

# Broken Promises

## *Evaluating an Incomplete Cash Transfer Program*

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### **Abstract**

This study uses an unconditional cash grant program in South Sudan that had to be terminated due to conflict to assess the socio-economic, behavioral and psychological consequences of operational problems in development programs. We combine survey data from face-to-face interviews and data from lab experiments to study the unintended impacts of the program cancellation. Results from LATE estimations show that those participants that failed to receive the grant display a reduction in their consumption level and their trust level. Women of this subgroup also display an increase in their risk aversion. We learn about the original program design that participants that received the grants as intended increased their consumption and savings, while business skills and employment did not increase.

*Keywords:* unconditional cash transfers, trust attitudes, risk aversion, impact evaluation, violent conflict

*JEL classification:* C93, D13, D81, O2A

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# 1 Introduction

Operational problems are a common issue for policy interventions in developing countries. Weak institutional capacity, limitations in human capital and low quality of public infrastructure pose challenges to the smooth implementation of any intervention. Moreover, many developing countries suffer from political instability, which in turn raises operational risks. With an increasing share of the world's poor living in fragile states (Kim, 2019), operational problems are a major obstacle to eradicating global poverty. In extreme cases, operational problems lead to the unplanned interruption or even cancellation of an intervention. Despite the growing importance of these cases, little is known about the effect of a program cancellation on intended beneficiaries. Rather than studying operational problems directly, the economic literature typically treats them as noise in the data. In contrast, we believe that operational problems are an integral part of development policy and should be studied systematically. Understanding the consequences on intended beneficiaries can help policy-makers take informed decisions about the costs and benefits of an intervention. In addition, information on the consequences of failed implementations can help to integrate mitigating features at the design stage.

This study uses the unplanned and unanticipated cancellation of a cash grant program in South Sudan to study the effect of operational problems on intended beneficiaries. We benefit from the fact that the invention was designed as a randomized controlled trial where selection for the cash grant was randomized and data collection included a control group. We are interested in the effects on participants that were promised a cash grant, but ultimately did not receive it. Economic theory lends multiple reasons why outcomes for these participants should differ from outcomes in the absence of the program. First, the expectation of a future income increase in the form of a cash transfer might affect current consumption and investment decisions. Second, the cancellation might have unanticipated psychological and behavioral effects.

The South Sudan Youth Startup Business Grant Program consisted of an unconditional cash grant combined with a business and life skills training in the six states least affected by conflict. South Sudan has suffered from political instability and latent conflict since its inception in 2011. In this context, the youth struggled with declining livelihoods and a lack of economic opportunities. This put them at risk of participating in or becoming victims of crime and violence. In response, the program was designed by the World Bank in collaboration with the Ministry of Commerce to offer a cash grant worth US\$ 1,000. The existing literature suggests that injections of capital are the most effective means of raising income in poor and fragile states (Blattman and Ralston, 2015). Beneficiaries could access the grants denominated in local currency through a commercial bank account. Although the cash grant was aimed towards promoting (self-)employment

and business development, beneficiaries were free to decide on its use. The only condition consisted in participating in a one-week business and life-skill training.

In late 2014, the program randomly selected 1,200 beneficiaries to receive the grant, with 60 percent of the grants reserved for women. A similarly sized control group was selected to enable the assessment of the program in an impact evaluation. Baseline data from both groups were collected before grant beneficiaries received the business and life skills training. After the training, participants were asked to open a bank account with the Kenya Credit Bank (KCB) who acted as partner in this project. The grant money could only be accessed via these bank accounts.

Escalating violence at the end of 2016 forced the program to terminate the disbursement of the grants before all participants had access. This was done to prevent that participants became targets of violence. In addition, the program wanted to eliminate the risk that the grant money was used to purchase arms if it got into the wrong hands.

Our study distinguishes between two *ex post* treatments. Individuals that participated in the training and received the grant money as originally planned build the “training and grant” group. Individuals that participated in the training, but did not receive the grant as promised build the “training, no grant” group. In addition, the study uses data on participants that were selected for the control group and knew that they were not eligible to receive the grant.

The identification of these *ex post* treatment effects is not straightforward. Selection into receiving the grant was partly endogenous, since participants had to initiate the grant disbursement via a formal application at their KCB bank branch. Consequently, participants that started this process early had a higher propensity to receive the money before the program was put to a halt. To address endogenous selection into the *ex post* treatment groups, we construct an interacted instrumental variable consisting of a common shocks and a local exposure share. This type of instrument has gained popularity in panel data studies, but can also be applied to spatial frameworks.<sup>1</sup> In particular, we generate an instrumental variable by interacting the selection for the original treatment group with the distance to the closest KCB branch. Selection for the original treatment group represented an exogenous shock to participants’ access to credit. However, whether participants ultimately received the grant depended on the transaction costs of initiating the grant disbursement. These differed by the distance to the closest KCB bank branch. Our instrumental variable approach compares outcomes for individuals who lived near a KCB bank branch (low transaction costs) with those who lived far from a KCB bank branch (high transaction costs).

We argue that conditional on a set geographic controls, the interacted instrument is plausibly exogenous. As shown in the methodological discussion in [Christian and Barrett](#)

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<sup>1</sup>Notable examples include [Nunn and Qian \(2014\)](#), [Hanna and Oliva \(2015\)](#) and [Dreher et al. \(2021\)](#)

(2017), the validity of an interacted instrument requires that the exposure share variable (KCB bank distance) is uncorrelated with the error. The main endogeneity concern in our setting consists in a potential correlation of KCB bank distance with remoteness – which we can directly address by including a set of geographic controls. KCB was only one of multiple commercial banks active in South Sudan and not every major city had a branch of the KCB bank. We show that after conditioning on the geographic controls, distance to KCB is uncorrelated with distance to *any* commercial bank and therefore “as-good-as-randomly” distributed across the participants in our sample. We follow suggestions in Christian and Barrett (2017) and Goldsmith-Pinkham et al. (2020) to test the validity of our design further.

Our results show evidence of some detrimental effects. Participants that did not receive their grants display a significant reduction in their consumption level and their trust level. This suggests both resource misallocation and psychological repercussions due to the program cancellation. Moreover, women of this subgroup are more averse to risk. We also observe some positive impacts of the originally planned intervention. In particular, consumption and savings increased among the participants receiving both the training and the grant. The results are robust to re-weighting observations based on their inverse probability of being featured in the endline and the inclusion of different measures of conflict exposure.

Our study fills an important gap in the literature. Despite the political relevance, there is limited evidence on failed implementations of development programs. Ghosh and Kochar (2018) build a notable exception with their findings on an Indian maternity benefit program. In particular, the authors find that positive outcomes resulted from participants’ response to a poor implementation rather than the originally planned intervention. They conclude that researchers risk spurious correlations if they rely for identification on the policy rule rather than *ex post* implementation. Beyond that, most studies focus on the reasons for, rather than consequences of implementation problems. Most commonly these are linked to remoteness and problems in “last mile” delivery (Brinkerhoff et al., 2018, Dussault and Franceschini, 2006, Das and Gertler, 2007, Abate et al., 2020, Briggs, 2018). In addition, implementation failures are often linked to weak governance (Campos et al., 2014).

Given the results of this study, we argue that greater concern should be given when planning programs in volatile environments. Our results suggest both economical and psychological disadvantages for beneficiaries affected by operational problems.

The remainder of the paper proceeds as follows. Section 2 describes the original design of the invention and its context. Section 3 outlines our theoretical considerations and places the study in the existing literature. Section 3 discusses our study design. Section 4 describes our empirical strategy and discusses the validity of the instrumental variable approach. In Section 5, we describe the main results. Finally, Section 6 concludes.

