detailed list of control variables). Standard errors are clustered at the district cluster level. We calculated the average marginal effects of the interaction terms for the non-linear models. P.c.: per capita

Source: Authors

## 8 Proxy analysis

As shown in Section 5, the vast majority of project beneficiaries (90.3 per cent) used the proxy option. The majority of the 232 proxies do not live in the same household as the beneficiary (69 per cent) but most of them (53 per cent) are the son/daughter of the beneficiary. Although we did not collect detailed information on the location of the proxy's household, we know from the qualitative survey that most proxies lived close to the beneficiary households, regularly eat together and support each other in many ways. As we collected information on the activities that the proxy undertook for the beneficiary, we are in a position to define a proxy as **active** if she/he has carried out at least one project activity on behalf of the beneficiary. These activities include participation in training, collecting the lump-sum transfer, advising on how to use the money (lump-sum transfer or/and loan from VSL groups) and possibly joining a VSL group. If the beneficiaries reported that the proxy had not carried out an activity on their behalf, we classified the proxy as **non-active**. Eighty-two per cent of the beneficiaries that used the proxy option had an active proxy, while 18 per cent were considered non-active. In order to estimate the impacts of the project for beneficiaries with an active or non-active proxy separately, we split our project indicator in the subsequent regressions into two indicators: first, project with an active proxy and second, project without an active proxy.

Before turning to the impacts of the active and non-active proxy, we checked which characteristics of the beneficiary influence the use of the proxy option. Table A7 (column 1) of the Appendix shows the determinants of using the proxy option. It seems that only land ownership and the use of a school-meal programme are positively related to the use of the proxy option. Both indicators are only statistically significant at the 10 per cent level.<sup>18</sup> Furthermore, we checked whether the characteristics of the beneficiaries explained the presence of an active proxy in the household (see Table A7, column 2). We find that no characteristics of the beneficiaries are statistically significant related to the presence of the active proxy.

Table 20 presents the impacts of the project in combination with having an active proxy. Furthermore, the table shows the impact of the project on beneficiaries who have a non-active proxy or no proxy. We further tested whether the coefficients of both indicators were statistically different in order to examine whether the proxy option drives the project impact or not. There are no differences between having an active proxy or non-active/no proxy as regards financial literacy, savings and loans, which suggests that it is the project (in particular the training component) – more than the presence of an active proxy – which is responsible for the impacts. In contrast, the active proxy seems to explain project impacts on livestock wealth, agricultural production and expenditures in housing. Further differences between active and non-active/no proxy can be found in consumption and non-food expenditures. Interestingly, beneficiaries that have a non-active/no proxy drive the overall project impacts on non-farm business creation (see Table 20, column 5). This is because non-farm businesses started by the proxy are not considered in this indicator. We then revised the measurement of this outcome variable, by including also the businesses started by the proxy. The results, reported in Table 21, show a substantial increase in the

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18 In order to avoid a bad control variable problem in the subsequent impact analysis of the proxy option, we checked whether the exclusion of these two variables changed the results but this was not the case.

creation of non-farm businesses. Thirty-six of the 232 proxies started a non-farm business in the previous 12 months (16 per cent) while 80 percent of these new business were started by active proxies. Eighteen beneficiaries started a non-farm business on their own. If we combine the start of non-farm business by beneficiaries *and* proxies, we find a 16 percentage points higher probability to initiate a new business compared to the control group. It seems that active proxies in particular started non-farm businesses due to the project.

