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Impacts of linking savings group to formal financial service providers and strengthening their internal group insurance mechanism in Zambia

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3ie accepted the final version of the report, *Impacts of linking savings group to formal financial service providers and strengthening their internal group insurance mechanism in Zambia*, as partial fulfilment of requirements under grant TW4.1025 awarded through Agricultural Innovation Evidence Programme. The report is technically sound and 3ie is making it available to the public in this final report version as it was received. No further work has been done.

The 3ie technical quality assurance team for this report comprises Mark Engelbert, Deeksha Ahuja, Diana Milena Lopez Avila, Sayak Khatua, Stuti Tripathi, an anonymous external impact evaluation design expert reviewer and an anonymous external sector expert reviewer, with overall technical supervision by Marie Gaarder. The 3ie editorial production team for this report comprises Anushruti Ganguly and Akarsh Gupta.

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Executive summary

While the Zambian financial sector has shown moderate development over the past decade, lack of consumer awareness, low-cost products and financial literacy are challenges keeping financial inclusion at low levels. 48.7% of the rural farming population does not have access to financial services and 97.2% of the Zambian population does not use any insurance services. Part of the reason for the low financial inclusion are the high costs associated with operations in rural Zambia: banks, insurance companies and financial service providers are hesitant to provide financial services at low prices in rural areas as they expect high transaction costs and small volumes, thus, leading to financial losses. At the same time, the willingness to pay for financial services or insurance is very low in the rural sector. Savings groups could potentially be a vehicle that could help to increase access to financial services and mitigate non-insured risks.

In order to investigate two interventions or treatments aimed at increasing financial inclusion via savings groups, 3ie funded a Randomised Controlled Trial (RCT) with two interventions focusing on i) the financial linkage of community-based financial institutions (CBFIs) to the formal financial sector and ii) the strengthening of CBFIs with regard to their inherent insurance and social protection mechanism. For the project implementation funded by RUFEP, the researchers worked together with four local non-governmental organizations responsible for the implementation.

The first intervention aimed to foster financial linkage between CBFIs and the formal financial sector by educating savings group members on financial products and facilitating their cooperation with Financial Service Providers (FSPs). Thereby, supply of and demand for financial services are connected. The goals were to encourage savings groups to open a bank or mobile money account for the group. The second intervention focuses on the social fund, an informal micro-instrument for providing insurance for CBFIs via earmarked savings. CBFIs were encouraged to increase balances of these social funds, as well as to focus and structure their usage in order to strengthen efficiency and sustainability.

The main findings of the impact evaluation are:

1. *Opening of formal bank accounts.* The intervention increased the likelihood of opening formal bank accounts by savings groups and their members. However, the study also finds that the opening of bank accounts is still limited due to high bank and transportation fees and often takes place only after a substantial time lag.
2. *Active use of formal bank accounts.* Given that a bank account was opened, savings groups who participated in more than the linkage trainings are found to use their bank accounts more frequently considering deposits on a weekly and monthly basis, as well as annual withdrawals.
3. *Perception of the formal financial sector.* Even though an increase in the number of groups with formal group savings accounts was observed, willingness to pay for financial services remains low: group members often expressed dissatisfaction with the fees for bank accounts while some even did not understand or accept that there should be any fees at all.
4. *Social fund and self-insurance.* The study found that the maximum value of grants in group constitutions increased, particularly when grants focused on a

small range of shocks (e.g. only sickness and funerals) and the NGO's field officers involved showed sufficient commitment. Contributions to the social fund also increased, albeit only by a modest amount.

5. *Interaction between financial linkage and social funds.* In savings groups receiving both interventions, group members contributed more to the social fund than to the bank account and actively request money from the social fund.

Even though positive effects on immediate outcomes were found, these effects were not very large on average. The small size of these effects could possibly be due to a relatively short observation window and may increase further over time. As it became apparent, these interventions need more time for their effects to materialize. Thus, no general recommendations can be drawn at the time of writing, but we offer the following tentative recommendations.

Recommendations/lessons for future research and programming

1. *The adequateness of financial products and services.* The overall limited findings imply that further market development investments and activities are needed to promote financial products tailored to the needs of the target population, especially the promotion of mobile banking services. Here, the offer of group accounts for CBFIs, not just individual accounts, could be taken into consideration to make use of the group dynamics. For future programming, FSPs should be engaged and willing to take the necessary steps of adjusting regular products and services to the needs of savings groups, identified for example during trainings. Also, interested FSPs need to be willing to accept initial financial losses that such products are likely to yield before producing gains. In addition, willingness-to-pay for financial services of rural Zambians may remain low for many years. Thus, affordable financial services, e.g. through simpler mobile money services, may be a more efficient way to achieve financial inclusion.

2. *Sustainability of formal bank account usage.* Trust was identified as a key foundation for the success and the sustainability of financial inclusion. This includes trust between savings groups and FSPs, as well as trust in the security of funds and trust between group members. Sufficient levels of trust should be ensured prior to the start of activities. Complex or aggressive marketing campaigns of banks and financial service providers are not helpful for building trust. However, fees for opening an account, for its maintenance or for the use of specific services pose a barrier to opening and actively using back accounts regardless of the level of trust. Moreover, transportation costs and the unease of travelling with large amounts of money can further hinder individuals living in remote areas in the long term.

3. *Group self-insurance cannot be established quickly.* Although many savings groups established a social fund to be used in case of unexpected shocks when they were formed, those social funds have often fallen short in efficiency due to the following reasons: many savings groups contribute little to their social funds; support to members in need was often given out as a loan that had to be repaid with interest instead of a grant; and, in addition, self-insurance and saving motives were often mixed, e.g. using the social fund for school fees. Developing

mutual self-insurance groups will require more time since groups need time to reach mutual agreement about which shocks they want to self-insure and which amounts to dedicate to it. Due to the currently low willingness-to-pay for insurance even within small self-selected groups connected to high transaction costs, self-selection and moral hazard, formal insurance products are doomed to fail unless such willingness-to-pay has been developed via trainings and awareness sessions.

Contents

List of figure and tables

Abbreviations and acronyms

AD	Adult (indicating individual savings group member level)
CBFI	Community-based financial institution
DIP	Detailed implementation plan
H	Hypothesis
HH	Household
IV	Instrumental variables
IFAD	International Fund for Agricultural Development
ITT	Intention-to-treat analysis
FFI	Formal Financial Institution
FSP	Financial service provider
GRZ	Government of the Republic of Zambia
LATE	Local average treatment effect
NGO	Non-government organisation
OLS	Ordinary least squares regression
PAP	Pre-analysis plan
PSP	Private service provider
RCT	Randomised control trial
RUFEP	Rural Finance Expansion Programme
SF	Social fund
SG	Savings group
UM	University of Mannheim
ZMW	(Zambian) Kwacha

1. Introduction

While the Zambian financial sector has shown moderate development over the past decade, lack of consumer awareness, low-cost products and financial literacy are challenges keeping financial inclusion at low levels. 48.7% of the rural farming population is not financially included and 97.2% of the Zambian population does not use any insurance services[1]. This limited access to formal financial services is supported by the baseline findings of this study: less than 20% of the sampled respondents reported saving money outside of community-based financial institutions (CBFIs), a generic term for savings groups, and only 4.5% saved money with a formal bank. As part of a CBFI, our study participants engage in internal savings and credit schemes through which members can receive loans from the pooled savings.

Part of the reason for the low financial inclusion is the high costs associated with operations in rural Zambia: banks, insurance companies and financial service providers are hesitant to provide financial services at low prices in rural areas as they expect high transaction costs and small volumes, thus leading to financial losses. At the same time, the willingness to pay for financial services or insurance is very low in the rural sector.

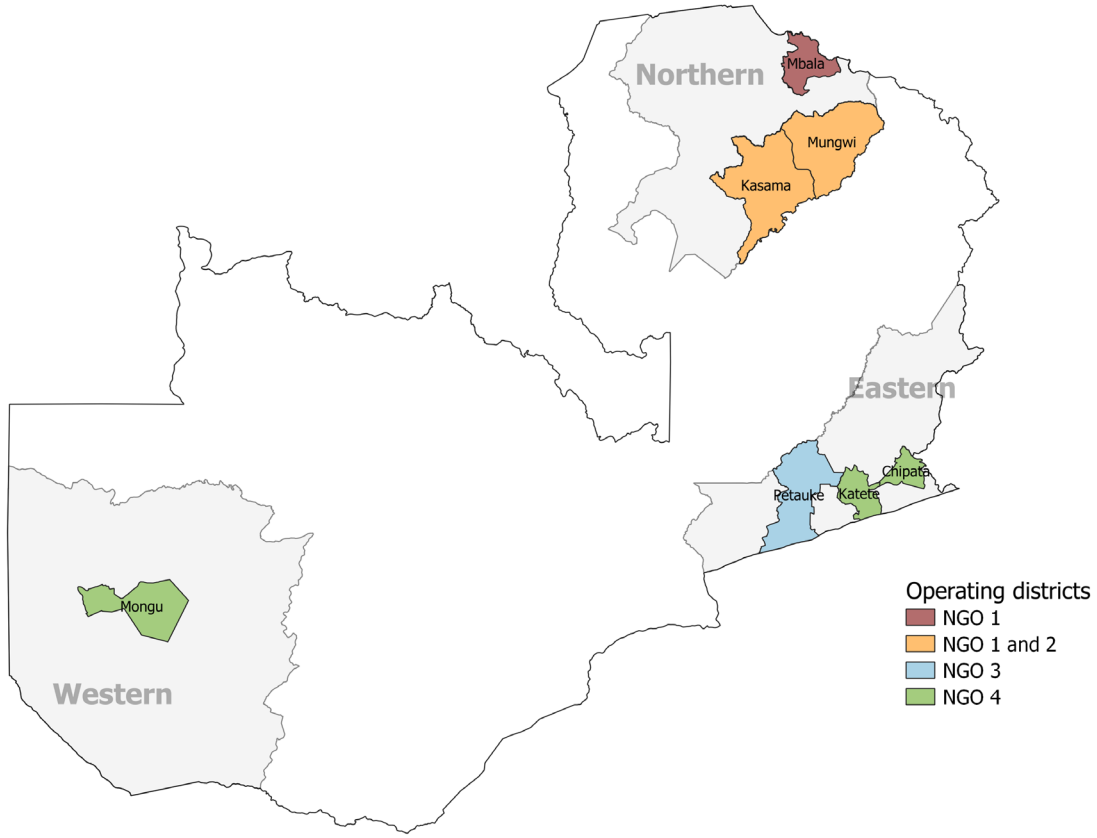
Savings groups could potentially be a vehicle that could help to increase access to financial services and mitigate non-insured risks. Previous studies in Malawi (Ksoll, Lilleor, Lonborg, & Rasmussen, 2016), Mali (Beaman, Karlan, & Thuysbaert, 2014) and Mozambique (Brunie, Fumagalli, Martin, Field, & Rutherford, 2014) already show that these kind of savings groups are effective in improving food security, consumption and increase expenditure for their members at least in some contexts. Given the positive evidence on the effectiveness of such savings groups and their widespread implementation, there is interest to study potential ways of improving the effectiveness of these savings groups and their inclusion in the formal financial system.

In order to increase financial inclusion, the Government of the Republic of Zambia and the International Fund for Agricultural Development (IFAD) jointly designed and established the Rural Financial Expansion Programme (RUFEP). The overall objective of RUFEP is to improve livelihoods of rural communities by improving the access to and use of financial services. Through its Innovation Outreach Facility (IOF), RUFEP offers matching grants to implementing partners via three windows: i) CBFIs; ii) Agency/Mobile Banking; and iii) Rural Finance Equity and Innovations.

Supported by funds from 3ie and the University of Mannheim (UM), UM conducted a randomised control trial (RCT) on RUFEP's first window targeting CBFIs in Zambia. RUFEP and UM worked with four non-governmental organisations (NGOs) as implementing partners. The operating districts of the respective NGOs are displayed in Figure 1. As the NGO 4 operated in two distinctively different provinces (both regarding geographical local and types of savings groups members), the results presented later in this report are often separated into NGO 4a (Western Province) and NGO 4b (Eastern Province).

[1] Financial Sector Deepening Zambia, 2015. *FinScope 2015: Top Line Findings.* FST Zambia. Available at: https://www.fsdzambia.org/publication/finscope-2015

Figure 1: Operating districts of the implementing partners in Zambia



Source: Self-created using shapefiles from https://data.humdata.org/dataset/zambia-administrative-boundaries-level-1-provinces-and-level-2-districts-with-census-2010-population.

2. Intervention

The first intervention of the RCT study aims to link CBFIs to financial service providers (FSPs) to induce financial intermediation of CBFI's excess savings and increasingly offer loans to CBFIs in need. The second intervention targets an informal insurance component of CBFIs, the social fund (SF). In the SF intervention, CBFIs are encouraged to increase the balances of their insurance savings to strengthen efficiency and sustainability.

2.1 Rolling out the interventions

The interventions are implemented by four NGOs selected by RUFEP in 2016. UM was not in contact with the NGOs during the stage of proposal writing. As part of an official governmental procurement process, RUFEP shared the proposals to UM only after the proposals were reviewed externally and internally and accepted in summer 2016. During this period, it was not possible to judge the proposals against the objectives of the RCT. However, RUFEP initiated the requirement of a detailed implementation plan (DIP) after the approval of the proposals. Since the proposals lacked in detail and did not exhibit an acceptable level of technical and organisational rigour, UM provided technical and editorial review of the DIP with RUFEP's support. After several rounds of editing and reviewing, during a period of about three months, the DIPs reached an acceptable level so that RUFEP could start the first batch of the grant disbursement.

Following the RCT design, explained by UM in several workshops and meetings and approved by all parties, the overall intervention is composed of three parts: (a) general training, (b) linking the CBFIs with banks to improve their access to broader and more tailored financial services and (c) strengthening the social fund as a mechanism of self-insurance and better financial literacy concerning the concept of insurance against intangible calamities. Components (b) and (c) are the two treatments to be studied. They are rolled out in a cross-cutting design. The eligible savings groups, identified during the baseline survey, are divided into four groups as shown in Table 1. The control group only receives the general training, the linkage group receiving components (a) and (b), the social fund group receiving components (a) and (c), and the interaction group receiving all three components.[2]

Table 1: Cross-cutting RCT design

		Social fund component	
		No	Yes
Linkage component	No	Control group *receiving general training only*	Social Fund group *receiving general training and social fund component*
	Yes	Linkage group *receiving general training and linkage component*	Both (linkage and social fund) group *receiving general training, social fund and linkage components*

In the following sub-sections, the different activities of each NGO are presented according to their DIP. In sub-section 5.1 Implementation fidelity, we assess the extent to which the DIP was followed based on quantitative and qualitative monitoring data.

2.2 NGO 1

The intervention of NGO 1 comprises 6 activities. They were active in the districts Kasama, Mbala and Mungwi in the Northern Province.

1) Creation of project awareness among stakeholders
2) Provision of financial education training to the savings groups
3) Capacity building of Private Service Providers (PSPs)
4) Promotion of financial products and services among treated savings groups
5) Facilitation of linkages and acquisition of legal documents among treated savings groups
6) Monitoring and evaluation

As a first activity, NGO 1 organised a meeting with key stakeholders from the government, traditional leaders, FSPs and NGOs operating in the target areas. In this meeting the key officials of the government and other key stakeholders were informed about the existence and purpose of the project in order to create sustainable networks, to strengthen the relationship between NGO 1 and stakeholders in the province, and most importantly, to secure approval from both government and traditional leadership.