## 2 Context

### 2.1 Conflict in South Sudan

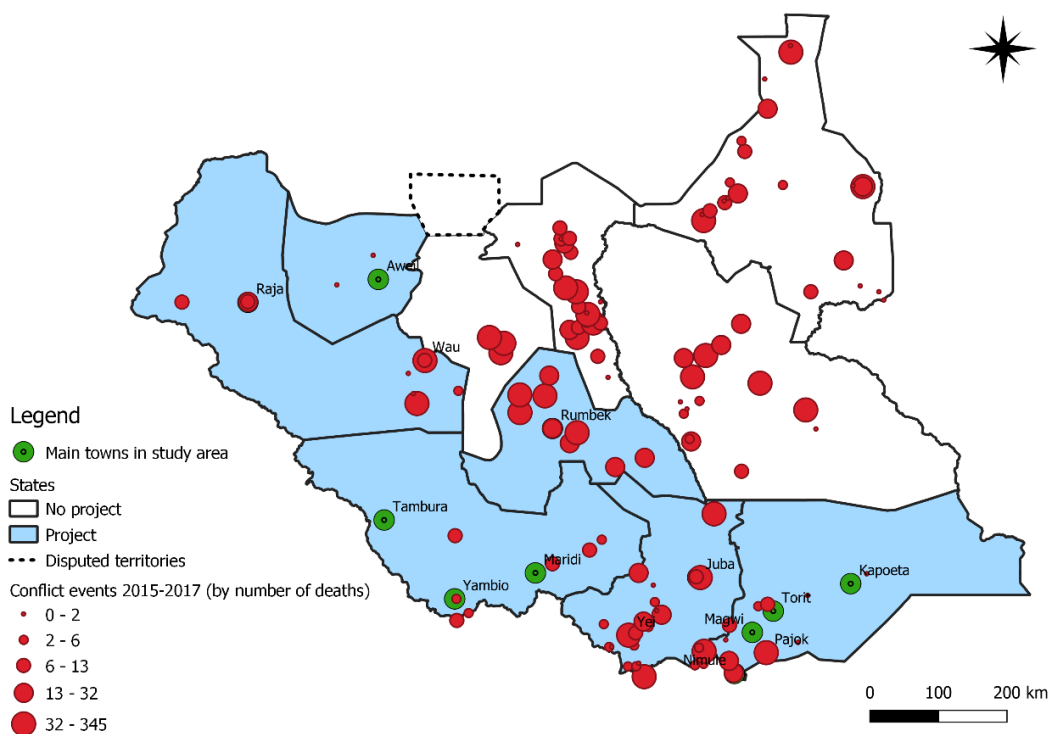
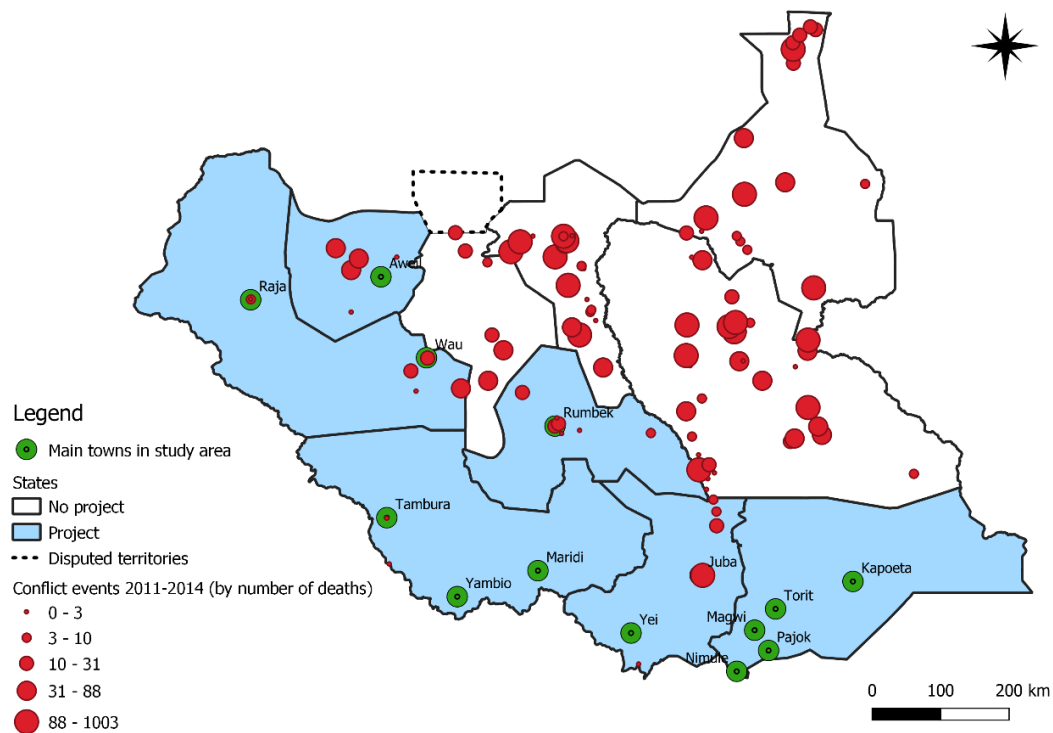
Historically, the region that is today South Sudan had been marred by Africa's longest running civil war. While most of the violence ceased with independence from the Republic of Sudan in the North in 2011, much of the fighting had consisted of clashes between the 63 distinct ethnic and language groups within the territory of South Sudan. This legacy of violence had challenged the creation of adequate democratic institutions in the years after independence. What is more, large windfall profits from oil revenue had led to the creation of a large patronage network that maintained peace through financial flows to various parties. When oil prices fell and government payments faltered, only 2 years after achieving independence, South Sudan experienced a re-eruption of violence. Civil war broke out anew in December 2013 partly due to opposition to the concentration of power under South Sudan's President Salva Kiir who had drastically reorganized the country's political and military leadership. Despite efforts of the international community to mediate a peace agreement, the conflict lasted until 2018. The country is still considered highly fragile, ranking as the fourth most fragile country in the World in 2021 according to the Fragile States Index ([Fund for Peace, 2021](#)). The deep ethnic divisions in the country and the breakdown of social cohesion are accompanied by low trust in the government. Combined with macroeconomic crises, the conflict had hampered all dimensions of development and had led to a sharp increase in the poverty rate from 51 percent in 2009 to 66 percent in 2015 ([Pape et al., 2018](#)).

Geographically, violence was first concentrated in the North of the country. Figure 1 displays conflict events before 2015 and during our study period from 2015 to 2018. The six Southern states were selected for the cash grant program due to their relatively low exposure to the conflict prior to 2015. However, after program initiation the conflict moved further South and particularly the states Lakes and Central Equatoria, as well as the urban centers in Western Bahr el Ghazal and Eastern Equatoria became major conflict sites.

### 2.2 The Youth Startup Business Grant Program

The Youth Startup Business Grant Program was designed by the World Bank in cooperation with the Government of South Sudan in response to the high level of poverty and lack of employment opportunities, particularly for the youth. Since independence, South Sudan was faced with a huge development deficit, instability and continuing violence. Under these circumstances, the government struggled to build effective institutions and provide sufficient public services. The program was intended to increase (self-)employment opportunities to the youth, while ensuring low implementation

**Figure 1** – Map of conflict events before and during project period



complexity. Beyond benefits to individual beneficiaries, it was meant to create local economic spill-over effects and contribute to the creation of a stronger private sector.

Since social security spending in South Sudan had been and still is mainly focused on emergency food aid, there was a need for interventions targeted at a longer development horizon. Pape (2015) conducted a report on the design and implementation of the program after baseline data collection and before the re-eruption of violence forced the program to a halt, which documents the original expectations from the program.

The program was implemented in the six states that were, up until then, least affected by the conflict: Eastern Equatoria, Central Equatoria, Western Equatoria, Lakes State, Northern Bahr el Ghazal, and Western Bahr el Ghazal. Figure 1 displays a map of the selected states, the location of the partnering bank branches and beneficiaries' locations of residence at baseline.