A similar finding is observed for paid work activities. The beneficiaries reduced these activities if they had an active proxy, which is in line with the previous finding that the active proxy conducts more paid work probably on behalf of the beneficiary. As we also collected information on savings and loans of the proxy, we were able to check how the aggregated savings of beneficiaries and proxies changed due to the project (see Table 21). We find that the active proxy in particular increases their savings and loans, which is in line with our descriptive findings showing that many active proxies have answered that they are participating in the training on behalf of the beneficiary. It is not clear how far the active proxies share their project benefits with the beneficiaries. However, as most of the active proxies are the son/daughter of the beneficiaries and appear to live close by, it is likely that these benefits have been shared and have increased the consumption and non-food expenditures of the beneficiaries.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
<b>Variables</b>	<b>Financial literacy index</b>	<b>Saving uptake (yes/no)</b>	<b>Amount savings (MWK)</b>	<b>Amount loans (MWK)</b>	<b>Start non-farm business (yes/no)</b>	<b>Paid work (yes/no)</b>	<b>P.c. wealth livestock (MWK)</b>	<b>P.c. quantity harvest (kg)</b>	<b>P.c. value harvest (MWK)</b>	<b>Asset wealth</b>	<b>P.c. food consumption (MWK)</b>	<b>Diet diversity score</b>	<b>HFIAS</b>	<b>P.c. exp. housing (MWK)</b>	<b>P.c. non-food expenditures (MWK)</b>	<b>P.c. total consumption (MWK)</b>	<b>Drought impact (yes/no)</b>	<b>Drought months for recovery (unconditional)</b>
Active proxy	0.545*** (0.167)	0.236*** (0.0633)	4,227*** (1,289)	1,608* (898.5)	0.0164 (0.0185)	-0.106*** (0.0403)	9,528*** (2,882)	67.26** (30.93)	6,320** (2,441)	0.0349 (0.166)	17,676* (10,190)	-0.007 (0.163)	0.0835 (0.181)	2,671** (1,172)	12,800* (6,593)	28,196* (14,717)	-0.0338 (0.0849)	-1.36*** (0.492)
Non-active/no proxy	0.554*** (0.196)	0.314** (0.137)	4,556** (1,872)	2,474** (1,084)	0.148*** (0.0446)	0.0431 (0.0478)	3,306 (2,977)	1.97 (17.92)	-628.5 (1,739)	0.313 (0.287)	5,120 (10,735)	0.100 (0.244)	-0.532 (0.385)	1,559 (1,131)	-464.0 (6,588)	5,946 (14,550)	-0.0202 (0.0928)	-1.236* (0.698)
p-value (test of difference between coefficients)	0.96	0.42	0.80	0.24	0.00	0.00	0.00	0.00	0.01	0.19	0.07	0.46	0.29	0.00	0.00	0.04	0.90	0.86
Observations	778	786	784	786	723	786	786	778	778	786	776	786	782	786	786	776	786	593

Notes: Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. The specifications include standard control variables from the baseline survey that are not affected by the intervention (see Table 4 for detailed list of control variables). Standard errors are clustered at the district cluster level

Source: Authors

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>Variables</b>	<b>Amount savings (MWK)</b>	<b>Amount savings (MWK)</b>	<b>Amount loans (MWK)</b>	<b>Amount loans (MWK)</b>	<b>Start non-farm business (yes/no)</b>	<b>Start non-farm business (yes/no)</b>	<b>Paid work (yes/no)</b>	<b>Paid work (yes/no)</b>
Project	9,079*** (1,864)		3,800*** (1,119)		0.162*** (0.049)		0.080*** (0.026)	
Active proxy		10,445*** (1,939)		4,270*** (1,249)		0.165*** (0.050)		0.086** (0.030)
Non-active/no proxy		5,378*** (1,930)		2,523*** (1,101)		0.150*** (0.048)		0.054 (0.057)
p-value (test of diff. between coefficients)		0.00		0.08		0.50		0.72
Observations	784	784	786	786	786	786	786	786

Notes: Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. The specifications include standard control variables from the baseline survey that are not affected by the intervention (see Table 4 for detailed list of control variables). Standard errors are clustered at the district cluster level

Source: Authors

In the previous section, we showed that project impacts do not differ significantly between labour-constrained and non-labour-constrained households. In order to check whether the proxies explain this finding, we indicated the impacts of the proxy for labour-constrained and non-labour-constrained households separately. Table 22 presents the results for the labour-constrained sample and Table A8 in the Appendix for the non-labour-constrained sample. In comparison to beneficiaries who are non-labour-constrained, we find that labour-constrained beneficiaries benefit more from having an active proxy than a non-active proxy. While there are almost no differences between non-labour-constrained beneficiaries with an active and inactive proxy, we see major differences in livestock wealth, agricultural production and per capita consumption between active and non-active proxies for labour-constrained beneficiaries. While beneficiaries with sufficient labour capacities do not need to rely much on active proxies, it seems that proxies are crucial for labour-constrained households, in particular with regard to productive activities such as agricultural production and livestock rearing.

We conclude, therefore, that the presence of active proxies is responsible for many project impacts. In particular, the increase in livestock and agricultural production seems to be fully driven by the active proxy. Active proxies largely explain why we do not find major differences in the impact of the project between labour-constrained and non-labour-constrained households. To the best of our knowledge, no economic empowerment programme has included such a proxy option in the past; hence we can show for the first time how households – even when labour-constrained – can benefit from such programmes. While further longer terms assessments would be required to draw firm conclusions, these results suggest that proxies can be an important part of more inclusive economic empowerment programmes that also include ultra-poor and labour-constrained households.