[2] Note that there is no pure control group, i.e. CBFIs that receive no intervention at all.

For the second activity, NGO 1 developed a training manual with appropriate modules, which included visual aids that enhance adult learning and promote participatory approaches. Moreover, NGO 1 conducted training in Financial Education and Leadership to 20 Private Service Providers (PSPs) in order to equip them with relevant knowledge and skills. During a period of five days, five NGO staff implemented the training to the PSPs. Afterwards, the PSPs provided rollout training to the savings groups. The trainings took place at the usual meeting places of the groups. To ensure quality as well as to compile consolidated reports for each of the three districts, NGO 1 field supervisors coordinated this activity. Finally, the Project Manager compiled an overall training report for the project.

The fourth activity comprised three capacity building training meetings for PSPs and the NGO staff conducted by bank experts and UM. First, the PSPs and NGO 1 staffs were familiarized with the RCT design by UM. Second, bank experts provided information on available financial products and services that might benefit the savings groups. Furthermore, a session on basic marketing skills was conducted. Third, facilitators from UM provided details on the social fund to the PSPs and NGO 1 staff members.

The fourth activity was to promote financial products and services among the treatment groups in order to stimulate demand for linkages among the savings groups. The promotion activities are conducted by the PSPs during the usual meetings of the groups.

The fifth activity sought to facilitate linking the treated savings groups and the banks as well as to support the groups to acquire legal status. Therefore, meetings between the banks, the Registrar of Societies, and representatives of the treated savings groups were organized. In these meetings, the Registrar of Societies shared information on group registration requirements and procedures whereas the banks provided information on financial products and services. Moreover, NGO 1 supported the groups with transport logistics to the banks and photocopying the necessary documents in order to reduce the costs of registering for the groups.

Finally, NGO 1 monitored the progress of the project. In 13 visits, a team consisting of the M&E officer, the project manager, the project officer, and bank experts visited the PSPs to observe, mentor and clarify any issues that may arise with the potential to threaten the linkage process. Furthermore, quarterly review meetings were organised with the PSPs during which challenges and lessons learnt were discussed.

The content of the treatment arms was as follows:

General trainings
General financial education trainings were meant to provide CBFIs with the prerequisites to engage with and benefit from formal financial service providers. PSPs mainly spoke about income and savings, setting savings goals and creating budgets and savings plans.

Linkage
PSPs held informational meetings with the savings groups about their concrete opportunities to open bank accounts and hence ensure security for their joint savings. In the meetings, PSPs informed them about the requirements and implied charges of formal linkages with financial service providers. The trainings required about two meetings of 30 to 45 minutes and were scheduled after regular group gatherings.

Furthermore, the PSPs had an important role in accompanying the groups to the banks and helping them with the registration process. This included, besides the actual process of opening the account, support with the formal registration of the savings group at the Registrar of Societies. This registration is demanded by the government and therefore a prerequisite for opening an account.

Social fund

During social fund meetings, PSPs discussed the need of CBFIs for insurance and illustrated sensible changes in social fund constitutions. The interventions promoted changes to the groups' constitutions, specifically increases of individuals' contributions, postponing the share-out of the social fund and limitation of the usage of social fund grants to a selected type of shock.

2.2 NGO 2

The intervention of NGO 2 includes 6 activities. They were active in the districts Kasama and Mungwi in the Northern Province.

1) Creation of a new training manual
2) Creation of project awareness among stakeholders
3) Financial education training to savings groups
4) Combined workshop with savings groups and FSPs
5) Facilitation of linkages and acquisition of legal documents for treated savings groups
6) Monitoring and evaluation

In the first two activities, NGO 2 concentrated on strengthening the financial literacy of participating savings groups. This includes training on savings group operations, e.g. record keeping, interest calculation, share-out, and promoting opportunities created through access to a formal financial market.

After the trainings, NGO 2 facilitated workshops between savings groups and an FSP to form trust on both sides as well as allowing both parties to assess the advantages of a collaboration. Additionally, NGO 2 worked closely with its participating FSP to offer a suitable financial product to the treatment group.

For those savings groups deciding to form a linkage, NGO 2 assisted throughout the process. This includes providing assistance during account opening as well as serving as an intermediary for communications between FSPs and savings groups later on. NGO 2 facilitated the registration with local authorities and the signing of contracts between savings groups and the FSP. After formation of linkages, the focus was on establishing sustainable working relationships for savings groups and FSPs.

These services were combined with frequent monitoring visits to the treatment groups. Monitoring visits are also used to ensure the functionality of savings groups.

Since NGO 2 only implemented the linkage intervention, the activities do not include any interventions targeting the social fund. The content of the treatment arms was as follows:

General trainings
The general financial education trainings took place between June and September 2017. NGO 2 recruited four members of each group, including three members of the managing committee as well as one additional group member. Training modules included sessions on business management, marketing, costing and pricing, record keeping and business planning and leadership. The trainings combined lectures with group exercises and brainstorming by group members.

Linkage
To introduce and enhance financial linkages between the CBFIs and local banks, NGO 2 conducted four linkage trainings for managing committee members in September 2017. The workshops, which followed a common training programme across the districts, allowed bank representatives to introduce their products and services to CBFIs and gave members of CBFIs the opportunity to address their concerns and questions to the bank. Additionally, representatives of the Zambian Ministry of Commerce, Trade and Industry introduced groups to the prerequisites for formal registrations as clubs or cooperatives.

2.3 NGO 3

The approach of NGO 3 encompasses four major activities. They were active in the district Petauke in the Eastern Province.

1) Provision of monitoring, mentorship and technical support to the savings groups
2) Development of financial literacy material and training of savings groups in financial literacy
3) Facilitation of linkages between CBFIs and formal financial institutions
4) Program management

As first activity, NGO 3 developed monitoring tools and reporting forms for the target savings groups. The NGO further provided technical support for their field officers and savings groups every six months. The field officers offered technical support to the savings groups on a monthly basis. In addition, the field officers collected data every month and sent reports to NGO 3 on a quarterly basis. To verify the reports, NGO 3 visited the savings groups.

For the second activity, the NGO developed financial literacy training material. The training material was adapted from existing sources by externally hired consultants to ensure appropriateness for use in the training of savings groups.

For the third activity, NGO 3 supported savings groups to open accounts with a local bank to enable them to save their excess funds. As a first step NGO 3 organized meetings in order to familiarize field officers, the bank and savings groups with each other. Moreover, NGO 3 undertook, in cooperation with the bank, visits to the savings groups in order to provide ongoing support and obtain feedback on uptake of bank products. In order to assess the progress on the uptake and appropriateness of the products, NGO 3 held review meetings with the bank and field officers.

The fourth activity focuses on the monitoring of the intervention. In order to keep them up to date on sector-related knowledge, the NGO 3 staff participated in project-related local and international trainings, workshops and conferences.

Furthermore, meetings with RUFEP were held in order to assess progress on the overall project implementation, receive technical support and share reports including lessons learnt.

The content of the treatment arms was as follows:

General trainings
The general trainings were conducted with all 107 savings groups around the month of June 2017. Training modules included sessions on financial planning, saving and loan procedures, financial rights and obligations, and leadership.

Linkage
The linkage trainings were conducted in June 2018. These trainings discussed the advantages of opening a group bank account and the requirements to do so. In addition, NGO 3 distributed bank account opening forms and provided technical support.

Social fund
NGO 3 conducted trainings regarding the strengthening of the social fund in April 2018. These trainings used stories and examples to illustrate the advantages of insurance and the characteristics of insurable shocks. A focus was set on encouraging savings groups to increase their social fund contributions and raise pay-outs in the case of funeral and health shocks.

2.4 NGO 4

The intervention of NGO 4 comprises the following activities. They were active in the districts Chipata, Katete in the Eastern Province and Mongu in the Western Province.

1) Needs assessments of savings groups
2) Training and exposure for savings groups
3) Consultation with formal FSPs
4) Linkage of savings groups and FSPs
5) Self-insurance/social fund

As first activity, NGO 4 assessed the special needs of the savings groups in order to receive information about which intervention best suits each group. Therefore, a questionnaire was constructed and given to at least two members of a group, preferably the group leader and secretary/record keeper.

To enhance the capacity of savings groups, trainings and exposure visits were organized. In exposure visits underperforming groups learned best practices from groups that had more experience in efficient group activities like record keeping or sharing out the savings. The trainings were based on the need assessments done in Activity 1. For instance, groups that were identified to have gaps in record keeping were trained in this issue. Moreover, a group with excellent record keeping skills joined this meeting to serve as an example. The groups were clustered according to the needs assessments. If the number of groups was manageable, four to five members of a group are trained, otherwise only two members. The trainings were conducted by the project officers and field facilitators and lasted two hours. If external assistance was required, agricultural extension officers and their partnering field facilitators were requested to assist.

The third activity is to conduct consultative meetings with formal FSPs in order to link savings groups and FSPs. In these meetings, misconceptions of FFIs and savings groups about each other were resolved by familiarising savings groups with the different products of the FSPs. In addition, the FSPs were introduced to the specific characteristics of the savings groups, which facilitated the offer of better-tailored financial products.

As the fifth activity, NGO 4 organized meetings between FSPs and savings groups. The fifth activity deals with the social fund or self-insurance of the savings groups. NGO 4 advocated increasing the social fund contribution.

The content of the treatment arms was as follows:

General trainings
The general trainings were mostly conducted between May and July 2017. These trainings aimed at informing groups about the basic operations of savings and lending associations. Modules covered in these sessions included group formation, resource mobilization, selection of leadership, terms and conditions of loans, development of group constitutions and record keeping. NGO 4 followed a needs-based approach, where deficiencies of groups were identified, such that certain sessions were more emphasised than others.

Linkage
Linkage trainings were held between January and June 2018. The trainings were structured such that FSPs, i.e. mobile money providers, could discuss products available for CBFIs. These trainings introduced CBFIs to the terms and conditions of different products. The modules of the training were consistent across all the groups with few differences. The linkage trainings were scheduled for four hours to allow the attendees to understand the product, practice how to use the mobile phone, and ask questions for more information or clarification.

Social fund
The social fund interventions took place from November 2017 to September 2018 and were structured in such a way that the field facilitators visited the groups during their monthly meetings. Field facilitators presented and discussed the advantages of increased contributions to the social fund, such as higher resilience of groups and group members in times of shocks as well as the traditional purposes and conditions of the social fund.

3. Theory of change

3.1 Enhancing the capacity of CBFIS through financial education

Despite operating for many years, CBFIs might face challenges following their inherent principles. Therefore, the implementing partners assessed the special needs of the CBFIs and trained them accordingly. These trainings include record keeping, member screening, interest rate calculation, and annual planning. This should improve individual savings behaviour and the operation of CBFIs. Furthermore, it will prepare them for linkage to the banks. Only if the groups are able to manage savings and loans smoothly can they cooperate with formal financial service providers.

3.2 Improving security and intermediation of loanable funds: linking CBFIs to formal financial service providers

One major concern for CBFIs is the safety of the funds that the groups accumulate throughout the year. Especially towards the end of a cycle a large amount of money is deposited inside a box. In this period theft or fire may pose considerable security risks. If individuals are aware of the risk of losing their money, they will save less than they optimally would if their savings were more secure. Linking the groups to FSPs can eliminate this security risk by depositing the savings in a bank account to prevent theft and other threats. As a result, individuals are willing to save larger amounts. Additionally, depositing savings with an FSP commits the savings and prevents impulsive withdrawals as funds are less easily accessible (i.e. withdrawal requires travelling to a bank). Dupas & Robinson (2013) find that having bank accounts, despite usage fees, lead micro entrepreneurs in rural Kenya to save more and increase their productive investments.

With these higher savings, people might be able to smooth consumption more effectively over the year. This hypothesis assumes that funds are regularly accessible by savings group members. Furthermore, higher savings at the end of the cycle will create larger funds which can be invested in business or agriculture, which may result in higher productivity.

Furthermore, savings groups might gain access to more financial products by building a financial history with the banks. A functioning cooperation between the groups and the bank will increase mutual trust. Acknowledging constant or even increasing inflows on their accounts, the bank might offer the groups better conditions. For example, opening, maintenance or withdrawal fees might be reduced or rescinded. Moreover, the groups might even earn interest on their savings. Due to the lower costs of saving, individuals might increase their savings even more. Similarly, a higher level of trust in financial institutions will have a positive impact on savings.

Besides the effects on savings, the linkage has the potential to alleviate borrowing constraints in the long term. Burlando & Canidio (2017) suggest that savings groups are unable to satisfy the loan demand of their members, especially groups consisting of poorer members. As savings accumulate slowly over time, loanable funds are scarce, and the groups are limited by their members' contributions which are smaller in groups consisting of poorer households. Thus, while providing some financial inclusion, savings groups fail to fully alleviate the borrowing constraints of their members.

Moreover, the growing trust in the group's financial sustainability might induce the bank to offer loans to the group at an affordable interest rate. This is related to the problem of asymmetric information, a serious constraint in credit markets in developing countries. The lack of collateral leads to high interest rates, since monitoring borrowers is very expensive or impossible. The bank's long-term relationship with the group will reduce the monitoring requirements as FSPs can partly rely on the group's inherent monitoring mechanisms. There is evidence that these mechanisms such as peer monitoring through co-signers (Klonner and Rai, 2010) and, especially, peer screening and monitoring in individual and joint liability group lending with the possibility to impose social sanctions (Giné and Karlan, 2014) alleviate credit market imperfections. All these factors will decrease credit costs for individuals and reduce administration and screening costs on

the supply side. Since the bank obtains more funds than the savings groups, the availability of formal credit allows for larger investments. Additionally, groups self-select to form a joint liability. Given that individual members know about their fellow members' assets and ability to save, it is likely that groups self-select and consist of "good" borrowers with an inherent high repayment rate. This assumes that individuals have information about other members' assets and that they are able to estimate repayment probabilities (Wenner, 1995).

While including savings group members directly in the formal financial system is challenging, it might be more feasible to include savings groups as a whole in a first step. In other words, linking entire groups instead of individuals to the bank has several advantages. As mentioned above, lending to the groups will reduce the monitoring costs for the bank. Furthermore, the group mechanism can surmount barriers for individuals to open an account. According to FinScope Zambia 2015 the most indicated reason for neglecting bank services is "insufficient money to justify using a bank". When opening an account as a savings group instead of individual accounts, this threshold is overcome. Further, potential fees for opening an account or withdrawal are distributed across members and thus weigh less in each individual's financial planning. Short-term individual monetary shortages are balanced out across members in the group which results in less fluctuations in savings and contributes to the group's credibility in regard to a financial profile for receiving credit. Furthermore, existing savings in the bank account can serve as collateral.

Nevertheless, savings groups might have limited potential to promote financial inclusion among the poorest of the poor. Screening procedures for members might discriminate against the group of people deemed financially unreliable as it is in the interest of the other group members to reduce the risk of loan defaults and to generate interest. In this light, there are more efficient mechanisms to benefit the poorest.