The program consisted of a one-off lump sum payment worth US\$ 1,000 combined with a one-week business skills training. Participation in the training was compulsory in order to access the grant. The amount of US\$ 1,000 meant a very large sum for the beneficiaries. For comparison, weekly food expenditure at baseline in our sample consisted of only US\$ 5.36. The financing followed an innovative mechanism designed to increase the probability that beneficiaries used money productively. This was done by allowing participants to use the grant as a loan. To do so, the cash grants were channeled through the KCB bank and treated as loans. To access the money, participants had to open a bank account at a KCB branch and initiate grant disbursement by following the application procedure typically associated with taking a loan. Successful repayment of the money resulted in the possibility of receiving a new loan of US\$ 1,000. In case of default, the loan was covered by a guarantee of the Government of South Sudan and the debt of the participants was cleared. These features meant that the financing ultimately consisted of a cash grant, while being framed in the context of a loan. Originally, it was planned to combine the cash grant with text message reminders that framed the grant either in the form of a loan or in the form of a grant. Due to the program failure, this program aspect was not implemented.

The eligible population of the program was the youth in the six program states with 60 percent of the grants reserved for young women. Eligible individuals had to be aged between 18 and 35 and possess proof of South Sudanese nationality. Eligibility was also conditional on submitting a one-page written proposal for a new small-scale business venture. Moreover, eligibility depended on the feasibility of this business idea. Despite the requirement to present a business idea in the application documents, the cash grant was not conditional on actually pursuing this plan. This was meant to allow the participants maximum flexibility in their investments. The proposal had to be written in English on a standardized form that was handed out by local authorities in each state. In addition, candidates had to promise on the application form that the financing would not be used for the purchasing of land, alcohol, weapons, or other harmful items. This application process was designed to incentivize positive self-selection into the sample.

From July to November 2014, the program was widely advertised by a comprehensive communication campaign. Communication channels included radio, television, posters, fliers, print advertisement and special events at women's and youth associations organized by local authorities. Most baseline participants reported to have heard about the program from a friend or relative (54%) and/or via the radio advertisements (48%). The program was advertised as a government program and framed as "financing" without specifying whether repayment of the fund was required. This was linked to the original plan to test different framing schemes via the text messages reminders.

Applications were collected centrally at each state and accepted from October to November 2014. Across the six states, 8,240 applications were submitted and 4,699 of these were found to be eligible. While the feasibility of the business idea had to be assessed manually, the remaining criteria were assessed automatically. The most common reason for ineligibility was the plan to use the financing for the purchase of land. Other reasons included blank or unrealistic business ideas (such as purchasing an airline), age listed outside the target range, no identification attached, or not being South Sudanese.

Selection was based on an over-subscription framework. This meant that 1,200 applicants were randomly selected for the treatment group and an equal number was randomly selected for the control group. The remaining applicants did not participate in the study. This process was communicated clearly during the application process. Applicants were informed that participation in the program would be based on a lottery. Selection was stratified by state and gender, meaning that 120 women and 80 men were selected for treatment in each program state. The selection mechanism was based on a simple and reproducible method. Within each state-gender strata, applicants were listed and ordered by phone number. A random number process then selected the first beneficiary from the list. The subsequent applicants were selected sequentially for treatment based on the list of phone numbers. After selecting sufficient applicants for the treatment group, the next applicants on the list were selected as replacements. For women, 12 applicants were picked for replacement, and for men, 8 in each state (i.e., 10% of the treatment group). After selecting the replacements, the control group was selected following the same mechanism.

Before accessing the grant, participants selected for treatment participated in a five-day business and life skills training. The training covered 7 components: (1) Entrepreneurial Motivation, (2) Business Ideation, (3) Business Communication, (4) Record Keeping, (5) Legal Aspects of Business, (6) Banking Services, and (7) Personal Management. It was delivered by individually contracted educators. These were recruited and selected by the Ministry of Trade, Industry and Investment. To prepare the educators for their task, they first had to participate in a two-week training of the trainers. During this training of the trainers, the educators learned presentation and teaching skills, but also how to conduct each individual component of the business and life skills training. The

business and life skills trainings had to follow a uniform structure and all materials were provided to the educators to ensure that training quality depended to a limited degree on the individual educator. Each program state hosted multiple separate trainings for 50 beneficiaries at a time, respectively. Educators were assigned to these trainings based on geography. In addition, educators were assigned to different modules of the training based on their own expertise. The trainings took place between March and April 2015.

After the training, participants had to open a formal bank account with the closest branch of the KCB bank. After opening the account at the respective branch, participants could access the grant in the form of a regular loan that had to be cleared by the bank first.

When the conflict re-erupted in early 2016, the grant disbursement was first frozen and ultimately cancelled. From our local partners, we learned that there was a failure of coordination between different bank branches. While some branches moved quickly with halting disbursements of grants, other branches did not. Unfortunately, when bank branches stopped the disbursement was not well documented and the information could not be obtained *ex post*.

### 3 Literature review and theoretical considerations

To understand the potential effects of a program cancellation, we first consider the intended effects of the program. [Banerjee et al. \(2017\)](#) list four theoretical explanations how cash transfers can increase employment: (1) cash transfer can enable participants to overcome the classic poverty trap by providing them with sufficient living standards to become productive workers, (2) they can reduce credit constraints that kept participants from starting an enterprise, (3) they can enable investments in profitable but risky endeavors – which applies to many business activities in conflict-affected regions – and (4) they can create local spill-over effects.

These theoretical predictions are supported by multiple studies in non-conflict affected areas (e.g. [Bianchi and Bobba, 2013](#), [Banerjee et al., 2017](#)). For conflict-affected environments, the evidence is more limited. [Blattmann et al. \(2014\)](#) find in the conflict-affected North of Uganda that a cash grant program targeted at generating self-employment among youth significantly increased their earnings after 4 years ([Blattmann et al., 2014](#)). A follow-up study found that groups converged over time in consumption, employment and earnings, but that there was a lasting effect on occupational choices ([Blattman et al., 2020](#)). These findings suggest that poverty gains are highest where occupational choices and access to credit are lowest as in the context of South Sudan.

However, cash transfers without explicit employment focus do not automatically generate employment ([Baird et al., 2018](#)). Therefore, the Youth Startup Business Grant Program in South Sudan combined the cash transfer with a business skills training.

Research on the impact of business trainings is generally mixed and there is still a lack of evidence on the type of content that shows the best results (McKenzie and Woodruff, 2014). Multiple studies found positive effects of business trainings on business knowledge (Mano et al., 2012, Bjorvatn and Tungodden, 2010, Berge et al., 2015). There is also evidence that business trainings can help to overcome gender-based norms regarding entrepreneurship (Field et al., 2010). Moreover, business training seems most effective when combined with financial support (Cho and Honorati, 2014).

In addition, the program had a gender dimension, with 60 percent of the grants reserved for women. A growing body of literature suggests that cash transfer programs can increase women's empowerment (see Peterman et al., 2020, for a systematic survey of the literature). Benefits include increased bargaining power in household decisions and increased self-esteem (Adato and Roopnaraine, 2004, Handa et al., 2009, De Brauw et al., 2014). Less is known about the effectiveness of cash transfers to increase female employment, particularly in contexts where traditional gender roles are prevalent. De Brauw et al. (2015) find some evidence that cash transfers in the context of Brazil's *Bolsa Familia* program led to a reallocation of paid working hours away from women to men. In contrast, Bosch and Schady (2019) find no negative effects of welfare payments on female employment in Ecuador.