	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
<b>Variables</b>	<b>Financial literacy index</b>	<b>Saving uptake (yes/no)</b>	<b>Amount savings</b>	<b>Amount loans (MWK)</b>	<b>Start non-farm business (yes/no)</b>	<b>Paid work (yes/no)</b>	<b>P.c. wealth livestock (MWK)</b>	<b>P.c. quantity harvest (kg)</b>	<b>P.c. value harvest (MWK)</b>	<b>Asset wealth</b>	<b>P.c. food consumption (MWK)</b>	<b>Diet diversity score</b>	<b>HFIAS</b>	<b>P.c. exp. Housing (MWK)</b>	<b>P.c. non-food expenditures</b>	<b>P.c. total consumption (MWK)</b>	<b>Drought impact (yes/no)</b>	<b>Drought months for recovery (unconditional)</b>
Active proxy	0.687*** (0.208)	0.224*** (0.0746)	4,257*** (1,377)	1,838* (1,064)	0.0141 (0.0173)	-0.135** (0.0533)	9,187** (3,337)	74.28** (33.58)	6,044** (2,502)	0.0614 (0.188)	19,213** (9,261)	0.161 (0.184)	0.176 (0.215)	2,078* (1,109)	11,205* (6,758)	30,780** (13,751)	-0.0317 (0.071)	-1.268*** (0.423)
Non-active/no proxy	0.442* (0.240)	0.295* (0.152)	4,261** (2,005)	2,596* (1,415)	0.172*** (0.0579)	0.0353 (0.0649)	542.2 (1,325)	7.854 (18.72)	972.6 (1,927)	0.335 (0.321)	6,103 (10,910)	0.0944 (0.309)	-0.618 (0.540)	1,921 (1,258)	3,619 (8,091)	11,601 (16,359)	-0.088 (0.097)	-1.326** (0.639)
p-value (test of diff. between coefficients)	0.36	0.48	0.99	0.40	0.00	0.03	0.02	0.02	0.03	0.26	0.09	0.72	0.28	0.76	0.02	0.04	0.60	0.93
Observations	610	617	615	617	617	617	617	612	612	617	609	617	613	617	617	609	617	461

Notes: Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. The specifications include standard control variables from the baseline survey that are not affected by the intervention (see Table 4 for detailed list of control variables). Standard errors are clustered at the district cluster level

Source: Authors

## 9 Conclusions and policy recommendations

This report has presented the findings of the impact assessment of the Tingathe Economic Empowerment Pilot Project (EEP) conducted by GIZ in cooperation with Malawian national and local institutions. Based on an experimental study design including an extensive survey conducted in June/July 2017 with about 800 households, this report had three main objectives. The first was to investigate the impacts of the overall project and each of the three project components – lump-sum, training, and the combination of the two – on a set of dependent variables selected to indicate whether the project improved beneficiaries' living standards as well as their potential to enter the “graduation pathway” out of poverty. The second objective was to verify whether project impacts differed significantly between households with low and high labour impediments. The third objective was to examine the role played by the proxy, a person who could carry out project-related activities on behalf of the beneficiary. We were interested in verifying the benefits of this innovative feature of the Tingathe EEP, especially among labour-constrained households. Given the peculiar features of the project design – randomised assignment of each project component, targeting of labour-constrained (ultra-poor) households and allowing beneficiaries to have a proxy – we were in the unique position to address these little-explored research questions and derive policy recommendations.

The quantitative analysis shows that the project had substantial positive impacts, in particular on financial literacy, savings, loans, livestock wealth, agricultural production, and resilience to drought. As expected, impacts on the first three outcomes are entirely driven by the financial and business training, which focused on group formation and the provision of basic financial and managerial information: the training, in turn, was meant to incentivise the creation of the VSL groups. The lump-sum transfer played a fundamental role in increasing livestock ownership and resilience to drought, while the training in combination with the lump-sum transfer was responsible for improving agricultural production.

The EEP also had significant impacts on the likelihood that new non-farm business activities were commenced, as well as on sales and profits in these activities. The size of these effects, however, is not large and is restricted to beneficiaries who participated in the financial and business training. Only 18 out of 256 beneficiary households in the treatment group started up a non-farm business such as petty trading or beer brewing, compared to 10 out of 530 households in the control group. This points to the limitations of giving cash alone as a means for engaging in potentially more remunerative activities and, through that channel, ensuring long-lasting poverty reduction.