3.3 Improving the intermediation of risks: Upgrade the group's inherent social fund

CBFIs have a social fund to help members in emergency cases, i.e. precautionary savings which are supposed to be accessible to members in case of a negative shock. The extent to which the social fund can be used for risk sharing among the group members depends on the rules designed by the group, in particular the size of contributions and the purpose of the social fund. It seems plausible to presume that the capacity of the social fund to mediate risks among the members of CBFIs is rather limited, especially for covariate risks, i.e. risks that affect many group members at the same time (e.g. weather shocks). For idiosyncratic risks, i.e. risks that affect individual group members (e.g. illness), the social fund's capacity may be limited by the volume of the fund and the rules for administration.

We proposed to strengthen the social fund with a set of recommendations concerning insurance within the group in a first phase (self-insurance at the CBFI level). Since understanding of the insurance mechanism is not prevalent among the target population, financial education on insurance should be offered to the savings groups. In these trainings, issues such as the definition of an insurable shock, the benefits of insurance in contrast to individual savings and fairness concerns should be covered. These trainings

promote a social fund in the sense of a micro-insurance system. This will render the social fund more efficient, because the coverage focusses on those shocks that cause serious disruptions in the income of households. To further strengthen the social fund, we promote increasing the contributions. Building on the increased financial literacy and social fund contributions, we encourage groups to devote this increase in contributions to the grants given for assistance in the case of a funeral or sickness. We chose these two shocks, since they pose the most prevalent idiosyncratic risks to households. Even though the social fund will not be able to offer full coverage due to the small number of members, the given grants will still alleviate the disruptions in income that these shocks cause.

Currently, households react to those shocks in different ways. Some get assistance from family and friends to cover the expenses. However, this support does not always suffice. Thus, households are forced to sell assets, crops or even take loans with high interest rates to cover their expenses. These unexpected expenditures disturb financial planning, which is important to be able to smooth consumption over the year. For example, if crops that were stored for the planting season have to be sold, households will have difficulties maintaining their consumption in the months without income.

Increased assistance from the social fund will reduce the measures needed to cover unexpected expenses. This will augment the household's resilience to shocks and support them in maintaining their annual consumption planning. Moreover, the higher grants in the event of a sickness might induce households to use medical treatments they could not afford beforehand. All in all, this RCT study might shed further light into how the savings component or the social insurance component, in form of the social fund, enables savings groups members to improve consumption and their resilience to shocks (for previous suggestive evidence see Beaman, Karlan, & Thuysbaert, 2014).

Similar to all insurance mechanisms, the functioning of the social fund is challenged by adverse selection, moral hazard and fraud. Since the predominant activity of savings groups are savings and credits, adverse selection should not be a major challenge for the social fund. However, increasing the assistance might attract individuals with higher risks. Therefore, a monitoring mechanism to observe new members should be introduced.

The prevalence of moral hazard might be a bigger challenge. After the increase of the entitled grants people might be tempted to increase their expenses in the case of a sickness or funeral. For example, they could decide to buy a more expensive coffin which they would not have done otherwise. However, even after the increase the maximum grants given out will cover only a fraction of the expenditures. Therefore, deliberately increasing the costs for a funeral or sickness will not increase the funds received from the social fund.

In contrast to the first two, fraud certainly causes a big problem. The increased grants might incentivize members to pretend to have a sickness or a funeral. Since groups do not have the capacity to prove the veracity of a claim, it is very difficult for them to detect a false claim. Therefore, it is important to introduce strict rules to either limit the possibility of fraud or to increase the costs of being detected to reduce the expected benefits of a fraud.

3.4 Logical Framework

This sub-section illustrates all components of the theory of change with their objectives and indicators and discusses the assumptions for and the threats towards the causal chains. Table 2 summarises the logical framework in bullet points.

3.4.1 Inputs

At the input stage, there are two objectives. The first one is to facilitate the linkage of CBFIs to formal financial service providers. For this purpose, workshops and trainings are conducted to familiarize CBFIs with banks and the necessary steps to open an account. The second objective is to provide trainings to strengthen the social fund. In these trainings increasing the regular monthly contributions is promoted. Furthermore, CBFIs are encouraged to devote the increase in contributions to increased coverage in the event of funerals or sicknesses. This increase should be given out as a grant which means that the beneficiaries do not have to pay the money back. To convince the groups of the benefits of such an insurance system, the promotion is accompanied with financial education on insurance. This entails the definition of shocks, the reasons for a grant-based system and rules to prevent fraud.

To assess to what extent the linkage between CBFIs and FSPs was facilitated and to what extent training to strengthen the social fund took place, the number of workshops and trainings for the respective purposes is measured.

3.4.2 Outputs

The objective for the linkage at the output stage is the increase in bank accounts held by CBFIs. Moreover, the trust in FSPs should increase, encouraging CBFI members to open individual bank accounts. For the social fund, the goals are an increase in the regular contributions as well as the devotion of these contributions to higher grants in the event of a funeral or sickness.

The indicators for the linkages are the number of CBFI bank accounts and individual bank accounts. For the social fund, the number of contributions and grants relative to their value in the event of a funeral or sickness are measured.

To see impact at the outputs stage, certain assumptions have to be met. With respect to the objectives regarding the linkage, CBFI members have to trust the formal financial service providers. Moreover, the perceived benefits of the linkage, namely security of funds, must outweigh the costs of opening the bank account such as fees and transportation. The objectives concerning the social fund require three assumptions. First, the CBFI members have the willingness and the ability to pay the higher contributions. Furthermore, the groups should decide to use the increased funds to increase the coverage for funerals and sicknesses, and not for other purposes such as celebrating a festival at the end of the cycle. Finally, the money should be given out as a grant and not a loan, i.e. this money does not need to be repaid. Consequently, the individual financial burden of the shock will be reduced sustainably whereas a loan would only postpone the problem. Convincing members of such a system is extraordinarily challenging for those groups currently practicing a fully loan-based system.

3.4.3 Outcomes

For the outcomes, there are four objectives. First, the deposit of money at bank accounts increases the security of funds and thus the volume of savings. Second, the increased grants will reduce the vulnerability of households in the event of a funeral or sickness. Moreover, the higher grants induce people to use the social fund more frequently and to obtain more medical services. The last two objectives might have two underlying reasons. The first possibility would be that members are now more aware of the social fund and the higher grants give them the possibility to obtain necessary services they could not afford before. On the other hand, the increased usage could be due to fraudulent claims or if individuals do not value the usage of medical services as much as the amount of grants they receive, they might use the services just because they are now free.

The indicator for the first objective is the volume of savings. The vulnerability of households is assessed with two methods. First, through the self-reported impact of shocks and second, through how members react to shocks, such as by selling assets or leaving children out of school. Concerning the increased usage of the social fund, the number of claims is measured. The number of doctoral visits and special medical treatments such as body scanning are used as an indicator for increased usage of medical services.

The impact of the intervention is based on three crucial assumptions. First, the security of funds must be a binding constraint for saving. If individuals do not perceive their funds unsafe or this perceived insecurity would not deteriorate the savings behaviour, the improved safety of funds would not have any effect on the amount of savings. Additionally, savings group members need to be capable of saving more. With respect to the second objective, the increased grants should be large enough to compensate for a considerable part of the financial burden of a shock. For the third objective, it is assumed that savings group members were not as aware of the social fund before the training and the increase. Finally, the critical assumption behind the increase in the usage of medical services is that members either have a willingness-to-pay for the treatment which is above zero but below the price of the treatment or that they are income constrained concerning the treatment.

3.4.4 Impact

The overall goal of the project is to smoothen consumption of the households. This is measured through the number of months with food shortages. The assumptions are that the increase in savings is large enough to alleviate income disruptions and the increased grants from the social fund are able to considerably reduce the expenditures for funerals and sicknesses.

Table 2: Logical framework

	Objectives	Indicators	Assumptions/Threats
Inputs	(i) Facilitating linkages between CBFIs and formal financial institutions	(i) Number of trainings/workshops	(i) Members understand benefits of linkage
	(ii) Training to strengthen the social fund a. Promoting an increase of social fund contributions b. Advocating to devote the increase to a higher coverage in the event of funerals and sicknesses	(ii) Number of social fund trainings	(ii) Members understand benefits and mechanism of social fund
Outputs	(i) Linkage: a. CBFIs have opened bank accounts at banks/mobile money providers b. Increased trust in financial institutions c. Increased awareness of mobile money	(i) Linkage: a. Number of group bank/mobile money accounts b. Level of trust in different financial institutions c. Percentage of group members who know about mobile money	(i) Linkage: a. Members trust formal financial service providers b. The cost of the linkage (fees and transport to access the funds) do not outweigh the perceived benefits of more safety
	(ii) Upgrade of the social fund a. Increase of social fund contributions b. Increase of grants received in case of a funeral or sickness c. Increased trust in insurance providers d. Insurance literacy	(ii) Social fund: a. Amount of contribution b. Grants received in the event of a funeral or sickness c. Level of trust in informal insurance companies and willingness to comply with insurance system d. Insurance knowledge and attitude	(ii) Social fund: a. CBFIs can afford and are willing to increase contribution b. CBFIs are willing to use the increase to the coverage of the two shocks c. CBFIs are willing to use the increase to strengthen the grant-based system in the event of these two shocks d. The trainings include a part about insurance and members understand the benefits

	Objectives	Indicators	Assumptions/Threats
Outcomes	(i) Linkage: a. More savings activity inside the savings group b. More fund security c. More loan activity d. Increased usage of mobile money	(i) Linkage: a. Savings volume b. Perception of fund safety c. Value and number of individual loans taken d. Percentage of group members who conducted a transaction with mobile money in the last 3 months	(i) Linkage a. Members perceive security of funds as a constraint for saving b. Members have the capacity to save more c. Transaction costs for taking a loan do not outweigh the higher available funds for loans
	(ii) Social Fund: a. Less vulnerability to funerals and sicknesses b. Increased usage of the social Fund c. Better coping mechanisms to shocks d. Higher coverage rate of a shock by the social fund	(ii) Social Fund: a. Locus of internal control, perceived impact of a shock and adaptive behaviour such as unintentional sale of assets or borrowing b. Number of grants and loans given out from the Social Fund c. Professional treatment for health shocks; frequency of health treatment; funeral attendance	(ii) Social Fund: a. The increase of the grants in the event of a shock is high enough to cover for a substantial fraction of the household´s cost b. The higher grants induce members to claim money from the social fund c. The higher grants incentivize individuals to obtain better or more health services and attend more funerals
Goals	(i) Improved consumption smoothing	(i) Consumption smoothing: a. Months with food shortages b. Days without eating c. Days where reduction of meals necessary d. Less help needed from outsiders	(i) The increased savings are high enough to alleviate income disruptions (ii) The money saved from the lower out-of-pocket payments in the event of a funeral or sickness is high enough to overcome food shortages
	(ii) Higher resilience for future shocks	(ii) Higher resilience for future shocks a. HH assets b. Livestock	(iii) The higher savings and the lower out-of-pocket payments are invested in assets

4. Evaluation

4.1 Outcome variables

The ultimate desired outcomes of the linkage intervention are to increase investment and to decrease the excess of loan demand over loanable funds in the CBFIs as a consequence of higher savings. The first outcome is measured by the three most common income generating activities: higher spending on fertilizers and seeds in agriculture, higher livestock purchase for livestock owners and higher investment in individual businesses for entrepreneurs. The second outcome is assessed through less self-reported need for a higher loan, the maximal loan amount defined in the constitution of the CBFI and the value of loans received.

As the most important secondary outcome, more savings activity will be measured by individual regular contribution and group or individual share-outs as well as the current amount of savings in the pot. The change in savings activity would result from the secondary outcome most directly linked to the treatment: the opening and active usage of bank or mobile money accounts. In addition, a whole range of other secondary outcomes are analysed, ranging from more loan activity to perception of fund security, trust in formal financial institutions and awareness and usage of mobile money.

The Social Fund treatment has two ultimate outcomes. On the one hand, with improved assistance, the household's vulnerability to shocks decreases because the shock is not as severe on a financial level (e.g. a disease whose medical expenses are (partly) covered with the money from the social fund). Key measurements for this positive effect are the perceived vulnerability, less reported reactions to shock in terms of sale of assets or crops and loans taken and a stronger internal locus of control. On the other hand, better coping mechanisms are expected, measured in terms of better and more frequent treatment of health shocks or more funeral attendance.

The secondary outcomes from the social fund intervention are based on increased contributions and usage of the social fund. In theory, this should lead to a reduction in out-of-pocket payments in case of shocks, i.e. a higher coverage rate of shocks by the social fund measured as the ratio of total cost to social fund coverage and the total pay-out in case of health or funeral shocks. In addition, other secondary outcomes like the number of claims from the social fund, the subjective trust in formal insurance companies and insurance literacy will be recorded.

4.2 Design and methods

The impact evaluation of this project is based on an RCT design captured in an online available pre-analysis plan (PAP) via the AEA RCT Registry with the unique identifying number "AEARCTR-0002640". The present report and its online supplement (Online Appendix B) include the findings after testing of the all PAP hypotheses using the available survey data. In addition, the sensitivity analysis, especially with regard to using relevant control variables, are more elaborated than previously described in the PAP.

4.2.1 Sample and sample size

The final sample was determined by (a) the geographical locations proposed by the implementing partners and (b) the eligibility of the savings groups within that

geographical area serviced by the four NGOs. In total, the programme locations are in seven districts of three provinces.[3] The baseline survey included all 534 savings groups which were active at the time of the survey[4] and which were formed on 1 July 2015 or before[5] to ensure their maturity. After the assessment of eligibility, we excluded 14 savings groups from NGO 3 as they were already benefiting from a different programme financed by a different funder, leaving 522 savings groups which were included in the RCT study.

4.2.2 Randomisation

The savings groups in the baseline survey were randomised, stratified by their NGO affiliation. Some of the savings groups in near vicinities were clustered in 351 randomization units to avoid spill-over effects. For each NGO the affiliated savings groups or clusters were assigned to one of the treatment arms offered by that NGO.[6] To ensure a good balance across the treatment arms, a re-randomisation procedure was conducted. The savings groups were re-randomised repeatedly until a pre-specified degree of balance of 26 variables was reached.[7]

Table 3 shows how many savings groups are affiliated with each of the NGOs and how many were assigned to each of the treatment arms.

Table 3: Number of CBFIs per treatment arm and NGO

	Control	Linkage	Social fund	Both	Total
NGO 1	35	35	52	30	152
NGO 2	30	44	-	-	74
NGO 3	20	30	30	27	107
NGO 4	55	40	42	52	189
Total	140	149	124	109	522

For all data collection activities, we trained the interviewers in how to seek consent for survey participation and how to explain the confidentiality of the responses to the survey participants. Furthermore, all savings groups in the RCT benefitted from the general training component of the intervention to avoid control groups receiving no services.

4.3 Household survey and sampling

In 2016, the baseline survey was carried out to capture the characteristics of the target population and the status quo before the start of the interventions. The respondents of the individual survey were randomly selected from CBFI members; usually four members

[3] Kasama, Mbala and Mungwi in Northern Province; Chipata, Katete and Petauke in Eastern Province; Mongu in Western Province.
[4] A few exceptions were made for groups which paused momentarily but could convince the survey team that they would resume their activities quickly.
[5] There were exceptions made for savings groups for which date of formation could not be verified through external information like dates in the registry.
[6] Three of the NGOs implemented both the linkage with financial institutions and the social fund intervention. NGO 2 could focus only on the linkage intervention as the number of affiliated savings groups was too low.
[7] This degree of balance specified the amount of statistically different variables across treatment arms, as well as the distance between treatment arms according to a multivariate distance measure to account for dependencies between variables.

per CBFI were interviewed. In addition, surveys to capture information on the respective households and villages or communities were conducted.