Economic theory offers multiple predictions on how the program cancellation might affect the welfare of intended beneficiaries. First, beneficiaries might experience a welfare loss due to resource misallocation. This draws on the permanent income hypothesis according to which rational agents should smooth consumption over time. Given that many agents in a developing country context are credit constrained, the risk of misallocating income or savings might have been limited. However, as Ghosh and Kochar (2018) suggest, credit constrained households can find versatile ways to adjust resource allocation to the expectation of future income gain. For instance, beneficiaries might decline employment opportunities due to the expected income increase.

Second, intended beneficiaries might experience a welfare loss due to the negative psychological repercussions. Current research understands poverty as much as a result of psychological factors as well as economic factors (Bertrand et al., 2004, Dalton et al., 2016). For instance, Quidt and Haushofer (2016) proposes a theoretical model where exogenous negative shocks can create pessimistic beliefs about the expected returns to effort, which can in turn induce reductions in labor supply and psychological well-being. In addition, it is possible that psychological well-being depends not only on absolute economic status, but also relative economic status compared to one's peer group (Luttmer, 2005). For instance, Baird et al. (2013) find that psychological distress increased among untreated study participants in treatment areas of a cash transfer program.

Evidence from lab experiments shows that the experience of being lied to significantly reduces participants' trust level as well as their trustworthiness (Gawn and Innes, 2018).

Although the program promise to deliver a cash grant was no deliberate “lie,” it is possible that disappointed participants perceived it as such. If so, the program cancellation could have created an erosion of trust. Subsequently, other outcomes such as employment or engagement in crime and violence could have been adversely affected. This mechanism would be particularly concerning, given the evidence that international organizations such as the World Bank sometimes enjoy more trust than governments – particularly if governments are seen as corrupt (Milner et al., 2016, Findley et al., 2017).

What is more, the program cancellation could have affected risk aversion. A large body of literature analyzes the effect of adverse shocks on risk preferences (see Chuang and Schechter, 2015, for a review of the literature). An increase in risk aversion was found to be associated with shocks such as exposure to violence (Callen et al., 2014, Jakiela and Ozier, 2019, Brown et al., 2019) natural disasters (Cameron and Shah, 2015, Cassar et al., 2017) and macroeconomic shocks (Malmendier and Nagel, n.d., Guiso et al., 2018).<sup>2</sup>

## 4 Study Design

**Figure 2** – Treatment streams of original and new intervention

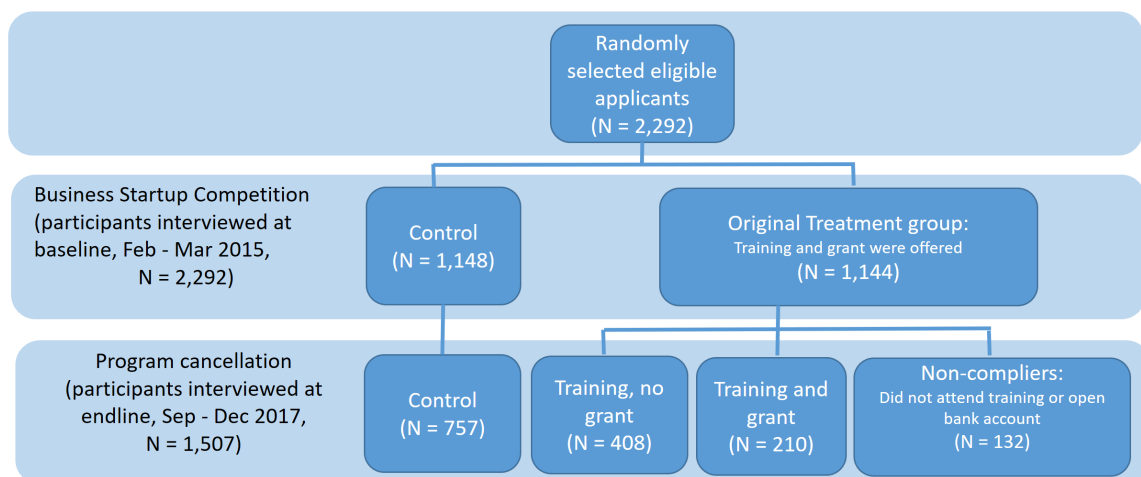


Figure 2 illustrates the treatment arms of the original invention and the program cancellation. The baseline survey was conducted between January to March 2015 and data were collected from 1,144 treatment participants and 1,148 control participants. Approximately 4.5 percent of initially identified study participants could not be tracked and did not participate in either the baseline survey or the program. The baseline survey was concluded before beneficiaries were informed whether they were selected for the grant and prior to the one-week training.

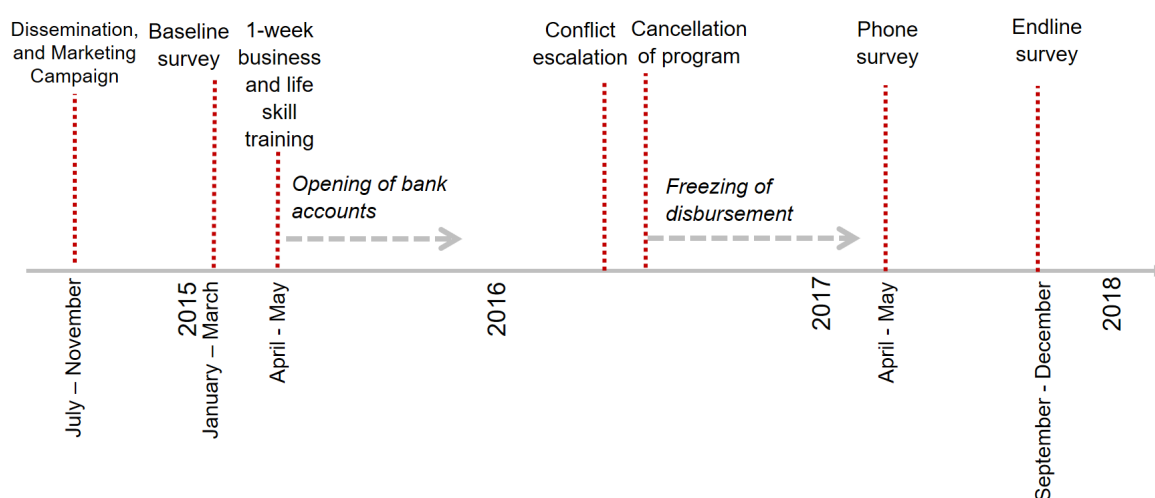
The intensification of violence between 2015 and 2017 forced about a quarter of the population of South Sudan to migrate during the study period, which made it difficult

<sup>2</sup>However, some studies find the opposite effect (e.g., Hanaoka et al., 2018).

to locate all participants of the original control and treatment group. Before the endline survey, the World Bank conducted a phone survey in May 2017 that informed the grant beneficiaries of the halt of the program and assessed the feasibility of collecting endline data. The phone survey reached around 55 percent of the study participants (642 from the control group and 622 from the original treatment group), from which 99 percent agreed to participate in the endline.

Due to budget and logistical considerations, the endline survey targeted a sample size of 1,800 individuals randomly chosen from the list of participants after prioritizing the phone survey respondents who had agreed to be interviewed again. Endline data collection activities commenced in September 2017. After intensive tracking efforts over a period extending to four months,<sup>3</sup> 1,524 participants were located, and 1,507 participants completed the interviews. The respondents interviewed in the endline survey were given the opportunity to voice their concerns and opinions about the cash grant program, through short video testimonials that are publicly available online.<sup>4</sup> Out of all endline respondents, 1,045 had already been reached in the phone survey and 462 had been located through intensive tracking efforts based on information provided in the baseline.<sup>5</sup> Figure 3 illustrates the timeline of the data collection and intervention steps.