Altogether, the impacts on productive outcomes such as livestock ownership and agricultural production are much larger in the lump-sum plus training group as compared to the lump-sum only group. Households that received both a lump-sum and training managed to translate each kwacha received into an additional 0.6 kwacha of benefits – measured in terms of total consumption – and had about a 5 percentage points lower likelihood to be in poverty. **We conclude that the training increased the productive use of the transfer.** So far the project has had significant positive effects on well-being, the resilience of the beneficiaries, and the viability of their income-generating activities. Whether these improvements will translate into the beneficiaries' graduation out of poverty remains an open question; longer-term impact assessments would be required to verify this.

With regard to the second objective, we conducted an analysis with 17 dependent variables, and found that there are basically no differences in the project's impacts between labour-constrained and non-labour-constrained households. This finding provides the first evidence in the literature that poor and labour-constrained households can indeed benefit from an economic empowerment project. While further longer terms assessments are needed, it casts some initial doubts on the common view that labour-constrained households are not capable of benefitting from economic empowerment programmes and will always need to depend on social assistance.

With regard to the third objective, active proxies are crucial in enabling most of the project impacts. In particular, we find that an active proxy is a powerful enabler for productive activities such as livestock and agricultural production. As the proxy option was introduced to support labour-constrained beneficiaries, we checked whether the presence of an active proxy played a crucial role in explaining the insignificant differences in the project's impacts between labour-constrained and non-labour-constrained households. We find that labour-constrained beneficiaries benefit from the presence of an active proxy, while we at the same time find almost no differences between non-labour-constrained beneficiaries with an active proxy and non-active/no proxy. We conclude that proxies can be an important part of more inclusive economic empowerment programmes that can also include ultra-poor and labour-constrained households.

Given the results of the project and the high interest of the Government of Malawi and other institutions in developing a country-wide strategy to facilitate graduation out of poverty over the next years, we can offer the following **key policy recommendations**.

**First, while the EEP is effective in improving livestock and rearing activities – a crucial pathway for graduation out of poverty – it must at the same time be integrated with training on livestock handling and rearing.** The combination of providing a lump-sum and training substantially improves livestock ownership and can ensure that poor households engage in livestock rearing activities, which is likely to be one of the most important channels through which people can escape poverty (Bandiera et al., 2017). For the same reasons, some integrated programmes provide some type of livestock directly while others provide cash and allow people to choose what to buy with it as long as it is of a productive nature. One problem identified in the course of some of these experiences is that beneficiaries who receive or buy livestock are often unaware of how to handle livestock: in this case, only minimal benefits are to be expected from owning livestock. That is why, integrated services (such as training) are essential (Pain et al., 2015; Devereux & Sabates, 2015). Similar problems were encountered in the EEP and this caused project administrators to react by introducing the Livestock Management and Horticulture Training which had initially not been planned.

**Second, the implementation of a training that ensures the creation of savings and loan groups close an important market gap for ultra-poor households, which otherwise have no access to savings and loans.** The creation of the savings and loan groups was considered an important channel to improve beneficiaries' living conditions in a sustainable manner. The training component including group formation, financial literacy and business management training was responsible for this positive outcome. Before giving a final judgment on including the creation of savings and loan groups in future training for ultra-poor beneficiaries, it would be necessary to verify in the long run

whether group participants are actually able to repay the loans and whether the creation of these saving groups is a first step towards the generation of joint productive activities.

**Third, while the combination of a lump-sum and training does have positive effects on agricultural production, the ability of economic empowerment programmes like the Tingathe EEP to improve agricultural productivity remains limited, given that certain preconditions are simply not available to ultra-poor households in rural areas such as Mwanza.** As the primary source of livelihoods for the households living in Mwanza is crop production, the benefits from improved agricultural production through training in combination with the lump-sum transfer are a promising first step on a potential graduation pathway out of poverty. However, the room for improvement in agricultural productivity is limited by the availability and affordability of adequate farmland and irrigation facilities for the beneficiaries. A better linkage of the beneficiaries to present agricultural extension services could possibly have additional positive effects and might be integrated into economic empowerment programmes.

**Fourth, the EEP has ensured several positive productive impacts, but policymakers cannot expect to push ultra-poor and labour-constrained households to shift their economic activities from agriculture (and livestock) to different types of non-farm micro-business, at least in contexts like rural Malawi.** The project designers viewed the start up of new forms of micro-business in sectors other than agriculture or the expansion of already existing ones as one of the main graduation pathways for the beneficiaries. The underlying rationale is that, by removing capital constraints and knowledge/skills constraints, poor households could make larger investments in non-traditional micro-business activities and become small entrepreneurs. Our results indicate that this has rarely been the case. Only 18 out of 256 households started a non-farm business such as petty trading or brewing business in the treatment group (7 per cent), compared to 10 out of 530 households in the control group (2 per cent). When we focused on the proxies, 36 of the 232 proxies had started a non-farm business in the previous 12 months (16 per cent). There were multiple reasons for this result. One probable reason was that many beneficiaries and proxies did not want to engage in risky activities and preferred a constant, safe source of income. A possible way out would be to re-address the targeting of the programme towards only those in the project who were willing to start a business (and maybe provide a good initial business plan, as other projects have done). However, this would eventually involve only a few households who – although they may still be located below the poverty line – most probably would not be among the poorest, and therefore it would no longer be a strategy where poverty reduction is the core objective. Other reasons for the small changes in the non-farm business section may be related to the local context. Through the qualitative interviews, we found out that in Mwanza people feel social pressure to share money with relatives and neighbours when they receive a relatively large amount of cash. To avoid this, they may decide to spend it early on, sometimes without an adequate investment plan.