This evaluation relies on a three-wave panel household survey of sampled savings group members and a monthly phone survey at the savings group level. The survey data for this impact evaluation is structured on three levels. The panel data was collected in three waves: baseline in June and October 2016, the midline in July 2018 and the endline in July 2019.

First, individual level data is collected in a private interview with a savings group member. This adult questionnaire asks for details regarding savings and credit behaviour, social group membership and awareness of mobile money.

Second, household level data is gathered. This data contains information on household composition, health history of household members, savings and credit behaviour of household members, agricultural and business activities, and assets and housing.

Third, an interview is conducted with a representative of the savings group for wave 2 and 3 in a face-to-face setting. This extensive CBFI questionnaire seeks to explore the functioning and administration of the group and asks specific questions about linkage and the social fund. During the baseline, instead of the extensive CBFI questionnaire, a village level questionnaire was administered to gather information on village level characteristics.

In addition to the questionnaires administered in each of the panel waves, monthly telephone surveys were conducted between April 2018 and April 2019. In this process, a representative of the savings group is contacted each month to be asked questions about balance of funds, social fund usage and status of the linkage repeatedly. The monthly phone survey was especially valuable to guide the endline data collection. However, due to some wording changes in the instrument, the phone survey data is less useful for causal inference of some indicators and thus, its analysis is mainly excluded from this report.

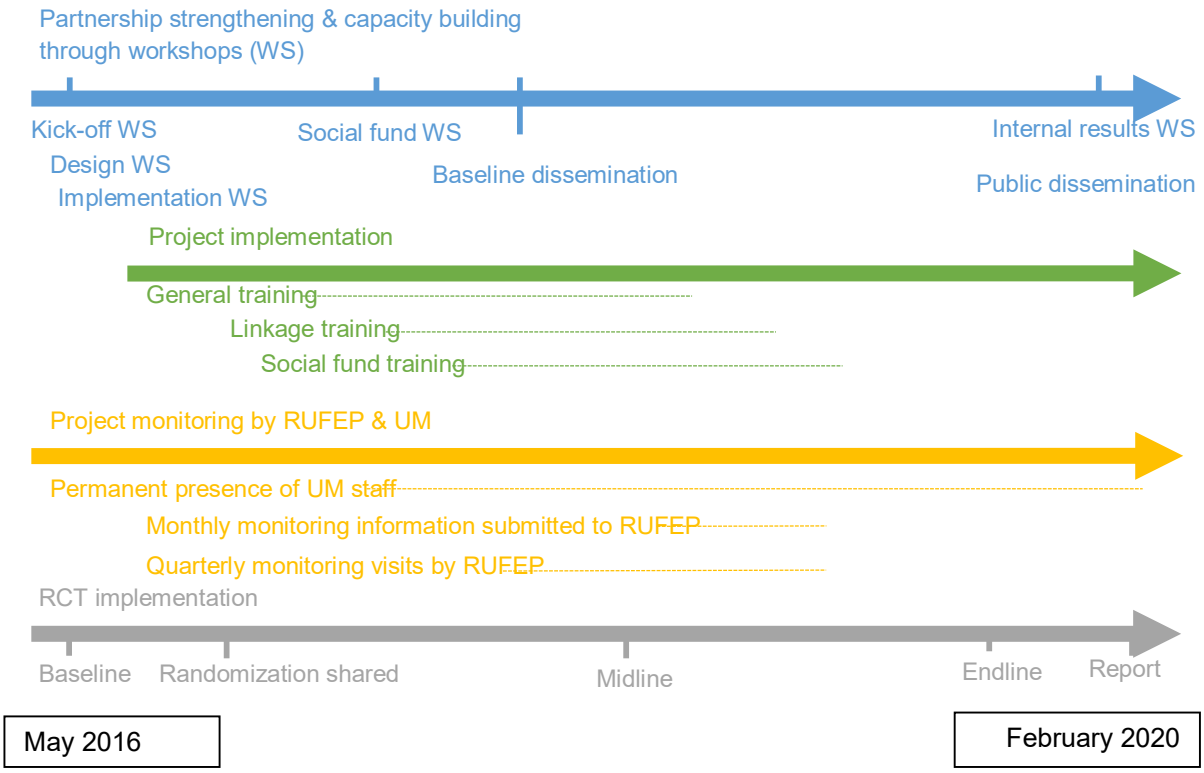
Regarding quality control, UM was leading and monitoring all relevant data collection efforts with regard to questionnaire design, questionnaire testing, and interviewer training to ensure data quality. In each province, there was one UM staff accompanying the survey teams and checking the collected data on a regular basis. In addition, the survey firm for midline and endline conducted call-backs and small audio-recordings of selected questions during fieldwork.

4.4 Monitoring plan

The monitoring was done on a continuous and regular basis by UM representatives based in Lusaka during October 2015 until July 2019 as shown in Figure 2 even though the partnership was only officially started with the kick-off workshop in May 2016. In 2016 and 2017, UM's monitoring focused on facilitating the finalisation of the DIPs so that each implementing partner had a sound strategy for implementation and monitoring. In addition, UM facilitated the design of the implementation in four workshops to ensure that the experimental design was understood and respected, both by the NGOs' headquarters and their field staff.

Whenever possible, UM staff attended trainings for all implementing partners in the field to observe how the interventions were rolled out. The key quantitative data for monitoring consisted of attendance lists of the training sessions, used to later assess implementation fidelity (see Section 5.1 Implementation fidelity). In addition, the permanent presence of UM staff in Lusaka permitted the collection of qualitative data on the implementation process through personal exchanges and provided the implementation partners with technical consultation on the impact evaluation design whenever requested.

Figure 2: Monitoring and Evaluation Timeline



5. Findings of the impact analysis

5.1 Implementation fidelity

To monitor the treatment implementation, the four NGOs were instructed to keep account of attendance at the general financial education trainings as well as social fund and linkage trainings and agreed to do so in their DIPs. This passage gives an overview of the inventory of attendance lists that the evaluation team from UM received from respective NGOs, as of October 2019.

Table 4: Attendance lists received

NGO	General training		Linkage training		Social fund training	
	Attendance lists received	Targeted groups for training	Attendance lists received	Targeted groups for treatment	Attendance lists received	Targeted groups for treatment
NGO 1	41%	152	Not done, work plans of field officers available	65	Not done, work plans of field officers available	80
NGO 2	100%	74	100%	44	–	0
NGO 3	82%[8]	107	0%	57	63%	57
NGO 4	76%	189	23%	92	41%	94

Note: source: attendance lists sent by the NGOs.

Table 4 shows that many of the attendance lists are missing, especially for the linkage and social fund trainings. UM repeatedly communicated this issue to each NGO and requested missing deliverables on a regular basis. However, some NGOs did not implement attendance lists due to negligence while others mentioned other reasons (e.g. loss of documents due to moving headquarters). None of the implementing partners made efforts to reconstruct missing attendance lists mainly due to lack of funds to travel to the respective savings groups individually. NGO 1 only provided work plans of their field officers to show when the two interventions were rolled out. Unfortunately, these plans did not specify which savings groups were targeted and which groups attended.

Table 5 Summary of falsely trained groups as of October 2019

NGO	Linkage training			Social fund training		
	Falsely trained groups	Targeted groups for treatment	attendance lists received by UM	Falsely trained groups	Targeted groups for treatment	attendance lists received by UM
NGO 2	1	44	100%	–	–	–
NGO 3	0	57	0	5	57	63%
NGO 4	2	92	23%	7	94	41%

Note: NGO 1 is excluded as they did not provide attendance lists for linkage and social fund trainings. Source: attendance lists sent by the NGOs.

Based on the attendance lists received, UM assessed the implementation fidelity of the implementing partners. Table 5 captures the number of savings groups which attended trainings they should not have received according to their treatment status. Note that this clearly reflects a lower bound given that not all attendance lists were shared. The number of targeted groups and the percentage of received attendance lists are provided to facilitate a comparison between NGOs.

According to the self-reports of the four implementing partners, trainings were implemented following the agreed guidelines and goals in the DIP with a few exceptions, e.g. when savings groups came uninvited to trainings and the field officer could not reject them. UM requested to attend at least one session for general, linkage and social fund

[8] NGO 3 delivered general attendance lists on savings group level, meaning UM cannot track the attendance of individual savings group members.

training for each NGO. With the exception of the social fund trainings by NGO 4, which were conducted without inviting UM, UM staff could attend the trainings in local languages to verify the structure. Regarding the linkage training of NGO 4, UM staff could observe that the chosen mobile money agencies could not offer collective financial products which met the needs of the savings groups. Thus, the linkage training focused on financial products or business strategies only beneficial for individuals, like opening a mobile money booth. Regarding the social fund training of NGO 4, it became clear through personal exchanges with the field officers that they do not support the headquarters' strategy of focusing the social fund on sickness and funerals. As UM staff were not present for the social fund trainings for NGO 4, it is impossible to judge how the trainings were rolled out.

5.2 Descriptive statistics at baseline

5.2.1 Household characteristics (see Table 6)

The average household size is approximately 6 members for each NGO. The percentage of female headed households is below 20% except for NGO 4, where the share of female headed households is over 30%.

On average, households report about 6 assets, with households affiliated with NGO 2 and 3 reporting higher numbers. While households of NGOs 1 and 2 report hardly any agricultural assets, about 35% of assets in households affiliated with NGO 3 are agricultural.

The percentage of households with at least one member receiving income from paid economic activities ranges from 15% (NGO 2) to 28% (NGO4). The fraction of households with agricultural production is above 90% for all NGOs except NGO 4 (76%).

On average households spend 15 Kwacha per month on health. Average monthly expenditure on education ranges across NGOs from 77 to 236 and is 122 Kwacha for the full sample.

Table 6: Household characteristics

	Full sample		**NGO 1**		**NGO 2**		**NGO 3**		**NGO 4**	
	Mean	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**
# of HH members	5.90	2.21	6.01	2.08	6.35	2.22	5.80	2.22	5.71	2.29
HH head is female	0.24	0.42	0.18	0.38	0.19	0.39	0.19	0.40	0.33	0.47
# of agricultural assets	1.24	2.79	0.31	1.54	0.45	0.89	3.01	4.38	1.17	2.19
# of other assets	5.03	3.80	4.52	3.08	6.48	4.43	5.57	3.94	4.54	3.79
Paid activities	0.25	0.43	0.24	0.43	0.15	0.36	0.27	0.44	0.28	0.45
Agricultural production	0.86	0.34	0.90	0.30	0.96	0.19	0.92	0.27	0.76	0.43
Monthly education expenses (ZMW)	121.7	369.3	77.0	114.6	236.4	728.7	113.4	294.6	118.1	326.9
Monthly health expenses (ZMW)	14.8	93.5	17.9	105.5	16.5	84.7	11.2	88.6	13.8	89.7
Observations	2099		593		289		468		749	

Education expenses are reported for the whole year. Paid activities and agricultural production refer to at least one HH member.

5.2.2 Respondent demographics (see Table 7)

Across NGOs, 78% of the respondents are female and for NGO 4 even 86%. A typical respondent is between 40 and 43 years old. 15% have no education, but a majority finished at least Grade 5.

Table 7: Respondent demographics

	Full sample		NGO 1		NGO 2		NGO 3		NGO 4	
	Mean	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**
Is female	0.78	0.41	0.73	0.44	0.71	0.46	0.76	0.42	0.86	0.34
Age in years	42.4	12.9	41.3	13.1	47.7	12.8	40.7	12.4	42.4	12.7
No education	0.15	0.36	0.089	0.28	0.043	0.20	0.20	0.40	0.21	0.40
Grade 1-4	0.19	0.39	0.19	0.40	0.19	0.39	0.21	0.41	0.18	0.38
Grade 5-7	0.36	0.48	0.42	0.49	0.41	0.49	0.32	0.47	0.31	0.46
Grade 8-9	0.18	0.38	0.21	0.41	0.21	0.41	0.14	0.35	0.18	0.38
Grade 10-12	0.09	0.29	0.07	0.26	0.11	0.31	0.092	0.29	0.10	0.30
Higher education	0.03	0.17	0.01	0.09	0.04	0.20	0.05	0.21	0.03	0.17
Observations	2043		562		283		458		740	

5.2.3 Financial behaviour outside the CBFIs

As expected (see Table 8), access to financial markets is limited. Less than 20% of the whole sample reports saving money in a place outside of the CBFI. About half of those who have savings outside a CBFI have savings at home and only about 18% (NGO 1) to 33% (NGO 2) have savings at a private or governmental bank. That means over the whole sample only 4.6% have savings at a bank. Given that the respondent has alternative savings, the value of these savings varies a lot and is on average 1960 Kwacha (192 USD/161 EUR).[9] Almost no one reports having received loans from outside a CBFI in the last twelve months. The average value of those loans is 1354 Kwacha or (133 USD/111 EUR). The use of mobile money is in comparison widespread. 41% of the total sample report ever having used mobile money services and 23% used them within the last 3 months.

Table 8: Financial activity outside the CBFIs

	Full sample		NGO 1		NGO 2		NGO 3		NGO 4	
	Mean	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**
Saves outside SG	0.17	0.37	0.14	0.35	0.24	0.43	0.17	0.38	0.15	0.36
Savings at home or secret place	0.49	0.50	0.53	0.50	0.38	0.49	0.59	0.49	0.45	0.50
Savings at bank	0.27	0.44	0.18	0.39	0.33	0.47	0.23	0.42	0.32	0.47
Savings value (ZMW)	1960	10359	476	724	3827	20788	1952	3298	1916	7475
Received loan outside SG in last 12 months	0.03	0.16	0.02	0.13	0.03	0.18	0.03	0.16	0.03	0.18
Loan value (ZMW)	1354	1991	340	431	2421	2465	1632	2762	1236	1582
Ever used mobile money	0.41	0.49	0.35	0.48	0.50	0.50	0.46	0.50	0.37	0.48
Used mobile money in last 3 months	0.23	0.42	0.18	0.38	0.28	0.45	0.26	0.44	0.22	0.42
Observations	2128		605		298		467		758	

Note that savings and loan values are conditional on having any savings or loans outside a CBFI.

[9] For all currency conversions we used the exchange rates from December 1st 2017.

Trust between CBFI members and FSPs is key in explaining rates of CBFI members opening bank accounts. Across all NGOs, the trust in government banks is high with at least 68% reporting complete or substantial trust. For private banks, trust is slightly lower around 50%. For microfinance institutions it is slightly less than 50%. Trust towards NGOs and among members in the communities is relatively high at around 75%. For more details see Table 9.