**Figure 3** – Timeline of program implementation, cancellation and data collection



At the end of the endline survey, there was approximately equal representation between the treatment (750) and control (757) groups, with 394 and 391 fewer

<sup>3</sup>The majority of data were collected between September and November 2017, but field teams remained on the ground until the end of December 2017 trying to locate and interview participants.

<sup>4</sup>The video testimonials from this study as well as other surveys conducted in South Sudan during this period are available at: [www.thepulseofsouthsudan.com](http://www.thepulseofsouthsudan.com).

<sup>5</sup>Intensive tracking efforts included returning to the GPS coordinates for the baseline survey and looking for participants, contacting other contacts listed by the participant in their program application and through the baseline survey, asking other respondents, local officials, trade unions and the Chambers of Commerce about the location of difficult to find participants, and making at least five attempts to find persons over a period of several weeks.

observations from each group respectively. This was despite ongoing conflict keeping enumerators from going to a few counties due to insecurity.<sup>6</sup>

The main approach for measuring outcome variables was through face-to-face interviews that were conducted as part of the baseline and the endline surveys. In addition, risk preferences and trust attitudes were assessed using lab experiments collected during these face-to-face interviews from decisions reported over lotteries and trust games (see Appendix A.1 for full methodological details).

## 5 Method

### 5.1 Multiple hypothesis testing

**Table 1** – Main outcomes of interest

|                                | Outcome Name                       | Details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------------|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Socio-economic outcomes</i> |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 1                              | Employment index                   | Standardized weighted average of the number of hours spend on wage employed activities in the past 7 days, (log) cash wage received in the past 7 days, (log) outstanding wage from the past 7 days, (log) total wage in past 7 days, number of activities on wage employment in the past 7 days, number of hours spend on self-employed activities in past 7 days, (log) self-employed cash earnings in the past 7 days, (log) self-employed in-kind earnings in the past 7 days, (log) outstanding earnings from the past 7 days, (log) total self-employed earnings in the past 7 days, number of self-employed activities in the past 7 days, total number of employees, (log) business revenue during the past 4 weeks, (log) business sales yesterday, (log) aggregated business costs in the past 4 weeks |
| 2                              | Consumption index                  | Standardized weighted average of the number of different food items consumed in the past 7 days, (log) total food expenditure in the past 7 days, (log) value of self-produced food in the past 7 days, (log) expenditure on non-food items in past 1month, (log) expenditure on assets in past 1 month                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 3                              | Savings, investment and debt index | Standardized weighted average of having or sharing a formal bank account, currently saving any money, (log) amount held at bank account, (negatively coded) number of formal loans received, (negatively coded) other debt, (negatively coded) number of informal loans received in the past 1 month, (negatively coded) (log) total amount of formal loans, (negatively coded) (log) total amount of informal loans, business ownership, participation in training during the past 12 months, number of trainings done in the past 12 months                                                                                                                                                                                                                                                                    |

<sup>6</sup>In WEQ: Mvolo, Mundri East, and MundriWest; in CEQ: KajoKeji, Morobo, and Lainya; in Lakes: Rumbek North (flooding during the time of data collection).

|                                              |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------------------------------|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4                                            | Business skills index   | Standardized weighted average of frequency of visiting competitors, frequency of asking customers about other products they would like to be sold, frequency of setting sales targets, frequency of comparing targets to performance, frequency of recording purchase and sales, knowledge of the business register, knowledge of fees to register a business at cashier's office of the Business Register, knowledge of operating license from State government, knowledge of inspections from payam authorities, knowledge of taxes, knowledge of bribes (rashua), knowledge of paying an intermediate person to take care of taxes, registration of company name at business register, registration at cashier's office of the Business Register, obtainment of operation license from the State government, experienced inspection by payam authorities, payment of formal taxes, payment of bribes (rashua), payment of intermediary person to take care of taxes                                                                                                                                     |
| <i>Psychological and behavioral outcomes</i> |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 5                                            | Psychological wellbeing | Standardized weighted average of happiness with education level, with family, with job and work, with earnings or income, with house they live in, with life as a whole, with community they live in, with security and with friends, ladder of life rating self now, ladder of life rating household now, ladder of life rating self in 5 years, ladder of life rating household in 5 years, internal locus of control score on the possibility to become a leader based on ability, on general events in life, on influencing the number of friends, on control over future events, on feeling protected, on planning ahead, on pleasing people above to get ahead, on (negatively coded) dependence on luck to become a leader, on working hard to get ahead, on the belief that own actions matter most, empowered decisions on food/clothing purchases for children, on opening a business, on taking a loan, on visiting a friend, on traveling to another town, on staying overnight at another town, on getting a child vaccinated, on purchasing small items, on paying school fees for relatives |
| 6                                            | Risk index              | Standardized weighted average of (negatively coded) likelihood of sleeping under a mosquito net, likelihood to walk alone at night, (negatively coded) likelihood to spend an afternoon waiting for a medical exam, likelihood to take a boda-boda if the driver is unknown, likelihood to engage in unprotected sex, (negatively coded) likelihood to invest in a safe business accepting low profits, likelihood to invest into a business that has high profits but equal chance of failing, likelihood to take a loan if there were no restrictions, experimental data on number of times the more risky lottery was chosen                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 7                                            | Trust index             | Standardized weighted average of 13 trust items: trust to people in general, trust that people are helpful, (negatively coded) belief that people seek their own advantage, willingness to lend money, willingness to lend possessions, trust in family, trust in friends, trust in neighbors, trust in police, trust in NGO, trust in elders, trust in local government, trust in state government, experimental data on amount send to the WB in a trust game and amount send to another player in a trust game                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

|   |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8 | Crime and violence index | Standardized weighted average of participation in a security group, frequency of participation in a security group, hours participated in a security group last week, experience of own cattle been stolen, number of times own cattle had been stolen in the past 1 year, knowledge of a least 1 home/market stall robbery, number of known home/market stall robberies, experience of harassment during past 1 month, number of times been harassed during past 1 month, experience of having been physically punished or beaten, feeling concerned that receiving money might foster crime or violence |
| 9 | Migration index          | Standardized weighted average of having moved since baseline, living outside SSD in the past 1 year, living in a refugee camp in the past 1 year, living in an IDP camp in the past 1 year, having the wish to move                                                                                                                                                                                                                                                                                                                                                                                       |

Due to the exploratory nature of this study, we test a large number of outcomes. To address a potential bias from multiple hypothesis testing, we use two approaches. First, we reduce the number of tested hypotheses by summarizing outcome variables into grouped indices. (See Appendix A.2 for a detailed description of the method). It allows us to keep the number of outcome variables low with greater statistical power. The components of each index are described in Table 1. Each index is standardized based on the control group to have a mean of 0 and a standard deviation of 1. This allows for easier interpretation of the results. Table 2 reports summary statistics for all outcome indices.

Second, we add p-values adjusted by false discovery rate to all results tables. We follow the two-step procedure introduced by [Benjamini and Hochberg \(1995\)](#).<sup>7</sup> This procedure controls for the expected proportion of rejections that are type I errors within a family of outcomes. The group of socio-economic and behavioral/psychological outcomes are employed as the two main families of outcomes.