Another potential reason for this behaviour relates to the demand side. Given that Mwanza is a poor district, there may be little demand of the potential goods and services produced through the new micro-business activities. If it appears that most of the beneficiaries do not become entrepreneurs, then it is fundamental that anti-poverty or graduation strategies are connected in a better way to the demand side of the market: even if people are more skilled and productive (due to the training), this does not necessarily translate into

improved employment opportunities and more economic development and poverty reduction in the long run if there is no functioning labour market to employ them. This is a concern often raised with regard to graduation strategies (see Devereux, 2017; McCord & Slater, 2015; Bauchet, Morduch, & Ravi, 2015).

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## Appendix

<b>Table A1: Balance table – ‘lump-sum plus training’ group versus control group</b>				
Baseline variables (2014/2015)	2 pilot clusters (mean)	24 control clusters (mean)	Difference in means	p-value
School attendance beneficiary (1/0)	0.558	0.504	0.054	0.35
Female beneficiary (1/0)	0.721	0.777	-0.056	0.25
Age of beneficiary	60.86	58.13	2.730	0.23
Married beneficiary (1/0)	0.256	0.221	0.035	0.47
Number of household members	3.802	3.843	-0.041	0.86
Number of household members aged 19-65 (fit for work)	0.651	0.609	0.042	0.69
Disabled beneficiary (1/0)	0.198	0.179	0.018	0.68
Chronic illness beneficiary (1/0)	0.244	0.181	0.063	0.17
Own land (1/0)	0.953	0.938	0.016	0.57
Number of meals per day (1/0)	1.488	1.432	0.056	0.36
1st quantile wealth assets index (1/0)	0.477	0.311	0.165	0.00
2nd quantile wealth assets index (1/0)	0.244	0.277	-0.033	0.52
3rd quantile wealth assets index (1/0)	0.081	0.157	-0.075	0.07
4th quantile wealth assets index (1/0)	0.198	0.255	-0.057	0.26
House: grass roof (1/0)	0.941	0.875	0.066	0.12
House: cement floor (1/0)	0.012	0.034	-0.022	0.27
House: brick wall (1/0)	0.419	0.347	0.071	0.20
Number of households	86	530		
Source: Authors				



<b>Table A2: Balance table – ‘lump-sum only’ group versus control group</b>				
Baseline variables (2014/2015)	2 pilot clusters (mean)	24 control clusters (mean)	Difference in means	p-value
School attendance beneficiary (1/0)	0.452	0.504	-0.051	0.38
Female beneficiary (1/0)	0.774	0.777	-0.003	0.94
Age of beneficiary	61.48	58.13	3.342	0.15
Married beneficiary (1/0)	0.250	0.221	0.029	0.55
Number of household members	3.476	3.843	-0.367	0.12
Number of household members aged 19-65 (fit for work)	0.585	0.609	-0.024	0.54
Disabled beneficiary (1/0)	0.178	0.179	0.000	0.99
Chronic illness beneficiary (1/0)	0.155	0.181	-0.024	0.56
Own land (1/0)	0.976	0.938	0.038	0.16
Number of meals per day (1/0)	1.524	1.432	0.092	0.13
1st quantile wealth assets index (1/0)	0.274	0.311	-0.037	0.49
2nd quantile wealth assets index (1/0)	0.274	0.277	-0.003	0.95
3rd quantile wealth assets index (1/0)	0.167	0.157	0.010	0.81
4th quantile wealth assets index (1/0)	0.286	0.255	0.030	0.54
House: grass roof (1/0)	0.893	0.875	0.017	0.65
House: cement floor (1/0)	0.048	0.034	0.013	0.53
House: brick wall (1/0)	0.309	0.347	-0.038	0.50
Number of households	84	530		
Source: Authors				