Table 9: Trust in institutions

	Full sample		NGO 1		NGO 2		NGO 3		NGO 4	
Complete or substantial trust in…	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**
Government Banks	0.74	0.44	0.79	0.41	0.82	0.39	0.70	0.46	0.68	0.47
Private Banks	0.53	0.50	0.58	0.49	0.53	0.50	0.50	0.50	0.49	0.50
MFIs	0.44	0.50	0.50	0.50	0.43	0.50	0.45	0.50	0.38	0.49
NGOs	0.75	0.43	0.73	0.44	0.66	0.47	0.86	0.35	0.74	0.44
Neighbours	0.75	0.43	0.81	0.39	0.71	0.45	0.70	0.46	0.76	0.43
Observations	2128		605		298		467		758	

5.2.4 CBFI characteristics

The sample contains data on 533 CBFIs. Table 10 contains information about characteristics and activities of these groups. A CBFI contains on average 22 members with averages for NGOs ranging from 19 (NGO 4) to 26 (NGO 1). Most of the CBFIs meet on a weekly (51%) or monthly (46%) basis and either store their excess cash in boxes (48%) or lend it out to members (48%). These practices vary considerably between NGOs. CBFIs affiliated with NGO 1 and 2 mostly use cash boxes and meet mostly weekly and monthly respectively. Those affiliated with NGO 3 and 4 mostly lend out their cash and meet mostly monthly and weekly respectively.

The mean contribution to the CBFI savings scheme is 114 Kwacha or 11 USD/9 EUR per month for the whole sample. Across the NGOs, the average contribution ranges from 93 Kwacha (NGO 2) to 136 Kwacha (NGO 3).

Table 10: Savings group characteristics

	Full sample		NGO 1		NGO 2		NGO 3		NGO 4	
	Mean	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**
# of SG members	22.2	7.09	26.4	7.09	20.9	7.72	23.3	5.95	18.6	5.25
Storage of savings:										
Cash box	0.48	0.50	1	0	0.72	0.45	0.13	0.34	0.14	0.34
All savings loaned out	0.48	0.50	0	0	0.16	0.37	0.87	0.34	0.82	0.39
Frequency of meeting										
Weekly	0.51	0.50	0.88	0.33	0.014	0.12	0	0	0.71	0.45
Biweekly	0.032	0.18	0.020	0.14	0	0	0	0	0.074	0.26
Monthly	0.46	0.50	0.11	0.31	0.99	0.12	1	0	0.21	0.41
Monthly contribution (ZMW)	114.3	228.2	104.6	103.2	92.8	100.7	135.8	415.5	117.1	165.5
Share of borrowers	0.66	0.33	0.43	0.30	0.43	0.28	0.86	0.17	0.80	0.29
Value of loan (ZMW)	589.7	1042.4	385.2	502.1	448.8	535.6	664.9	889.0	726.5	1437.6
Reimbursement period in months	1.58	0.76	1.43	0.71	1.72	0.85	2.26	0.73	1.18	0.38
Purpose of loan										
Food consumption	0.17	0.25	0.21	0.30	0.100	0.22	0.12	0.18	0.20	0.26
Education	0.13	0.22	0.16	0.28	0.18	0.29	0.11	0.16	0.11	0.17
Agricultural spending	0.13	0.24	0.23	0.33	0.23	0.28	0.047	0.11	0.080	0.17
Business	0.48	0.35	0.34	0.38	0.37	0.37	0.61	0.30	0.52	0.32
Observations	533		152		74		118		189	

Note that first the average is taken within savings groups and then across savings groups, this means that the average value of a loan is not the average value of a loan in the sample as loans in savings groups with many loans receive smaller weights.

A key component of the CBFI scheme is loans issued to members. On average 66% of interviewees borrowed within the last 12 months and those loans were on average 590 Kwacha or 58 USD/48 EUR. There are however differences between NGOs. Members affiliated with NGOs 1 and 2 are less likely to borrow and their average loans are smaller than members affiliated with NGOs 3 and 4. The main purposes for taking loans are business (48%), food consumption (17%), agricultural spending (13%) and education (13%).

The average membership duration is the highest for CBFIs working with NGO 2 (17 months). Most of these groups were formed between 2008 & 2012 under the Rural Finance Programme.[10] Due to NGO 1 operations that are constantly forming new groups with the help of PSPs in the community, these groups are relatively younger on average.

[10] The Rural Finance Programme was active from 2004 to 2013 and can be considered a predecessor of RUFEP.

5.2.5 Social fund

Table 11 summarizes the Social Fund activities of the respondents. Across all NGOs, almost every respondent made contributions to the Social Fund of their savings group. On average the contributions are 8 Kwacha or 0.78 USD/0.66 EUR per month, but respondents affiliated with different NGOs make on average different contributions. For NGOs 2 and 3 the average monthly contribution is 3-4 Kwacha, while for NGO 4 it is 14 Kwacha. On average 25% of respondents received money from the Social Fund. However, the Social Fund does not function as an insurance scheme, as the majority (67%) of those receiving money are also paying money back to the Social Fund.

Table 11: Social fund activity of respondents

	Full sample		**NGO 1**		**NGO 2**		**NGO 3**		**NGO 4**	
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**
Contributes to Social Fund	0.95	0.22	0.97	0.18	0.97	0.17	1	0	0.89	0.32
Monthly contribution (ZMW)	7.89	26.7	7.08	18.8	3.78	4.25	3.05	2.32	13.8	41.9
Received money from SF	0.25	0.43	0.24	0.43	0.26	0.44	0.13	0.33	0.34	0.48
Repaid money to SF	0.67	0.47	0.60	0.49	0.34	0.48	0.61	0.49	0.84	0.37
Observations	2021		564		282		463		712	

5.3 Balance

To improve the quality of the evaluation, the randomisation was done with the aim of ensuring good balance along 26 variables. These variables include information on household and CBFI conditions. To confirm balance, we conducted t-tests on all variables used in the randomisation between treatment arms within each NGO and overall.

Table 12 shows differences between those who received the linkage or social fund intervention and those who did not. Note that these are not comparisons between treatment arms such that the table is in line with the specifications used in the analyses. The variables are measured on the level of the randomisation unit at baseline. We can see that there are only few variables with (statistically significant) differences between groups. In the research analyses we will control for these variables. Similar balance tables for NGO-specific subsamples are provided in Online Appendix B.

Table 12: Balance: Full sample

Variable	No linkage (1) Mean/SE	Linkage (2) Mean/SE	Difference (1)-(2)	No social fund (3) Mean/SE	Social fund (4) Mean/SE	Difference (3)-(4)
Average # of children per household (<15)	2.58	2.55	0.03	2.51	2.59	-0.09
	[0.05]	[0.05]		[0.05]	[0.05]	
Average # of occupied rooms per household	3.37	3.38	-0.01	3.27	3.27	-0.00
	[0.06]	[0.05]		[0.05]	[0.05]	
Average # of members of participating CBFIs	22.46	21.69	0.77	22.12	22.37	-0.24
	[0.38]	[0.40]		[0.42]	[0.42]	
Average contribution to savings scheme (ZMW)	46.30	53.63	-7.33	45.84	42.92	2.93
	[3.44]	[4.03]		[4.68]	[2.45]	
Average contribution to social fund (ZMW)	2.96	3.03	-0.07	3.09	2.66	0.43
	[0.39]	[0.16]		[0.48]	[0.14]	
Average household size	5.92	5.88	0.03	5.74	5.91	-0.17*
	[0.07]	[0.07]		[0.07]	[0.06]	
% that took a loan from CBFI	0.60	0.59	0.01	0.66	0.62	0.04
	[0.02]	[0.02]		[0.02]	[0.02]	
Average # of CBFI members that took a loan	46.16	29.92	16.24***	34.90	48.87	-13.97***
	[3.58]	[1.84]		[2.24]	[3.94]	
Average food security index	1.25	1.22	0.03	1.37	1.21	0.16**
	[0.05]	[0.04]		[0.05]	[0.05]	
Average # of months with food scarcity	1.52	1.42	0.10	1.58	1.50	0.08
	[0.05]	[0.04]		[0.05]	[0.05]	
Average livestock value per household	2932.46	3399.09	-466.63	3613.19	3373.18	240.01
	[257.26]	[342.14]		[412.01]	[279.48]	
Average school attendance rate	0.76	0.76	-0.00	0.74	0.75	-0.01
	[0.01]	[0.01]		[0.01]	[0.01]	
Average value of agricultural sales	2890.04	2853.42	36.61	3531.06	2804.57	726.49
	[763.67]	[574.71]		[784.30]	[791.52]	
Additive score of trust in institutions	4.36	4.20	0.16**	4.39	4.28	0.11
	[0.05]	[0.06]		[0.06]	[0.06]	
Share of female headed households	0.24	0.23	0.01	0.24	0.25	-0.01
	[0.01]	[0.01]		[0.01]	[0.01]	
# of CBFIs in the randomization unit	3.84	2.69	1.15***	2.78	4.16	-1.38***
	[0.31]	[0.17]		[0.20]	[0.35]	
Average area of land of household	10064.74	7238.61	2826.13	11125.86	7589.04	3536.83
	[3028.02]	[333.00]		[3736.74]	[322.55]	
Average value of loan from CBFI	855.46	971.26	-115.80	1149.58	904.13	245.46

Variable	No linkage (1) Mean/SE	Linkage (2) Mean/SE	Difference (1)-(2)	No social fund (3) Mean/SE	Social fund (4) Mean/SE	Difference (3)-(4)
per household						
	[92.33]	[127.04]		[160.00]	[90.32]	
Average value of loan used for business per household	556.03	613.30	-57.27	752.12	589.11	163.01
	[70.21]	[102.55]		[129.58]	[67.38]	
Average value of loan used for agricultural per household	29.99	34.05	-4.05	38.73	27.94	10.79
	[5.60]	[5.52]		[6.09]	[6.60]	
Average value of loan used for food per household	40.49	40.02	0.47	47.34	43.81	3.53
	[5.70]	[4.95]		[6.79]	[5.55]	
Average value of loan used for education per household	107.55	93.65	13.90	117.38	105.04	12.34
	[15.27]	[14.41]		[20.54]	[13.65]	
# of inhabitants in the village	928.94	1077.86	-148.92	1383.63	701.40	682.23*
	[250.25]	[186.77]		[366.96]	[80.85]	
% of households with access to public electricity	0.35	0.31	0.04	0.25	0.38	-0.13***
	[0.03]	[0.03]		[0.03]	[0.03]	
Urban, semi-urban or rural settlement	2.02	2.14	-0.12**	2.05	2.07	-0.02
	[0.04]	[0.04]		[0.04]	[0.05]	
N	264	258		214	233	

Balance test based on the comparison between savings groups, no adjustment of standard errors. Savings groups affiliated with NGO 2 excluded for social fund comparisons. The value displayed for t-tests are the differences in the means across the groups. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

5.3 Research analyses

The main specification for the evaluation takes the following form and is estimated using ordinary least squares (OLS):

$$Y_i = \alpha + \beta D_{Ti} + \gamma X_i + \epsilon_i \, , T \in \{l, s\}$$

were D_{li} and D_{si} are treatment dummies for the linkage and social fund intervention respectively. X_i are control variables. Index i refers to an individual, household or savings group. Treatment dummies refer to assigned treatment and the reported parameter is β (intention to treat).

However, as noted in section 5.1 Implementation fidelity training was not always delivered as assigned such that in addition to the above mentioned OLS procedure an instrumental variables (IV) estimation is carried out with treatment assignment as instrument for actual treatment to account for partial compliance, the reported parameter then estimates a local average treatment effect (LATE).

In all specifications standard errors are clustered on the level of randomisation units of which there are 349, representing clusters containing 1 to 18 savings groups. Control

variables X_i include unbalanced randomisation variables on the group level at baseline and age and gender for analyses on the individual level. The standard specification includes those variables which were unbalanced in the full sample and is referred to as c0 in the regression outputs (see Table 13 for details).

Other specifications include those variables which were unbalanced in a number of subsamples with respect to NGO affiliation. Additional control variables are sometimes added depending on the outcome variable.

We further conducted different sensitivity checks. For these checks, we excluded inactive members and inactive groups at the time of the endline from the sample.

We conducted all analysis on the full sample and separately for each NGO-specific subsample, as we observed substantial differences regarding the de facto implementation of the treatment in the field during our monitoring.

Table 13 Different sets of unbalanced control variables

Set of controls	Included variables
Linkage c0	Average # of CBFI members that took a loan; Additive score of trust in institutions; # of CBFIs in the randomization unit; Urban, semi-urban or rural settlement
Social fund c0	Average # of CBFI members that took a loan; Average food security index; # of CBFIs in the randomization unit; % of households with access to public electricity

Set of control variables used in the standard specification based on unbalanced randomization variables in the full sample at baseline. Unbalanced refers to a statistically significant difference at the 5% level. See Table 12 for more details on balance with respect to the different treatments in the full sample.

5.4 Findings for linkage intervention

Table 14 summarises the findings for the hypotheses relating to the linkage intervention as specified in the PAP. For most hypotheses there are no findings and as a result many of them will not be discussed in the following subsections. Note that “no findings” means that we do not find a statistically significant effect that is somewhat robust to different specifications and sensitivity tests, it does however not imply that there was no effect.

The presentation of findings will be in order of a proposed causal chain rather than split by primary and secondary outcomes as specified in the PAP.

For this subsection, “treatment group” refers to both the pure linkage treatment arm as well as the treatment arm receiving both linkage and social fund training, i.e., all CBFIs who were assigned to receive the linkage intervention. “Control group” on the other hand refers to those not receiving the linkage intervention, i.e., the pure control and pure social fund group.

Table 14: Overview of findings for linkage intervention

Outcome / Indicator	PAP ref.	Evidence
Linkage intervention		
# of groups that have opened a group bank account	H1	Positive impact overall, driven mainly by NGO 1.
Active group bank/mobile money accounts	H2	
# of deposits made with the group account	*H2*	Positive impact overall, driven by some NGOs, unconditional of having a bank account.
# of withdrawals from the group account	*H2*	No findings.
# of transfers from the group account	*H2*	No findings.
% of group members who know about mobile money	H9	No findings. Over 80% know about mobile money.
% of group members who used mobile money in the last 3 months	H10	No findings.
Attitudes		
Perception of funds safety	H3	No findings overall. Slightly negative for NGO 2.
Level of trust in different financial institutions	H8	No findings.
Costs associated with bank/mobile money account	H11	Sample size too small for meaningful analysis.
Activity		
Savings activity inside the savings group	H4	
Value of individual regular contribution	*H4*	No findings.
Value of current group savings by time in cycle	*H4*	No findings.
Value of group share out	*H4, H14*	No findings.
Value of individual share out	*H4*	No findings.
Loan activity	H5	
Value of individual loans taken	*H5,H7*	Negative impact for NGO 2
# of individual loans taken	*H5,H14*	No findings.
Meeting frequency	H14	Slightly positive for NGO 3 and 4a.
Member drop-out	H12	
# of members dropped since the last share out	*H12*	No findings.
# of group members	*H12*	No findings.
Outcomes		
Unsatisfied demand for loans in CBFIs	H7	
Maximum of loan amount which savings group offers	*H7*	Not analyzed as considerable amount of SGs have no rule about this.
Need for higher loan than savings group can provide	*H7*	No findings. Two ways outcome is constructed.
Group power relationship	H13	
Perception of group democracy	*H13*	No findings.
Level of trust in group members	*H13*	Positive for NGO 1, not very robust.
# of internal theft incidents	*H13*	No findings.
# of loan defaults	*H13*	Mixed for specific NGOs, not very robust. Two ways outcome is constructed.
Investment activity	H6	
Spending on fertilizers and seed	H6	No findings.