**Table 2** – Summary statistics of outcome variables for the control group

|                                    | N   | Mean | SD | Min    | Max   |
|------------------------------------|-----|------|----|--------|-------|
| <i>Main outcomes</i>               |     |      |    |        |       |
| Employment index                   | 763 | 0    | 1  | -2.314 | 6.401 |
| Consumption index                  | 763 | 0    | 1  | -1.58  | 5.037 |
| Savings, investment and debt index | 763 | 0    | 1  | -4.013 | 2.984 |
| Business skills index              | 763 | 0    | 1  | -2.971 | 2.569 |
| Psychological wellbeing index      | 763 | 0    | 1  | -2.625 | 3.606 |
| Risk index                         | 763 | 0    | 1  | -2.789 | 3.142 |
| Trust index                        | 763 | 0    | 1  | -2.982 | 3.147 |
| Crime and violence index           | 763 | 0    | 1  | -1.214 | 5.667 |
| Migration index                    | 763 | 0    | 1  | -0.838 | 3.740 |

Before aggregation, outliers and indicators with limited variation were excluded from the final sample. In order to exclude outliers, indicators were winsorized for all continuous

<sup>7</sup>See also [Anderson \(2008\)](#) for a discussion of adjusting p-values by controlling for false discovery rate versus controlling for family-wise error rate.

non-negative indicators at 99 percent. In addition, indicators were tested for limited variation, i.e., questions for which 95 percent of observations showed the same value within the relevant sample were omitted from the analysis. This resulted in the exclusion of only 6 indicators.<sup>8</sup>

## 5.2 Selection into treatment arms

Selection into the treatment arms followed a two-stage process. In the first stage, participants from the control group and the original treatment group were randomly selected according to the originally planned intervention. A balance test on baseline study participants shows no systematic differences between the original control and treatment group across most covariates (Appendix Table A3.1).

The second stage of the selection process decided which *ex post* treatment participants of the original treatment group received. Since the cancellation of the program was not planned, this process was not systematically controlled. Participants that initiated grant disbursement early had a higher chance to receive it. Among the original treatment group participants, we have three *ex post* groups. The “training, no grant” group consists of the 408 individuals that had not accessed their grants when erupting violence forced the program to terminate in late 2016, the “training and grant” group consists of the 210 individuals that successfully accessed the grant, and the “non-compliers” group consists of the 132 individuals who did not attend the training and therefore could not access the grant.<sup>9</sup>

To assess the degree of endogenous selection into the “training, no grant” and “training and grant” groups, we test the balance on covariates between these two *ex post* treatment groups (Appendix Table A3.2). We find some systematic differences. A joint test on orthogonality fails to reject the null hypothesis at the 5 percent level. The balance test shows that more educated participants with larger non-food consumption, larger amounts of informal debt that already held a formal bank account were more likely to access the grants. This suggests that those who accessed the grants were endogenously equipped via better education or prior banking experience. Importantly, we do not find any evidence that exposure to conflict determined whether participants could access the grant. A major determinant of *ex post* treatment was their distance to the closest KCB branch. Participants that received the grant were, on average, approximately 40 percent closer to any KCB branch. This suggests that transaction costs to access the grant increased in bank distance. We exploit this variation in our instrumental variable strategy. Figure 4

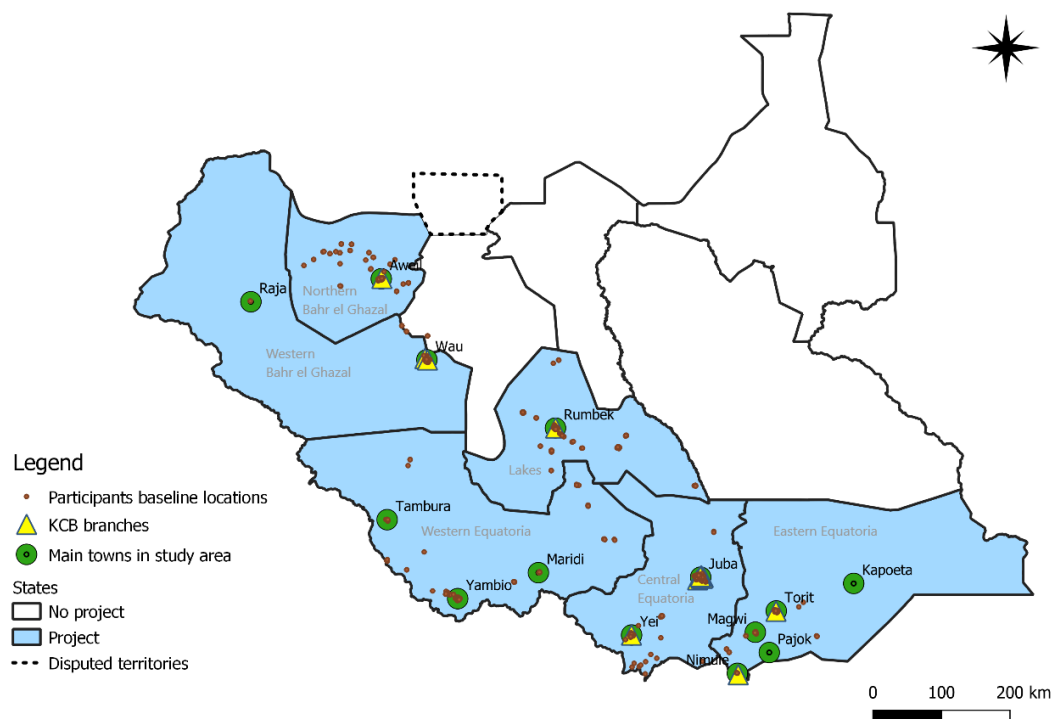
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<sup>8</sup>Indicators excluded due to limited variation are: Engagement in cattle raids and frequency of cattle raids, number of times having been beaten during the past month, in-kind payment for wage employment, remaining amount from a formal loan and remaining amount from an informal loan.

<sup>9</sup>Attending the training was a prerequisite to accessing the grant. Part of the training included financial literacy around opening and using the bank accounts, so only those participating had bank accounts opened for them.

illustrates the spatial relationship between participants' baseline location and locations of KCB bank branches

**Figure 4** – Map of selected program states, participants' baseline locations, and bank branches locations



Moreover, we find some variation across program states. In Lakes and Western Bahr El Ghazal the majority of the eligible participants received the cash grants, while in Eastern Equatoria and Western Equatoria the majority did not receive the grants. In our main regression these differences will be absorbed by fixed-effects.

### 5.3 Intent-to-treat estimation

We begin our analysis by estimating an intent-to-treat (ITT) effect, which gives the average effect of the intervention on all participants that were selected for the original treatment group. Since assignment to the original treatment group was randomized, the coefficient of the estimate has a causal interpretation. It indicates whether there was a negative net average effect of the intervention on any of the main outcomes. This gives us a first indication of whether the intervention created more “harm” than “good.” The specification for the intent-to-treat effect is as follows:

$$y_{ij} = \alpha + \beta Z_i + X_i' \gamma + s_j + \epsilon_{ij} \quad (1)$$

where  $y_{ij}$  is a vector of outcomes for individual  $i$  in strata  $j$ ,  $Z_i$  is a dummy variable that takes a value of 1 if individual  $i$  was originally selected for the cash grant program,  $s_j$  are strata fixed effect and  $\epsilon_{ij}$  is the error-term clustered at the baseline boma level.<sup>10</sup>  $X_i$  are covariates at individual- and household-level that were collected at baseline. At the individual level, these include age, marital status, employment status, business ownership, individual food consumption, individual non-food consumption, holding a formal bank account, amount of formal and informal loans, education level, literacy level, and numeracy level. At the household level, the control variables include household size, number of children, number of rooms, number of buildings at baseline, and exposure to conflict events between baseline and endline.

## 5.4 Local average treatment effect estimation

### *A. Design Specifics*

To understand the effects of “training and grant” or “training, but no grant,” we cannot rely on treatment-on-the-treated (TOT) estimations since these are likely biased due to self-selection into treatment. However, we report results on TOT estimates for comparison in Appendix A.4. Instead, we estimate local average treatment effects (LATE) by employing an interacted instrumental variable consisting of a common shock and a relative exposure variable.