<b>Table A3: Balance table – ‘training-only’ group versus control group</b>				
Baseline variables (2014/2015)	2 pilot clusters (mean)	24 control clusters (mean)	Difference in means	p-value
School attendance beneficiary (1/0)	0.465	0.504	-0.039	0.51
Female beneficiary (1/0)	0.732	0.777	-0.044	0.36
Age of beneficiary	57.07	58.13	-1.064	0.64
Married beneficiary (1/0)	0.302	0.221	0.081	0.10
Number of household members	3.709	3.843	-0.134	0.56
Number of household members aged 19-65 (fit for work)	0.605	0.609	-0.005	0.96
Disabled beneficiary (1/0)	0.198	0.179	0.018	0.68
Chronic illness beneficiary (1/0)	0.139	0.181	-0.041	0.35
Own land (1/0)	0.965	0.938	0.027	0.32
Number of meals per day (1/0)	1.441	1.432	0.010	0.87
1st quantile wealth assets index (1/0)	0.244	0.311	-0.067	0.21
2nd quantile wealth assets index (1/0)	0.325	0.277	0.048	0.36
3rd quantile wealth assets index (1/0)	0.232	0.157	0.076	0.08
4th quantile wealth assets index (1/0)	0.198	0.255	-0.057	0.26
House: grass roof (1/0)	0.872	0.875	-0.003	0.93
House: cement floor (1/0)	0.060	0.034	0.026	0.18
House: brick wall (1/0)	0.198	0.347	-0.149	0.00
Number of households	86	530		
Source: Authors				

<b>Table A4: Differences in means – outcome variables (follow-up 2017)</b>					
	(1) Overall sample (mean)	(2) 6 pilot clusters (mean)	(3) 24 control clusters (mean)	Difference in means (2-3)	p-value
Financial literacy index	10.172	10.427	10.049	0.377	0.00
Saving uptake (1/0)	0.473	0.648	0.389	0.260	0.00
Amount of savings (MWK)	6,834	9,560	5,528	4,032	0.00
Loan uptake (1/0)	0.291	0.410	0.234	0.176	0.00
Amount of loans (MWK)	2,932	4,099	2,368	1,731	0.00
Start non-farm business (1/0)	0.036	0.070	0.019	0.051	0.00
Sales of non-farm business (MWK)	1,476	2,601	944	1,657	0.01
Profits of non-farm business (MWK)	657	1,119	439	680	0.02
Paid work (1/0)	0.168	0.133	0.185	-0.052	0.07
Number of working hours	7.51	4.89	8.79	-3.88	0.10
Per capita number of livestock	1.12	1.29	1.00	0.29	0.01
Per capita wealth of livestock	11,598	16,906	9,034	7,872	0.00
Per capita livestock expenditures	7,835	11,844	5,898	5,945	0.00
Per capita number of assets	2.514	2.756	2.398	0.358	0.01
Per capita number of agricultural assets	0.860	0.940	0.822	0.114	0.03
Per capita number of non-agricultural assets	1.655	1.819	1.575	0.244	0.01
Asset wealth index	-0.010	0.035	-0.032	0.068	0.59
Per capita quantity of harvest (kg)	189.70	225.46	172.56	52.90	0.00
Per capita quantity of harvest own consumption (kg)	107.58	131.43	96.09	35.34	0.00
Per capita quantity of harvest sold (kg)	13.84	16.28	12.67	3.61	0.07
Per capita value of harvest (MWK)	22,019	25,460	20,351	5,109	0.00
Per capita value of harvest own consumption (MWK)	10,789	12,533	9,949	2,584	0.00
Per capita value of harvest sold (MWK)	5,523	6,757	4,922	1,835	0.01
Per capita food consumption (MWK) (annual)	103,390	112,816	98,830	13,987	0.02
Diet diversity score	7.051	7.047	7.053	-0.006	0.96
HFIAS	0.725	0.679	0.747	-0.067	0.59
Per capita non-food expenditures (MWK) (annual)	37,419	43,284	34,585	8,699	0.02
Per capita total consumption (MWK) (annual)	139,381	154,799	131,923	22,876	0.00
Poor household (1/0)	0.749	0.687	0.764	-0.077	0.02
Drought impact (1/0)	1.347	1.340	1.351	-0.011	0.86
Drought recovery (1/0)	0.762	0.811	0.737	0.074	0.05
Number of months needed for drought recovery	9.422	8.692	9.819	1.127	0.00
Source: Authors					