Outcome / Indicator	PAP ref.	Evidence
Livestock expenditure	*H6*	Nothing overall, mixed for specific NGOs. Four ways outcome is constructed.
Investment in individual businesses	*H6*	Positive interaction effect only.
Goals		
Consumption smoothing	H25	
# of hungry months	*H25*	No findings.
Days without eating	*H25*	Mixed for specific NGOs for children. Separate for adults and children.
Days where reduction of meals necessary	*H25*	Positive for NGO 1 for both adults and children.
Help needed from outsiders	*H25*	No findings.
Resilience for future shocks	H26	
HH assets	*H26*	No findings. Several assets used as outcomes.
Livestock	*H26*	No findings. Several outcomes and several ways these are constructed.

Column 1 lists and groups the indicators and outcomes studied for the linkage intervention. Column 2 shows to which hypotheses the indicators are linked according to the PAP. Column 3 gives a brief description of the findings across the different specifications but does not include heterogeneity except with respect to NGO affiliation. For more details refer to the following sections or Online Appendix B.

As shown in Table 14 we tested effects on many types of outcomes, some with several indicators, and separately for each NGO. However, we did not make multi-hypothesis-testing adjustments for any results presented. This should be kept in mind in the following subsections and is one reason why we do not report all statistically significant findings, especially when there is no pattern across similar outcomes. The heterogeneity analysis across NGOs was included due to different implementation modalities. This is justified by the fact that treatment arm randomisation was stratified by NGO.

5.4.1 Formal linkage

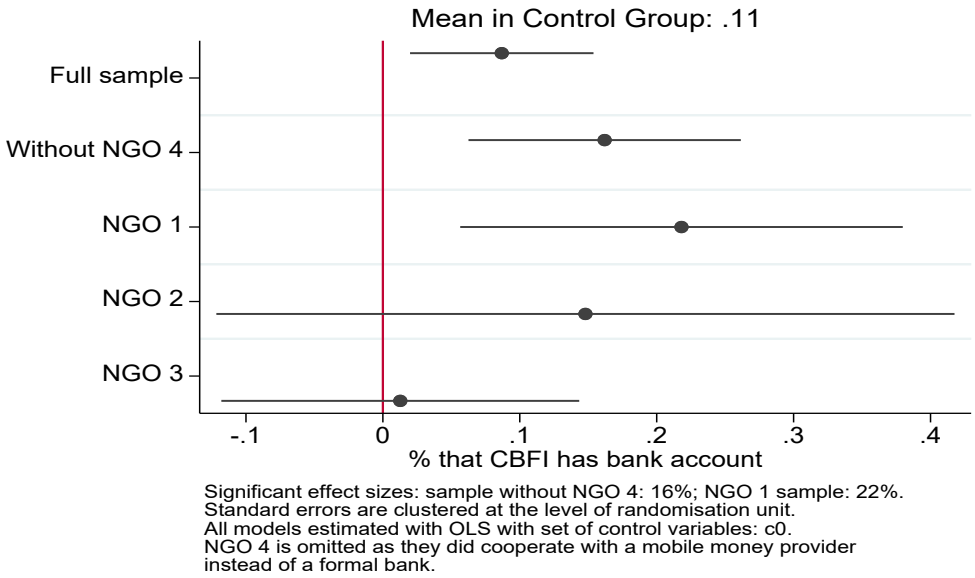
The linkage intervention aims to establish formal linkages between CBFIs and FSPs through active bank or mobile money accounts. We evaluate this by analysing how many CBFIs have a bank account and by the frequency with which they use it.

Table 15: Outcome variable: CBFI has bank account

	(1) Full sample	(2) Without NGO 4	(3) NGO 1	(4) NGO 2	(5) NGO 3
linkage	0.09*	0.16**	0.22**	0.15	0.01
	(0.03)	(0.05)	(0.08)	(0.13)	(0.07)
_cons	0.01	0.07	0.20	-0.39	-0.04
	(0.10)	(0.17)	(0.25)	(0.40)	(0.24)
adj. R^2	0.066	0.076	0.085	0.014	-0.031
N	522	333	152	74	107

Standard errors in parentheses are clustered at the level of randomisation unit. Different columns refer to different (sub)samples. All models estimated with OLS with set of control variables c0.
NGO 4 is omitted as they did cooperate with a mobile money provider instead of a formal bank.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Figure 3: Outcome variable: CBFI has bank account



Significant effect sizes: sample without NGO 4: 16%; NGO 1 sample: 22%.
Standard errors are clustered at the level of randomisation unit.
All models estimated with OLS with set of control variables: c0.
NGO 4 is omitted as they did cooperate with a mobile money provider instead of a formal bank.

Table 15 reports OLS regression results on whether or not a savings group owns a bank account. The results are robust with respect to different sets of controls and excluding dormant savings groups from the sample. There is a significant ITT effect of the linkage training on owning a bank account. In the specification excluding NGO 4,[11] being assigned to the linkage training increases the likelihood of a group owning a bank account from about 10% by about 15%. This is driven by CBFIs affiliated with NGOs 1 and 2.[12] This heterogeneity across NGOs might be explained by differences in implementation, but alternative explanations are also plausible. Both NGO 1 and 2 are active in the Northern Province and most savings groups affiliated with them used a cash box at baseline, instead of lending their excess cash to group members.

Apart from encouraging groups to open and own bank accounts, the linkage intervention also aims to increase the active use of those accounts. Active use of the group bank account is operationalised by depositing and withdrawing money from the group account and transfers from the group account to the individual member accounts. Although we did not find a significant effect when it comes to transfers, there is evidence that savings groups in the treatment group deposit more into their group account on a weekly and monthly basis and withdraw more on an annual basis. Conversely, savings groups in the control group are more likely to never conduct deposits and/or withdrawals (see Figures 5 and 6 in Online Appendix A).[13]

NGO 4 decided to cooperate with a mobile network provider instead of a formal bank. As a group account with mobile money has yet to be launched in Zambia, the analysis for the linkage intervention of this implementing partner focuses on awareness and

[11] Note that NGO 4 decided to cooperate with a mobile network provider instead of a formal bank. As a group account with mobile money has yet to be launched in Zambia, the analysis for the linkage intervention of this implementing partner focuses on awareness and usage of mobile money.
[12] While the imprecisely estimated effect for the NGO 2 subsample is only significant in some specifications, it is always positive. The estimated effect for NGO 3 is always close to zero.
[13] These effects are not conditional on having a bank account.

individual usage of mobile money only. Regarding awareness of mobile money, we do not find significant effects. However, it should be noted that over 80% is aware of mobile money. Further, there is no evidence that individuals in treatment savings groups are more likely to have conducted a transaction with mobile money in the last 3 months.[14]

5.4.2 Attitudes and activity

As few groups opened a bank account, we are not able to analyse any effect on the cost of using such accounts in a rigorous manner. However, about 30% of groups with a bank account mention high fees as a problem. We further find no evidence for increased trust in (financial) institutions or for an increase in perceived safety of funds.

Even though the linkage intervention was effective in establishing formal linkages, the effect might be too small to allow for detection of changes further down the causal chain, as formal linkage was a key component in the theory of change. Further, formal linkage alone, without an increased perception of security, might not be enough. Thus, it might not be surprising that we do not find evidence for changes in savings group activities.

There is no evidence that individuals in treatment savings groups have higher regular savings contributions or that either savings groups or individuals in the treatment cohort share out or receive a higher amount at the end of the cycle, or that savings groups in the treatment group have a greater value of savings in the pot anchored by the time in the savings group cycle.

We also did not find evidence that savings group members exposed to the linkage treatment receive more loans or loans with a higher value. However, treated members affiliated with NGO 2 reported receiving loans with a lower value (see Table 24 in Online Appendix A). Moreover, NGO 3 and NGO 4a linkage groups are meeting more often than their counterparts in the control group (see Table 25 in Online Appendix A).

In sum, the limited effects found regarding diverse savings group dynamics seem to be related to the rather recent opening of the group bank accounts, of which the majority were opened from 2018 onwards. With only one or one and a half years having passed since the start of the intervention until the endline in 2019, potential effects stemming from the linkage intervention might have yet to manifest themselves as groups need time to establish bank accounts and might need time to get used to the accounts and realise their benefits. Analysis using information from the monthly phone survey suggests a larger treatment effect in the end compared to the middle of 2019. But at this point we do not know whether any effects would ever materialize, and the effects found so far might also vanish in the future. Future follow-up phone surveys will shed further light on this.

5.4.3 Outcomes

When analysing whether individuals in treatment savings groups report less need for loans greater than the savings groups can provide, we found some evidence that members in NGO 3 treatment groups report less need for loans greater than the savings group can provide than the NGO 3 non-linkage groups (see Table 24 in Online Appendix A).[15]

[14] These effects are not conditional on having ever heard about mobile money or used it before.
[15] This result stems from the savings group data. There was no significant effect in the adult data, i.e. with the sampled savings group members.

Although the linkage intervention aims to increase the efficiency of savings groups through the opening and usage of bank accounts, the exposure of savings groups to external FSPs might induce unintended effects potentially challenging group cohesion. However, we could not find evidence that savings group members in treatment groups have less trust in their respective savings group members. On the contrary, NGO 1 members in treatment groups reported having higher trust than their counterparts in non-linkage groups (see Table 25 in Online Appendix A).

Another unintended effect would be loan defaults. For NGO 2-affiliated savings groups, we find an increase in the likelihood of a member having ever defaulted on a loan (see Table 26 in Online Appendix A). In addition, we find evidence that more members default on a loan for the NGO 1 subsample. For NGO 3-affiliated savings groups, there is an opposite effect, i.e. fewer members default on a loan.

To conclude, there is no conclusive evidence that the linkage intervention led to unintended effects with regard to group cohesion while the results are mixed with regard to loan defaults.

We were also interested in whether the linkage can help group members to invest more in their income generating practices. We did not find conclusive evidence on whether individuals in treatment savings groups spend more on agricultural inputs like fertilizers and seeds, however there is a negative tendency. When analysing the purchase of livestock, we can detect a positive effect for the NGO 1 sample on livestock purchases (see Table 27 in Online Appendix A), and this finding is robust to various specifications. For households affiliated with NGOs 2 and 3, we find negative effects that are not fully robust throughout different specifications and sensitivity checks.

5.4.4 Goals

When looking at long-term outcomes such as food consumption and wealth measures, we find little evidence of any change. This might not be surprising, given the (lack of) results on savings group activities and investment behaviour.

5.5 Findings for the social fund intervention

Table 16 summarizes the findings for the hypotheses relating to the social fund intervention as specified in the PAP. For most hypothesis there are no statistically significant findings and many of them will not be discussed in this report. (The full set of results is available in Online Appendix B.) Note that “no findings” means that we do not find a statistically significant effect that is somewhat robust to different specifications and sensitivity tests, it does not, however, imply that there was no effect.

The presentation of findings will be in order of a proposed causal chain rather than split by primary and secondary outcomes as specified in the PAP.

For this subsection, “treatment group” refers to both the pure social fund treatment arm as well as the treatment arm receiving both linkage and social fund training, i.e., all CBFIs who were assigned to receive the social fund intervention. “Control group”, on the other hand, refers to those not receiving the social fund intervention, i.e., the pure control and pure linkage group.

Table 16: Overview of findings for social fund intervention

Outcome / Indicator	PAP ref.	Evidence
Attitudes		
Trust in insurance providers	H18	
Level of trust in formal insurance	*H18*	No findings.
Willingness to comply with insurance	*H18*	Negative for NGO 4b.
Insurance literacy	H22	
Knowledge about insurance	H22	No findings.
Attitude towards insurance	H22	Problems with measurement, no analyses conducted.
Activity		
Usage of the Social Fund	H15	
# of SF grants given out	*H15*	No findings full sample. Sample size too small for NGO specific analyses.
# of SF loans given out?	*H15*	No findings full sample. Sample size too small for NGO specific analyses.
Value of individual SF contributions	H16	Positive impact for NGO 1.
# of claims to the SF	H21	No findings.
Outcomes		
Coverage rate of a shock by Social Fund	H17	
Usual pay-out in case of shock	*H17*	*Some positive findings for NGO 1. Several types shocks analyzed; often sample size too small.*
Maximum pay-out in case of shock	*H17*	*Some positive findings for NGO 1 and negative findings for NGO 4. Several types shocks analyzed; often sample size too small.*
Vulnerability to shocks	H19	
Sales of assets in case of a funeral	*H19*	No findings.
Sales of crops in case of a funeral	*H19*	No findings.
Loans taken as response to a funeral	*H19*	No findings.
Other adaptive behavior in case of a funeral	*H19*	No findings.
Perceived impact of shocks	*H19*	One positive finding for NGO 3, one negative for NGO 4a. Several types of shocks analyzed.
Internal locus of control	*H19*	Slightly negative finding for NGO 3.
Coping mechanisms to shocks	H20	
Quality of treatment for health shocks	*H20*	Positive impact for NGO 3, negative for NGO 4b.
Frequency of health treatment	*H20*	Problems with measurement, no analyses conducted.
Frequency of funeral attendance	*H20*	No findings.
Social Fund depletion	H23	
# of rejected SF claims	*H23*	Sample size too small for meaningful analysis as loans are rarely

Outcome / Indicator	PAP ref.	Evidence
due to depletion		rejected.
# of incidents when SF was empty	*H23*	Positive for NGO 3.
Crowding out effect	H24	
Value of individual savings	*H24*	No findings.
# of loan refusals	*H24*	No findings.
Goals		
Consumption smoothing	H25	
# of hungry months	*H25*	No findings.
Days without eating	*H25*	Positive for NGO 1 and 3 for children. Separate for adults and children.
Days where reduction of meals necessary	*H25*	No findings.
Help needed from outsiders	*H25*	No findings.
Resilience for future shocks	H26	
HH assets	*H26*	No findings. Several types of assets considered.
Livestock	*H26*	No findings. Several ways to construct outcome.

Column 1 lists and groups the indicators and outcomes studied for the social fund intervention. Column 2 shows to which hypotheses the indicators are linked according to the PAP. Column 3 gives a brief description of the findings across the different specifications but does not include heterogeneity except with respect to NGO affiliation. For more details refer to the following sections or Online Appendix B.

As shown in Table 16 we estimated effects for many types of outcomes, some with several indicators, and separately for each NGO. We did not make multi-hypothesis-testing adjustments for any results presented. This should be kept in mind in the following subsections and is one reason why we do not report all statistically significant findings, especially when there is no pattern across similar outcomes. The heterogeneity analysis across NGOs was included due to different implementation modalities. This is justified by the fact that treatment arm randomisation was stratified by NGO.

5.5.1 Attitudes

Apart from direct outcomes, we also expected attitudinal changes within savings group members due to the social fund intervention.

There is no evidence that savings group members in treatment groups have a higher level of awareness of insurance, trust in formal insurance companies, or that they have a higher willingness to be part of insurance schemes. On the contrary, there appears to be some evidence that NGO 4b treatment groups are less willing to be part of insurance schemes (see Table 29 in Online Appendix A).