In particular, we instrument the positive supply shock of the cash grant by interacting selection for the treatment group – as positive common supply shock – with distance to the closest KCB bank branch – as relative exposure to the shock. This is similar to [Hanna and Oliva \(2015\)](#) who use distance to a refinery interacted with the refinery closure as exogenous variation in exposure to air pollution. Our estimation strategy exploits the fact that receiving the grant was conditional on holding a formal bank account at the KCB bank. During the study period, KCB operated only 15 bank branches and not in every large city. However, KCB was only one of at least 8 commercial banks active in South Sudan since independence ([Bank of South Sudan, 2010](#)). This led to some variation in the transaction costs of accessing the grant. As described in the previous section, the distance to any KCB bank branch was a major determinant of the *ex post* treatment group. Importantly, the identity of the commercial bank that would partner in the program was not known to participants at the application stage. Therefore, KCB distance should not have affected self-selection into the program.

Since we have control group observations that did not experience the “treatment group” shock, we can control for level differences in outcomes along the distance dimension by including KCB bank distance directly as control variable.

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<sup>10</sup>Bomas are the lowest administrative division in South Sudan. There are 277 bomas across the 6 states in the study.

In addition, we address non-compliance with the program by using the original selection for the treatment group as an instrument for compliance with the program, i.e., that participants went to the training and opened a bank account. This leaves us with two endogenous regressors and two instruments.<sup>11</sup>

Algebraically, our estimation strategy for “training and grant” and “training, no grant” reads as:

Second stage equation:

$$y_{ij} = \alpha + \mu \widehat{Treatment1}_i + \beta \widehat{Treatment2}_i + \lambda KCBDistance_i + X_i' \gamma + s_j + \epsilon_{ij}, \quad (2)$$

First stage equations:

$$Treatment1_i = \alpha + \mu Z_i + Z_i \times KCBDistance_i' \sigma + \lambda KCBDistance_i + X_i' \gamma + s_j + \epsilon_{ij}, \quad (3)$$

$$Treatment2_i = \alpha + \mu Z_i + Z_i \times KCBDistance_i' \sigma + \lambda KCBDistance_i + X_i' \gamma + s_j + \epsilon_{ij}, \quad (4)$$

where  $y_{ij}$  is a vector of outcomes for individual  $i$  in strata  $j$ ,  $X_i$  are baseline and geographic covariates,  $s_j$  are strata fixed effects,  $\epsilon_{ij}$  is the error-term clustered at the boma level, and  $Treatment1_i$  and  $Treatment2_i$  are dummy variables indicating treatment streams as described above. Equations (4) and (5) display the first-stage equations, which instrument  $Treatment1_i$  and  $Treatment2_i$  with the original assignment to treatment  $Z_i$  as well as the interaction between  $Z_i$  and the logarithmic distance to the closest KCB branch  $KCBDistance_i$ . The LATE of  $Treatment1_i$  and  $Treatment2_i$  is estimated by parameters  $\alpha$  and  $\beta$  respectively. Our control variables include the same individual and household level covariates as equation (1) together with a number of geographic covariates. In particular, they include distance to the closest city center, distance to the closest road, average land gradient, conflict exposure before the program as well as the interactions of all geographic covariates with  $Z_i$ .

Our first stage regressions in Table 3 demonstrate that the interaction term is a strong predictor of whether participants received “training and grant” or “training, but no grant.” In contrast, the non-interacted distance to any bank branch is statistically insignificant. This is not surprising. It tells us that distance to the bank branch did not

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<sup>11</sup>Since interpreting and assessing the validity of regressions with more than one endogenous regressor can be tricky, we also tested regressions where treatment 1 was replaced by the random original selection to the treatment group and only treatment 2 (receiving training, but not the grant) was treated as endogenous regressor using the interaction between original selection to the treatment group and distance to the KCB bank branch as an instrument. In this specification, the coefficient on original treatment group selection can be interpreted as an intention-to-treat effect for treatment 1, because non-compliers are included. The results did not differ much from our preferred specification with two endogenous regressors.

determine whether participants ended up in the control group or either of the treatment groups.

**Table 3** – First stage results from LATE estimation of Table 6 and Table 7

|              |                                                | (1)<br>“Training,<br>no grant” | (2)<br>“Training<br>and grant” | (3)<br>“Training,<br>no grant” | (4)<br>“Training<br>and grant” | (5)<br>“Training,<br>no grant” | (6)<br>“Training<br>and grant” |
|--------------|------------------------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| Instrument 1 | Treatment                                      | 0.4226***<br>(0.000)           | 0.3860***<br>(0.000)           | 0.4196***<br>(0.000)           | 0.3875***<br>(0.000)           | 0.4414***<br>(0.002)           | 0.4254***<br>(0.000)           |
| Instrument 2 | Treatment x<br>(log) distance<br>to KCB branch | 0.0517***<br>(0.002)           | -0.0450***<br>(0.001)          | 0.0523***<br>(0.003)           | -0.0442***<br>(0.001)          | 0.0716***<br>(0.000)           | -0.0620***<br>(0.000)          |
|              | (log) Distance<br>to KCB branch                | -0.0032<br>(0.661)             | 0.005<br>(0.454)               | -0.005<br>(0.549)              | 0.0081<br>(0.261)              | -0.0093<br>(0.418)             | 0.0143<br>(0.107)              |
|              | Strata FE                                      | Yes                            | Yes                            | Yes                            | Yes                            | Yes                            | Yes                            |
|              | Individual<br>controls                         | No                             | No                             | Yes                            | Yes                            | Yes                            | Yes                            |
|              | Geography<br>controls                          | No                             | No                             | No                             | No                             | Yes                            | Yes                            |
|              | Observations                                   | 1,500                          | 1,500                          | 1,474                          | 1,474                          | 1,474                          | 1,474                          |

*Notes:* This table displays the first stage results for LATE estimates of Tables 8 and 9. Columns (1) and (2) correspond to LATE estimates of column (4) in Tables 8 and 9. Columns (3) and (4) correspond to LATE estimates in column (5) in Tables 8 and 9 and columns (5) and (6) to column (6) respectively. P-values are in parenthesis displayed below the estimated coefficients. \* (\*\*, \*\*\*) indicates statistical significance at the ten-percent (five-percent, one-percent) level.

### *B. Validity of the Research Design*

To derive validity of the interacted instrument, we draw on [Christian and Barrett \(2017\)](#) who note that an interacted instruments is only exogenous if “either the exposure variable is uncorrelated with the error term or the correlation is constant across time and space”. This parallels the theoretical findings in([Goldsmith-Pinkham et al., 2020](#)) who show for the validity of Bartik instruments – a more general case of interacted instruments where the instrument consists of the sum of multiple common shocks multiplied with their relative exposure variables – can be derived from the exogeneity of the exposure shares.

In our study exogeneity of the exposure variable requires that the expected outcome of receiving treatment 1 (training and grant)<sup>12</sup> is the same for all participants regardless of their distance to any KCB bank branch. the main risk of violation would be a correlation of KCB distance with various dimension of remoteness. For instance, if KCB bank distance was correlated with market access, participants with higher market access would have more possibilities to spend their newly gained income from the grant. Consequently, their consumption level might rise more strongly than for participants that lived further away from markets. Assuming that receiving treatment 2 (training, no grant) led to a consumption decrease compared to the control group, this would downward bias the estimate and lead to a larger effect size. Another violation of the identifying assumption

<sup>12</sup>or treatment 2 (training, no grant), respectively

would occur, if KCB bank distance was correlated with access to general banking services. In that case participants that lived closer to a KCB bank branch could potentially possess more financial literacy due to previous banking experience. Therefore, they might be better equipped to use the money for investments and savings rather than consumption. In that case, the bias would decrease the estimated effect size of receiving “training, no grant” on the consumption indicator.

To address this potential bias, we include a number of geographic control variables as outlined above. We assume that after controlling for these geographic characteristics the distance to the KCB bank is uncorrelated with market access, access to banking services and any other spatial characteristics that might bias the results. In the following, we present multiple tests to support this assumption.