<b>Table A5: Project impacts on several outcomes according to labour-constraint status</b>																	
Robustness check 1																	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
<b>Variables</b>	<b>Financial literacy index</b>	<b>Saving uptake (yes/no)</b>	<b>Amount savings</b>	<b>Amount Loans (MWK)</b>	<b>Start non-farm business (yes/no)</b>	<b>Paid work (yes/no)</b>	<b>P.c. wealth livestock (MWK)</b>	<b>P.c. value harvest (MWK)</b>	<b>Asset wealth</b>	<b>P.c. food consumption (MWK)</b>	<b>Diet diversity score</b>	<b>HFIAS</b>	<b>P.c. exp. Housing (MWK)</b>	<b>P.c. non-food expenditures</b>	<b>P.c. total consumption (MWK)</b>	<b>Drought impact size</b>	<b>Drought months for recovery (unconditional)</b>
Project * labour constraint	0.354 (0.354)	-0.088 (0.058)	-295.7 (2,067)	1,041 (1,260)	0.0148 (0.0281)	-0.126 (0.096)	-4,271 (4,805)	3,455 (4,004)	0.0689 (0.283)	-9,359 (18,623)	0.568** (0.270)	0.419 (0.339)	1,697 (1,515)	3,328 (11,287)	-4,725 (20,117)	-0.114 (0.126)	0.398 (0.699)
Project (yes/no)	0.246 (0.274)	0.267*** (0.0824)	4,581* (2,269)	960.4 (1,239)	0.054*** (0.019)	-0.0456 (0.032)	11,494** (4,597)	1,427 (3,779)	0.0528 (0.286)	20,555 (22,101)	-0.461 (0.288)	-0.427 (0.335)	915.5 (1,148)	6,134 (10,867)	25,702 (25,792)	0.0700 (0.156)	-1.667* (0.906)
Labour-constrained (yes/no)	-0.463*** (0.134)	-0.0301 (0.0644)	-1,022 (1,568)	309.3 (737.2)	-0.004 (0.019)	0.0367 (0.0382)	-3,421** (1,465)	-6,173** (2,770)	-0.347 (0.210)	-9,664 (8,630)	-0.506*** (0.182)	0.282* (0.171)	-264.6 (823.6)	-2,185 (6,250)	-13,960 (12,055)	0.0108 (0.0990)	-0.00137 (0.459)
Observations	778	786	784	786	723	786	786	778	786	776	786	782	786	786	776	786	593
Notes: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1. The specifications include standard control variables from the baseline survey that are not affected by the intervention (see Table 4 for detailed list of control variables). Standard errors are clustered at the district cluster level																	
Source: Authors																	

**Table A6: Project impacts on several outcomes according to labour-constraint status**

Robustness check 2																	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
Variables	Financial literacy index	Saving uptake (yes/no)	Amount savings	Amount loans (MWK)	Start non-farm business (yes/no)	Paid work (yes/no)	P.c. wealth livestock (MWK)	P.c. value harvest (MWK)	Asset wealth	P.c. food consumption (MWK)	Diet diversity score	HFIAS	P.c. exp. housing (MWK)	P.c. non-food expenditures	P.c. total consumption (MWK)	Drought impact (yes/no)	Drought months for recovery (unconditional)
Project * labour constraint	0.269 (0.291)	-0.054 (0.034)	84.08 (1,766)	1,249 (1,339)	0.0131 (0.0367)	-0.094 (0.0879)	-2,347 (4,505)	2,256 (3,562)	-0.149 (0.212)	-10,842 (17,860)	0.223 (0.248)	-0.220 (0.374)	88.76 (1,072)	-8,494 (8,970)	-17,963 (21,780)	-0.113 (0.124)	0.554 (0.549)
Project (yes/no)	0.330 (0.214)	0.266*** (0.0829)	4,261* (2,109)	832.1 (1,073)	0.0539*** (0.0197)	-0.0452 (0.032)	9,756** (4,237)	2,546 (3,238)	0.234 (0.270)	21,385 (20,166)	-0.159 (0.216)	0.148 (0.305)	2,296 (1,664)	15,916 (11,017)	36,290 (27,110)	0.0637 (0.148)	-1.781** (0.705)
Labour constrained (yes/no)	-0.424*** (0.130)	-0.0149 (0.0587)	-1,316 (1,398)	95.36 (666.0)	0.0017 (0.0166)	0.0532 (0.0320)	-3,292** (1,547)	-4,674* (2,368)	-0.331 (0.201)	-4,490 (7,752)	-0.310* (0.177)	0.285* (0.154)	-186.5 (722.8)	1,297 (5,495)	-5,247 (11,094)	-0.0449 (0.0819)	-0.337 (0.410)
Observations	778	786	784		723	786	786	778	786	776	786	782	786	786	776	786	593