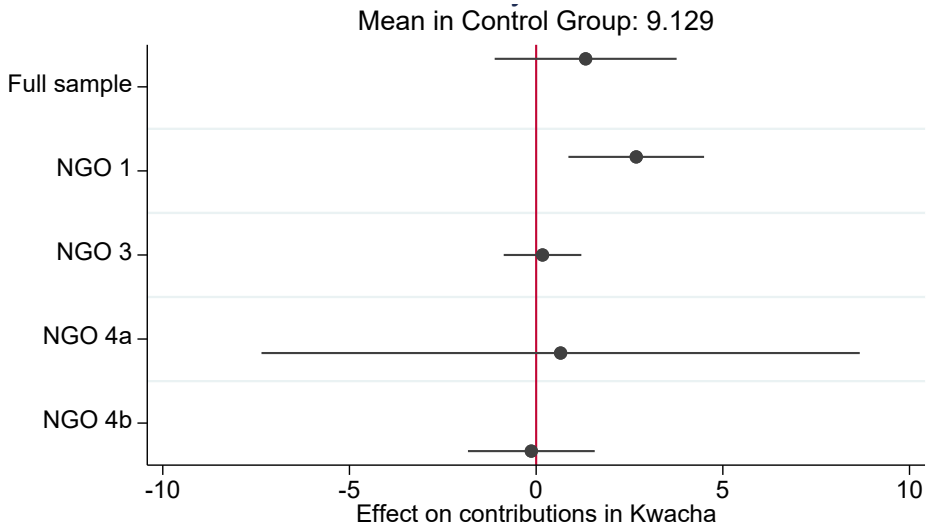
5.5.2 Activity

Regarding the direct outcomes of the social fund intervention, we are interested in whether the social fund intervention leads to increased social fund contributions, increased coverage by the social fund and increased usage of the social fund.

There are no significant findings regarding the increased use of the social fund, and we could not find evidence that members in the treatment savings groups report claiming

money more often from the social fund. However, there is evidence from the NGO 1 sample of a positive effect on social fund contributions of 2.7 Kwacha (Figure 4). Overall, the estimated effects are limited so far. In future follow-up phone surveys, we will examine if contribution rates are maintained and accumulate to social fund volumes that permit effective risk protection.[16]

Figure 4: Effect on monthly Social Fund contributions in Kwacha



Significant effect sizes: NGO 1 sample: 2.7 Kwacha.
Standard errors are clustered at the level of randomisation unit.
All models estimated with OLS with set of control variables: c0.
NGO 2 is omitted as they did not implement the SF intervention

5.5.3 Outcomes

We tested whether social fund trainings increase the amount covered by the social fund for a shock via higher pay-outs as grants and loans and in addition whether savings group members in the treatment savings group can cover a higher fraction of the total costs of a shock with the money from the social fund. We found evidence for the NGO 1 that the intervention led to higher maximums of grants for funerals written down in the group constitution (see Table 29 in Online Appendix A). In addition, there is evidence for a significant negative effect for NGO 4b on maximum grants. This negative finding may be linked to issues regarding the lack of commitment by the field officers to the implementation strategy in DIP. The field officers rather supported a social fund strategy which focuses on covering various shocks (e.g. due to education expenses or business) instead of concentrating on sickness and funerals.

The results above already show that NGO 1 treatment groups grant higher maximum grants for funerals in their group constitutions. However, there are no findings neither for the full nor the NGO 1 sample with regard to whether the social fund intervention reduces vulnerability to shocks and improves coping mechanisms in response to shocks by increasing pay-outs.

As a consequence of the fact that we do not find evidence for an increase in claims, it might not be surprising that we did not detect unintended effects regarding more frequent depletion of the social fund and the potential to crowd out savings activities.

[16] The monthly phone data do not show significant results for this outcome. The data for NGO 4b were cleaned for outliers and cross-checked with the monthly phone data.

Nevertheless, individuals in treatment groups of NGO 4a reported selling fewer assets and crops in the event of a funeral. However, they perceive unexpected livestock diseases or theft of animals as more severe than their counterparts in control groups. The reverse applies for NGO 4b treatment groups, who perceive these shocks as less disruptive (Table A. 18 and Table A. 19). In contrast, members in NGO 3 treatment groups answered that they perceive the impact of funerals as less severe than do their counterparts in control groups. However, members in savings groups affiliated with NGO 3 reported having a weaker sense of locus of control (see Table 31 in Online Appendix A). Also, a higher share of members affiliated with NGO 3 reported receiving professional medical care. However, members affiliated with NGO 4b reported a lower share (Table 31). In other words, the social fund intervention may not have led to the significant effect of increased social fund contributions or pay-outs; however, there is an individual level behaviour change and members affiliated with NGO 3 go to treat their illnesses in formal health institutions more often, whereas those affiliated with NGO 4b do it less often.

5.5.4 Goals

Overall, we do not find evidence for improvements in long-term outcomes related to food consumption or wealth. This comes as no surprise given the (lack of) results for the social fund activities and their effect on coping mechanisms.

5.4 Heterogeneity of impacts

As the direct secondary outcomes capture the take-up of the interventions and are thus, the beginning of the causal chain, we calculated heterogeneity of impacts for them with regard to the stratification in rural, semi-rural and urban. As Table 17 below shows, the linkage intervention could significantly manifest its effects in semi-rural areas driven mostly by NGO 1. This finding is not surprising as the distance to the banks are the shortest in a semi-rural context (here often towns or province capitals).

Table 17: Heterogeneity analysis of outcome variable: CBFI has bank account

	(1) **NGOs 1 to 3**	**(2)** **NGO 1**	**(3)** **NGO 2**	**(4)** **NGO 3**
Urban & Linkage	-0.43*	0.00	-0.32	
	(0.21)	(.)	(0.21)	
Semi-rural & Linkage	0.18**	0.21*	0.29	0.05
	(0.06)	(0.10)	(0.16)	(0.09)
Rural & Linkage	0.11	0.17	0.19	-0.02
	(0.09)	(0.14)	(0.27)	(0.11)
Adjusted R^2	0.091	0.108	-0.003	-0.052
Observations	333	152	74	107

Standard errors in parentheses are clustered at the level of randomisation unit.
Different columns and rows refer to different (sub)samples; columns with respect to NGO affiliation; rows with respect to rural, semi-rural and urban. All models estimated with OLS with set of control variables: c0.
NGO 4 is omitted as they did cooperate with a mobile money provider instead of a formal bank.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Regarding the SF intervention, the estimated effect is only significant for NGO 1 semi-rural and urban groups (Table 18).

Table 18: Heterogeneity analysis of outcome variable: Monthly SF contributions in Kwacha

	(1) Full sample	(2) NGO 1	(3) NGO 3	(4) NGO 4a	(5) NGO 4b
Urban & Social fund	-0.67	12.53***		0.11	
	(3.90)	(0.00)		(4.36)	
Semi-rural & Social fund	-0.14	2.39*	-0.09	-10.56***	-0.54
	(0.70)	(1.14)	(0.53)	(0.00)	(0.66)
Rural & Social fund	3.14	3.01	0.69	154.38***	-1.21
	(2.26)	(2.15)	(1.05)	(0.00)	(2.64)
Adjusted R^2	0.618	0.359	0.351	0.649	0.095
Observations	423	147	106	85	84

Standard errors in parentheses are clustered at the level of randomisation unit.
Different columns and rows refer to different (sub)samples; columns with respect to NGO affiliation; rows with respect to rural, semi-rural and urban. All models estimated with OLS with set of control variables: c0 and SF contributions at baseline.
NGO 2 is omitted as they did not implement the SF intervention
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

6. Cost analysis

The table below shows the total grant amounts which each NGO has received from RUFEP to implement their proposed activities within the RCT study. Due to the different operating structures of each implementing partner, it is difficult to conduct a straightforward cost-effectiveness analysis. Regarding the field personnel structure, NGO 1 operated via a train-the-trainers approach that made use of PSPs in villages to conduct the trainings while combining it with their usual monitoring visits to the savings groups. Although the PSPs received bicycles and a small monthly stipend, they were not permanent staff. Combined with having their headquarters in the same province, NGO 1 was able to implement the activities with a smaller budget regarding transport and personnel costs. In contrast, the remaining implementing partners had to budget and schedule regular monitoring visits from headquarters staff to the provinces which supplemented the monitoring visits by their field personnel. Regarding the NGO 2 with the highest average implementing costs, it is worth noting that they have not been in regular contact with the CBFIs since 2013 when the predecessor programme of RUFEP ended. Therefore, the higher budget was needed to set up a functioning field structure and recruit the former field officers.

Table 19: Total grant amounts per implementing partner

NGO	Total grant amount (exchange rate of 1 December 2017)	Number of savings groups	Number of districts and provinces of operation	Number of field officers or PSPs	Average costs per savings group
NGO 1	ZMW 853,320 USD 84,000	152	3 districts in 1 province	Ca. 20 PSPs	USD 552
NGO 2	USD 87,209	74	2 districts in 1 province	2 officers	USD 1178.5
NGO 3	ZMW 897,653 USD 88,364	107	1 district in 1 province	2 officers	USD 825.83
NGO 4	USD 95,843	189	3 districts in 2 provinces	2 officers per province, ca. 5 PSPs in Western Province	USD 507

7. Discussion

7.1 Introduction

7.1.1 Why the interventions could not develop its full potential

There are two main reasons to explain why the intervention could not develop its full potential. First, the timeframe between the roll-out of the interventions and the endline data collection was too close for primary outcomes and some secondary outcomes to manifest. Second, the main assumptions of the logical framework were not fulfilled. For the linkage intervention, it is critical that the banks can offer the groups a product which they can afford. Too high fees and transportation costs might cause the CBFI not to leave their money at the bank. These shortcomings are also reported by the implementing partners in the next sub-section.

Concerning the social fund intervention, it is crucial that the groups understand the concept of insurance. Some individuals might perceive the fact that they contribute and do not necessarily receive anything in return as unfair. If trainings fail to convince the groups of the benefits of such a system, they will not adopt a grant-based system for funerals and sicknesses. Consequently, the social fund will not be able to alleviate the financial disruptions of these shocks. Another factor might be that the implementation might have been affected by a lack of commitment by field officers (see 5.1 Implementation fidelity).

However, we also could not find evidence yet that unintended outcomes manifested themselves. For example, we found no evidence that the Social Fund intervention caused fraud, even though we found that the maximum grant limit increased for some groups. Given the weak monitoring systems of the CBFIs, members might have been tempted to make insincere claims. This misuse could have depleted the social fund without having a beneficial effect on the vulnerability in the event of shocks. According to the impact analysis, there is only some evidence that Social Fund trainings led to a depletion of the Social Fund in the absence of increasing the grant volumes (see Table 30 in Online Appendix A).

External validity might be limited as the study areas are not chosen at random from the universe of areas across Zambia. However, the RCT groups are situated in three

provinces: Eastern Province, the Northern Province, and Western Province. These provinces cover important dimensions of rural livelihoods such as climate, ecology, geography, ethnicity and human development. Of course, there is a variation of cultural, administrative, institutional and political factors affecting the scalability of the programme and the propensity to replicate programme effects elsewhere, which we cannot assess here. However, the RCT findings provide first evidence and indications on how to promote further financial inclusion through CBFIs.

7.2 Policy and programme relevance: evidence uptake and use

Initially, RUFEP's four implementing partners selected for the RCT were reluctant to be part of the study. Although they were aware and had signed up to participate in the study, they did not understand the implications of participating in the study. Therefore, the NGOs had not factored RCT activities in their initial proposals and budgets. The RCT as a methodology was considered a new approach for impact evaluation and has not been heard of by the partners.

Through several kick-off and design workshops offered by RUFEP and University of Mannheim Researchers on the rationale for the RCT and the need for selected implementing partners to take into account the RCT in their project designs, there was wide acceptance by the partners. As a new and scientific approach for impact evaluations, partners later appreciated and embraced the RCT as an effective approach for impact evaluation of their interventions. As a result, the NGOs that were selected for the RCT study readjusted and redesigned their proposals to factor in the RCT. In addition, IFAD granted higher funds to the implementing partners to carry out the updates in implementation strategies.

Moreover, the implementation of the linkage intervention showed the insufficient preparedness of FSPs to offer adequate financial products to savings groups. The implementing partners were confronted with lack of time to find the right FSP and right product. During the RCT Evaluation, RUFEP learnt that the engagement process of identifying and agreeing with an FSP to link with SGs is technical, long and may require the involvement of the respective head office executives of the FSPs. As a consequence, RUFEP and their implementing partners put more attention to define what is meant by linkage and it was recognized that there were different levels of linkages.

For future programming, RUFEP used the RCT findings to guide and strengthen RUFEP programming and promote appropriate linkages with new partners by refining the process of engaging implementing partners to undertake financial linkages of savings groups to FSPs. RUFEP now requires that prospective partners, under Window 1 of its Innovation and Outreach Grant Facility, approach FSPs and enter into an MOU before approaching RUFEP for funding.

Apart using the RCT experience to improve programming, RUFEP intends to use RCT findings to contribute to the national debate on savings group consumer protection currently initiated by the Central Bank of Zambia. Furthermore, RUFEP plans to utilize evidence from the social fund intervention to advocate the relevance of micro-insurance to local and government stakeholders. In addition, RUFEP the Government of Zambia is currently the National Strategy on Financial Inclusion 2017-2022.

It must be noted that the National Financial Education Strategy has been reviewed in light of some of the developments. The impact evaluation was focused only on one out of the three intervention Windows but what can be seen is that financial literacy and education is pivotal as an entry point to financial inclusion.

CBFIs in the treatment group that were linked to FSPs faced the challenge of bank charges which eroded their savings. Contrary to their expectations that their savings in the banks would grow with interest, they later found that banking charges were eroding their savings. Through engagement of stakeholders by RUFEP and with Strategic Partners such as Bank of Zambia, and Ministry of Finance, it is plausible that the complaints of bank charges by CBFIs linked to FSPs could have caught the attention of policy makers and regulators. As a result, in September 2018, the Bank of Zambia issued a directive to abolish about 26 unwarranted bank charges.

Through their engagements with CBFI, FSPs were able to increase their understanding on the dynamics of savings groups. With this elicited interest, FSPs started to identify existing financial products that could be suitable for CBFIs and later to develop new products targeting savings groups. For example, the Zambia National Commercial Bank (ZANACO) developed a village banking account as a result of this engagement. Other FSPs such as Barclays and National Savings and Credit Bank have also developed financial products tailored to the needs of CBFIs. Almost a year after the grant agreement with RUFEP had ended, ZANACO started the promotion of its village banking product through discussions with RUFEP's implementing partners.

7.3 Challenges and lessons learned

To ensure learning and evidence use among the local implementing partners, we requested them to report the challenges and lessons learned as perceived by themselves.

7.3.1 Challenges reported by NGO 1

One PSP did not fully inform his savings groups about the existence of maintenance and withdrawal fees of bank accounts, which then caused confusion and mistrust towards the bank. Yet, the PSP was able to solve the issue by immediately retraining the groups and informing them about the reasons behind the fees.

Another challenge was that some PSPs moved away from the village and their assigned savings groups. NGO 1 then arranged that another PSP took care of the groups as soon as possible. Nevertheless, some of these CBFIs could not receive the trainings in a few cases, because the new PSP in charge was unable to manage the additional workload and to arrange the trainings in time.

A more general challenge is high transportation costs for groups that live far from the next bank. Moreover, group members report that they feel uncomfortable whenever large sums of money are carried to the bank for deposit. These two aspects together with bank account fees for maintenance and withdrawal led some groups to perceive formal linkages to banks as a burden.

Another widespread problem was low attendance during financial education trainings on the individual level. This issue arose as some savings group members were occupied with agricultural activities and hence did not have the time to attend the trainings.

7.3.2 Lessons learned reported by NGO 1

Though keeping cash at the bank instead of cash boxes is generally appreciated, groups that live far away from their banks struggle to sustain their bank accounts. This main issue needs to be addressed in the future with more suitable financial services such as mobile banking, which saves the costly effort of travelling to the banks.

Regarding the behaviour of savings groups, NGO 1 staff observed that CBFIs greatly appreciate opportunities to extend their savings group activities. In particular, groups showed great appreciation for the social fund training. Especially in areas where many groups changed their constitutions following the training, the demand for savings groups and thus membership have increased.

Lastly, NGO 1 observed great initiative from a savings group that entered a formal linkage after they had become aware of the opportunity to open a community savings account with Barclay's bank and even *before* impulses from NGO 1 during the trainings. As this happened prior to linkage trainings, it shows that savings groups are motivated to take actions on their own, if they take notice of such opportunities.

7.3.3 Challenges reported by NGO 2

NGO 2 faced mainly two broad challenges during the implementation of the project. The first is related to the registration of CBFIs as legal entities with the Registrar of Societies, which is a required step before CBFIs can officially enter a linkage with financial service providers. The group registration was delayed in several instances. In some cases, groups had to officially change their names because another group had already been registered under the same name. In other cases, groups had insufficient funds to pay the registration fees. Another issue during the registration process was the requirement of a Taxpayer Identification Number (TPIN), which has become a pre-requisite for any business operation of legal entities in Zambia in 2018. This administrative hurdle not only slowed down the registration process for many groups, but even prevented some CBFIs from opening a bank account. To overcome this challenge, field facilitators of NGO 2 have informed CBFIs of the possibility to request a TPIN number online and made clear that this number merely serves as a means of identification without implying immediate taxation costs for CBFIs.

The second main challenge was a deep-rooted reluctance of some groups to engage with ZANACO due to expected charges and high book balances required for group accounts (around 500 ZMW) as well as the distance to the bank offices. While CBFIs are not charged for opening accounts, depositing or withdrawing money, ZANACO charges around 70 ZMW per month to maintain the account. These charges, paired with the low interest received from group accounts (around 3-4%), made the linkage to financial service providers unattractive for many CBFIs. This may also explain why mobile money providers, such as Airtel and MTN, have become a more attractive option for CBFIs despite the encouragement to open accounts with ZANACO. These charges might become less relevant in the upcoming months, however, as the Bank of Zambia has instructed private banks to remove such unnecessary maintenance charges effective 4th September 2018.

7.3.4 Lessons learned reported by NGO 2

NGO 2 expects to see further linkages between treatment CBFIs and financial service providers until the termination of their grant with RUFEP at the end of 2018. Yet, the

project implementation so far has also revealed the general difficulty to ensure that offers by financial service providers, such as ZANACO, are tailored towards the particular needs of rural savings groups. The bank's management is yet to fulfil its promise to evaluate and potentially adapt its existing products to better suit the circumstances and necessities of CBFIs.

7.3.5 Challenges reported by NGO 3

The main challenge faced by NGO 3 was related to the linkage products offered. Initially, NGO 3 wanted the ZANACO bank to develop a product tailored to the needs of rural savings groups. However, after around one year of negotiations, ZANACO was not able to deliver such a product, so that the local branch of ZANACO offered already existing products. These products, however, included relatively high opening and maintenance fees that were regarded by the groups as hidden charges and caused scepticism. The products of the local NATSAVE branch, being a government bank and understanding the concept of savings groups better, were better tailored to the needs of savings groups.

7.3.6 Lessons learned reported by NGO 3

Two main lessons were learned: NGO 3 became aware that the cleavage between profit-maximizing banks and the delicate needs of rural savings groups is difficult to overcome. This became especially apparent due to the reluctance of financial service providers to offer specific products for savings groups. However, it was also learned that many groups were willing and able to agree on proposed changes to their constitutions and savings behaviour, hence showing effective self-governance.

7.3.7 Challenges reported by NGO 4

During the early implementation phase, NGO 4 was mainly confronted with the challenge to bring formal financial service providers on board of the project. In the beginning of the implementation, NGO 4 entered into discussion with several financial institutions, such as ZANACO, INDO Zambia Bank as well as mobile money providers Airtel Zambia and MTN Zambia. NGO 4 eventually settled for the mobile money providers due to their wide coverage as well as their accessibility, low transactional costs and easy access and control over accounts. This introduced some considerable friction to the process as NGO 4's implementation strategy had to be adapted, leaving little time for the sensitization and introduction of the specific financial products to groups. Over the course of the project implementation, NGO 4 further noticed that the attitudes of participants towards the project deteriorated. While members of CBFIs were highly motivated in the beginning of the project, individuals showed a growing reluctance to attend meetings with field facilitators. This was mainly due to unfulfilled expectations of direct income benefits from participating in the study. Although NGO 4 clearly conveyed the message in the beginning of the project that participants cannot gain in monetary terms from taking part in the project, group members still assumed that their participation at trainings would eventually lead to cash transfers.

With regard to the intended outcomes of the project, NGO 4 faced a strong reluctance of CBFIs to enter official linkages with financial service providers. Firstly, groups had to overcome coordination issues, because especially larger groups struggled to form a majority in favour of such linkages. Also, mobile money providers require the group account to be managed through a single SIM card, which can create an additional hurdle to open a group account. More importantly, however, CBFIs were reluctant to link

themselves to Airtel or MTN because they mistrusted those institutions and did not see the benefit and need of such linkages. This challenge was especially pronounced in NGO 4a, given the special cultural and economic dynamics in this region. The province lacks larger industries and inhabitants of the region were generally reluctant to trust outside entities to handle their financial affairs, especially as representatives of financial institutions did not speak the local language Lozi. These issues were further exacerbated by growing disagreements between NGO 4a and field facilitators. Across both provinces, the charges by those providers were clearly the bottleneck of this challenge: While mobile money providers do not charge for opening and maintaining an account, they charge 5% for cash withdrawals and around 1 ZMW for transfers. Additionally, those financial institutions do not offer interest on the savings, unless the account holder becomes an agent with the company.

With respect to the social fund intervention, NGO 4 had the impression that encouragements to increase the social fund contributions were generally well accepted by groups. NGO 4 reports that many groups understand and appreciate the purpose of the social fund and had already initiated such changes themselves prior to the specific NGO 4 trainings. Yet, some CBFIs were hesitant to increase individual contributions to the insurance mechanism, either due to unwillingness or because of income constraints stemming from seasonal fluctuations in agricultural activities.

7.3.8 Lessons learned reported by NGO 4

Hence, over the course of the project, NGO 4 realized that establishing effective linkages between CBFIs and financial service providers takes more time than expected, especially because of difficulties to ensure that for-profit financial institutions offer products tailored to the needs of rural CBFIs. Moreover, it became evident that building trust among CBFIs towards financial service providers is essential before savings groups are willing to engage in formal linkages and entrust their savings to such institutions.

7.3.9 Summary across NGOs

Overall the reports from all NGOs agree that there was a lack of financial products tailored to the need of the savings groups. Even though the creation of suitable products was a part of the planned intervention, private banks proved reluctant to do this. All NGOs mention high registration and usage fees as a hurdle for the groups. Administrative hurdles and mistrust were also mentioned by some NGOs. Further, NGOs 1 and 2 mention long distance between banks and groups. Both NGOs suggest that mobile money might be a better solution for the savings groups. This however is in contrast to the experience of NGO 4 which worked with mobile money providers. They also report maintenance fees as a hurdle and in addition coordination issues due to the fact, that those accounts are linked to one specific SIM card.

With respect to the social fund intervention, NGOs tend to report that the savings groups were willing and appreciated opportunities to extend their activities.

7.3.10 Challenges UM faced

Although the UM and RUFEP provided the implementing partners with technical support in the process of reviewing and editing their implementation plans, there are no efficient enforcement mechanisms which UM could have used to ensure that all the activities and deliverables were handled exactly as written in the detailed implementation plan. For

example, one NGO did promise to collect attendance lists for all trainings, but in the end, they only could provide the lists for the general training.

The social fund intervention was not included in the initial call for proposals published by RUFEP. UM convinced all partners to include a second intervention on strengthening the internal group insurance mechanism – the social fund.

8. Conclusions and recommendations

Even though positive effects on immediate outcomes were found, these effects were not very large on average. The small size of these effects could possibly be due to a relatively short observation window and may increase further over time. For these reasons, further research and follow-up interviews will be conducted in order to examine if these instruments need more time for their effects to materialize. At the time of writing, though, no general recommendation for these instruments can be given as their cost-effectiveness is not yet proven. Thus, no general but only the following tentative recommendations can be drawn at the time of writing.

8.1 The fit of financial products and services

The overall limited findings imply that further market development investments and activities are needed to promote financial products tailored to the needs of the target population, especially the promotion of mobile banking services. Here, the offer of group accounts for CBFI, not only necessarily individual accounts, could be taken into consideration to make use of the group dynamics. For future programming, FSPs should be engaged who are willing to take the necessary steps of adjusting regular products and services accordingly to be offered to savings group during the trainings. More precisely, interested FSPs need to be willing to accept initial financial losses that such products are likely to yield. Most likely, only low-cost financial services, such as mobile money, will be able to penetrate rural Zambia.

8.2 Sustainability of formal bank account usage

Trust was identified as a key foundation for the success and the sustainability of financial inclusion. This includes trust between savings groups and FSPs, as well as trust in the security of funds and trust between group members. Sufficient levels of trust should be ensured prior to the start of activities. Complex or aggressive marketing campaigns of banks and financial service providers are not helpful for building trust.

Even if trust is established, fees for opening an account, for its maintenance or for the use of specific service pose a barrier to opening and actively using back accounts. Moreover, transportation costs and the unease of travelling with larger amount of money can further hinder individuals living in remote areas in the long term. Willingness-to-pay for financial services of rural Zambians may remain low for many years. Thus, affordable financial services e.g. through simpler mobile money services may be the more efficient way to achieve financial inclusion.

8.3 Group self-insurance cannot be established quickly

Mutual self-insurance within savings groups could be a first step towards risk mitigation. Although many savings groups established a social fund in need in case of unexpected shocks when they were formed, those social funds have often fallen short in efficiency due to the following reasons: many savings groups contribute little to their social funds; support to members in need was often given out as a loan that had to be repaid with interest instead of a grant; and, in addition, self-insurance and saving motives were often mixed, e.g. using the social fund for school fees. The fact that the savings groups in Zambia have a formal written constitution that also regulates the use of the social fund provides an anchor that could be used to develop mutual self-insurance for idiosyncratic risks such as health shocks. Savings groups were appreciative of these ideas, however, putting ideas into action requires more time. Only findings for one of the NGOs show a statistically significant increase of contributions to their savings groups' social funds. For the other three, no sizeable effect was observed. Even for the NGO that implemented the social fund training in the most efficient way, the voluntary increase in contributions will require more time until the cumulative contributions reach the level required for providing sufficient support to members in need.

This finding also indicates, that financial awareness is a necessary but not sufficient condition for the success of financial inclusion. Savings group members understand the trinity of financial services: saving, credit, insurance, but dedicate attention only to the first two, despite acknowledging the need for all three. Developing mutual self-insurance groups will require more time since groups need their time to find mutual agreement about which shocks they want to self-insure and which amounts to dedicate to it. Due to the currently low willingness-to-pay for insurance even within small self-selected groups connected to high transaction costs, self-selection and moral hazard, formal insurance products are doomed to fail unless such willingness-to-pay has been developed via trainings and awareness sessions. To reach the best outcome, those educational activities have to be tailored according to the needs of the group members.

8.4 Working with several NGOs is challenging, but also provides learning opportunities

Some challenges when working in complex evaluation environments with multiple partners and complex procurement and enforcement guidelines are noteworthy: Such projects with many stakeholders involved lead to substantial delays in project implementation, which also shorten the effective observation window between baseline and endline. Similar problems are to be expected basically in all projects where implementation will happen through non-governmental organizations that need to be selected via public procurement rules, unless the requirement to comply with rigorous impact evaluations is included in all initial contracts.

The legal requirements of Zambian public procurement rules made it necessary to work with several NGOs for the implementation of the two interventions because direct procurement of specific NGOs was not possible. This also implied uncertainty at project design stage since it was not clear which and how many NGOs would be applying and selected. In addition, it was challenging to ensure simultaneously that the total number of savings groups sufficient to attain the number required by statistical power calculations.

Working with four NGOs was effortful as each NGO had its own priorities and visions for developing financial inclusion, requiring many trust-building and project design workshops in addition to large investments into developing M&E systems. It also led to considerable heterogeneity in the implementation of the interventions. While being a curse for estimating average treatment effects, this can also be a blessing for a best-practice analysis on learning about how individual NGOs fare in supporting savings groups towards financial inclusion.

Regarding the linkage intervention, all of the implementing partners struggled to establish a successful partnership with a financial provider to provide a suitable financial product adapted to the needs of the savings groups. Some implementing partners supported the savings group in registering as formal entities as a prerequisite to opening a bank account. The fact that not all of the implementing partners identified this necessary step and included it in their implementation strategy shows that they did not fully grasp the needs of savings groups when it comes to linking them to the formal financial sector.

It appears as if the commercial banking sector has not been able or has not been interested in delivering products that are of interest to rural savings groups. A large-scale linkage of rural savings groups with financial service providers requires further market development investments and activities, which had taken place only to a rather limited extent during the study period. It is very unlikely that such linkages provide profitable opportunities in the short-run, hence FSPs need to be found which would except initial financial losses. The very recent introduction of more mobile money services may change this situation in the future, though, since very simple but low-cost services become available soon.

In sum, most of the outcomes have yet to manifest themselves as especially the linkage intervention experienced considerable delay. We have not found strong evidence for positive effects on the savings groups and individual level. However, there is also no evidence yet on whether the interventions may trigger negative or unintended effects or have established a solid basis for further linkage to the formal financial sector. Nevertheless, we believe that financial education and the dedicated facilitation to be provided by the implementing partners serve as foundation for all future interventions. Given that there is no clear evidence that the interventions went beyond raising awareness about formal finance institutions to create a better understanding on financial services, we suggest that linking to formal banks and in the mid-term future to formal insurance providers need to build upon a solid financial education and literacy. The time until adequate financial products adapted to the savings groups' needs are developed and ready to use can be used in strengthening financial education and literacy.

Even though positive effects on immediate outcomes were found, these effects were not very large on average. The small size of these effects could possibly be due to a relatively short observation window and may increase further over time. For these reasons, further research and follow-up phone interviews will be conducted to capture effects of these interventions which may need more time to materialize. At the time of writing, though, no general recommendation for these interventions can be given as their cost-effectiveness is not yet proven. Thus, it remains unclear whether savings groups are indeed the most efficient vehicle for financial inclusion.

Online appendixes

Online appendix A: Additional tables and figures

https://www.3ieimpact.org/sites/default/files/2020-07/TW4.1025-Online-appendix-A-Additional-tables-and-figures.pdf

Online appendix B: All analyses specified in pre-analysis plan

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