Notes: Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. The specifications include standard control variables from the baseline survey that are not affected by the intervention (see Table 4 for detailed list of control variables). Standard errors are clustered at the district cluster level

Source: Authors

<b>Table A7: Determinants of using the proxy option</b>		
Dependent variable	(1) Proxy (yes/no)	(2) Active proxy (yes/no)
Age of beneficiary	0.006 (0.005)	-0.008 (0.013)
Age of beneficiary squared	-0.000 (0.000)	0.000 (0.000)
Female beneficiary (1/0)	-0.002 (0.034)	-0.076 (0.080)
School attendance beneficiary (1/0)	0.111 (0.070)	0.046 (0.100)
Married beneficiary (1/0)	-0.075 (0.052)	-0.092 (0.073)
Chronic illness beneficiary (1/0)	0.021 (0.053)	0.026 (0.083)
Disabled beneficiary (1/0)	0.026 (0.037)	0.043 (0.080)
Number of new household members	0.020 (0.037)	-0.038 (0.048)
Number of household members left	0.007 (0.022)	-0.002 (0.049)
Number of household members aged 19-65 (fit for work)	0.0464 (0.032)	-0.013 (0.037)
Number of children in school	-0.007 (0.007)	-0.189 (0.032)
Own land (1/0)	0.111* (0.066)	0.122 (0.081)
2nd quantile wealth assets index (1/0)	-0.018 (0.015)	-0.011 (0.083)
3rd quantile wealth assets index (1/0)	0.037 (0.051)	-0.017 (0.080)
4th quantile wealth assets index (1/0)	0.042 (0.034)	-0.007 (0.010)
Change_beneficiary (1/0)	-0.053 (0.046)	-0.010 (0.063)
MVAC (1/0)	-0.128 (0.081)	0.039 (0.114)
Food Input Subsidy Programme (FISP) (1/0)	0.000 (0.059)	0.212 (0.174)
School-meal programme (1/0)	0.069* (0.038)	0.099 (0.060)
Observations	256	256
Notes: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1. Standard errors are clustered at the district cluster level		
Notes: MVAC: Malawi Vulnerability Assessment Committee Programme		
Source: Authors		

<b>Table A8: Impacts of the proxy on several outcomes of non-labour-constrained beneficiaries</b>																		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
<b>Variables</b>	<b>Financial literacy index</b>	<b>Saving uptake (yes/no)</b>	<b>Amount savings</b>	<b>Amount loans (MWK)</b>	<b>Start non-farm business (yes/no)</b>	<b>Paid work (yes/no)</b>	<b>P.c. wealth livestock (MWK)</b>	<b>P.c. quantity harvest (kg)</b>	<b>P.c. value harvest (MWK)</b>	<b>Asset wealth</b>	<b>P.c. food consumption (MWK)</b>	<b>Diet diversity score</b>	<b>HFIAS</b>	<b>P.c. exp. Housing (MWK)</b>	<b>P.c. non-food expenditures</b>	<b>P.c. total consumption (MWK)</b>	<b>Drought impact (yes/no)</b>	<b>Drought months for recovery (unconditional)</b>
Active proxy	0.781*** (0.273)	0.291*** (0.0593)	3,019 (1,810)	174.0 (802.3)	0.0378 (0.0339)	-0.0525 (0.0863)	9,219** (3,630)	12.52 (28.49)	3,570 (3,343)	-0.207 (0.215)	356.8 (20,371)	-0.0722 (0.266)	0.0266 (0.483)	4,133** (1,622)	13,707 (9,809)	13,149 (24,202)	0.0187 (0.156)	-1.707* (0.871)
Non-active or no proxy	0.777*** (0.270)	0.366*** (0.0998)	4,699* (2,761)	2,011 (1,338)	0.0837 (0.0585)	0.101 (0.107)	9,143 (8,023)	-16.48 (29.01)	-7,314** (3,398)	-0.106 (0.404)	-6,717 (18,395)	0.0747 (0.300)	0.415 (0.632)	-153.9 (974.2)	-16,151* (9,400)	-22,221 (21,495)	0.180 (0.147)	-1.576 (0.985)
p-value (test of diff. between coefficients)	0.99	0.42	0.57	0.16	0.34	0.18	0.99	0.15	0.00	0.80	0.78	0.72	0.57	0.03	0.00	0.22	0.45	0.38
Observations	167	168	168	168	168	168	168	165	165	168	166	168	168	168	168	166	168	132

Notes: Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. The specifications include standard control variables from the baseline survey that are not affected by the intervention (see Table 4 for detailed list of control variables). Standard errors are clustered at the district cluster level

Source: Authors

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