First, we follow the suggestion in Goldsmith-Pinkham et al. (2020) to test for correlation of KCB distance with covariates. We do this in form of a balance test between “distant” and “close” participants and report results in Appendix Table A3.4. Goldsmith-Pinkham et al. (2020) note that correlation of the exposure variable with covariates is *per se* not problematic. It becomes problematic if the covariate might affect outcomes via the same channel (*ex post* treatment group) as the instrument. While we control for some potential confounders – such as distance to the closest city center – directly via the inclusion of our set of geographic controls, some risk of endogeneity remains. In particular, it would be concerning if after conditioning on controls, general access to commercial banking services differed between participants close or distant to a KCB bank branch. To run the balance test, we convert the continuous distance measure to a binary variable that takes a value of 1 for any distance larger than the 75 percentile of 59 km.<sup>13</sup> We present results in Appendix Table A3.3. Columns (1) and (2) display baseline means and standard deviations for the “close” group. Columns (3) and (4) report results on regressing baseline characteristics on the “distant” dummy conditional on state-fixed effects and columns (5) and (6) repeat this exercise while including our set of geographic control variables. The results from the first test indicate a number of statistically significant differences between “close” and “distant” endline participants. “Distant” participants are more likely to own a business, have a lower nonfood consumption and are less likely to have a university degree. Moreover, they are on average 1.9 km further away from any bank branch (not just KCB branches), 8.5 km further away from any city center,<sup>14</sup> and 3.4 km further away from any major road.<sup>15</sup> A joint test of orthogonality shows a highly significant difference between the groups. Results from columns (5) and (6) show that the inclusion of the geographic control variables removes the statistically significant differences. None of the baseline covariates shows a statistically significant coefficient and the joint test of

<sup>13</sup>The 75 % percentile was selected based on testing the percentiles 25, 50 and 75 against their predictive power for our first stage regression.

<sup>14</sup> $8.5 = (e^{2.251}) - 1$

<sup>15</sup> $3.4 = (e^{1.489}) - 1$

orthogonality does not reject the null hypothesis. Importantly, the difference in distance to any bank branch goes down to 45 m<sup>16</sup> and loses statistical significance. Thus, financial inclusion – as main channel through which the common shock affects the outcomes – appears balanced across groups. Taken together, these results suggest that conditional on geographic covariates, the instrumental is uncorrelated with the most obvious sources of endogeneity.

Second, we test whether levels of outcomes differed between “distant” and “close” participants of the control group. Christian and Barrett (2017) suggest to test for the validity of the instrument by comparing pre-trends in outcomes. Since this is not possible in our setting, we compare *levels* of outcomes instead. While balance in levels of outcomes is not necessary for the exclusion restriction Christian and Barrett (2017), Goldsmith-Pinkham et al. (2020), the absence of *level* differences provides suggestive evidence against the existence of unobserved omitted determinants of outcome *changes*. The results are reported in Appendix Table A3.4. They show no statistically significant differences in outcome indices between participants located distant or close to a KCB bank branch. All but one point estimate remain under the threshold of 0.2 standard deviations, which would indicate an economically relevant effect size. A joint test of orthogonality yields no statistically significant difference between both groups.

Third, we build on Christian and Barrett (2017) suggestions to employ placebo tests for assessing the validity of the instrument. In particular, we run a placebo test of the first-stage equations (3) and (4) by replicating Table 3 while replacing distance to the closest KCB bank branch with distance to any bank branch. If the instrument is valid, the interaction of treatment group assignment and distance to any bank branch should not predict *ex post* treatment group assignment. Being selected for the treatment group should only have differential effects on the likelihood to accessing the grant based on the transaction costs of doing so (proxied by distance to a KCB branch). The results of this test are reported in Appendix Table A3.5. The table shows results on regressions without controls (columns (1) and (2)), with baseline controls (columns (3) and (4)), and with baseline controls and geographic controls as our preferred specification (column (5) and (6)). The coefficients on the interaction between treatment group assignment and bank distance are close to zero and statistically insignificant across all specifications. The Kleibergen-Paap F-statistics are also close to zero. Thus, our instrumental variable does not simply capture the effect of access to banking services.

## 5.5 Minimum detectable effects

To assess the risk of a type II error, we computed the minimum detectable effect (MDE) size of the ITT and the LATE estimates. This approach has found wide acceptance

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<sup>16</sup>0.045 = ( $e^{0.044}$ ) – 1

in the randomized controlled trials literature to deal with null findings (Haushofer and Shapiro, 2016, Duflo et al., 2007, e.g.). For *ex post* calculations for a power of 80% and a significance level of 5%, the *MDE* is given by the simple formula (Samii, 2014):

$$MDE = 2.8 \times SE(\hat{\beta}). \quad (5)$$

We use this formula to derive MDEs for all main outcomes of the ITT and LATE estimations.

## 5.6 Attrition

Due to resource constraints, not all baseline participants were interviewed at the endline. Thus, the study suffers from a high attrition rate. While randomization was intended at this stage, participation in the endline survey might still be endogenous. We find some systematic differences between attritors and endline participants (Appendix Table A3.6). Attritors were more likely to be female, had higher food consumption, larger formal and lower informal debt, came from smaller households and were less educated. Importantly, conflict exposure does not differ significantly between attritors and non-attritors.

However, the difference in endline participants and attritors does not undermine the causal interpretation of our treatment effects. We find no evidence that attrition depended on the selection for the original treatment group (Appendix Table A3.7), nor differential attrition across covariates between these two groups (Appendix Table A3.8). There is no evidence that participants in the control group accessed either the training or the grants. The low geographic concentration of program participants makes spill-over effects unlikely. Hence, control group outcomes can plausibly be regarded as counterfactual outcomes for endline treatment group participants.

We address the high attrition rate in two ways. First, we derive Lee bounds for ITT estimates to get a better notion of the effect size for the original program target population (Lee, 2009). Second, we re-weight our main regressions based on the inverse probability to be sampled at the endline. We follow Doyle et al. (n.d.) by calculating inverse probability weights based on baseline characteristics.<sup>17</sup>

**Table 4** – Intention-to-treat effects of the original intervention on main socio-economic outcomes

|                                     | (1)<br>ITT<br>(no controls)    | (2)<br>ITT<br>(controls)       |
|-------------------------------------|--------------------------------|--------------------------------|
| <i>Main outcomes– Socioeconomic</i> |                                |                                |
| Employment index                    | 0.063<br>(0.281)<br>[0.375]    | 0.067<br>(0.242)<br>[0.323]    |
| Consumption index                   | 0.094<br>(0.12)<br>[0.240]     | 0.086<br>(0.153)<br>[0.307]    |
| Savings, investment and debt index  | 0.274***<br>(0.000)<br>[0.001] | 0.271***<br>(0.000)<br>[0.001] |
| Business skills index               | 0.016<br>(0.747)<br>[0.748]    | 0.018<br>(0.735)<br>[0.735]    |
| Observations                        | 1,523                          | 1,495                          |

*Notes:* All regression control for gender-state fixed effects. P-values are in parenthesis displayed below the estimated coefficients. \* (\*\*, \*\*\*) indicates statistical significance at the ten-percent (five-percent, one-percent) level. Adjusted Benjamini-Hochberg p-values are reported in square brackets.

## 6 Results

### 6.1 ITT estimates on average program outcomes

Table 4 reports results for average program outcomes on socio-economic indicators. We find a large and statistically significant effect of the program on the savings, debt and investment index. On average, participants that were randomly selected to the treatment group increased their savings, debt and investment index by 0.27 standard deviations. Even after p-value adjustment, the effect is significant at the 99 percent level. This finding is in line with existing evidence on the effects of cash transfers and their effect on savings (e.g. Banerjee et al., 2017). The effect is partly mechanical, since bank account ownership and bank account balance enter positively into the index, while both being directly affected by accessing the grant. Therefore, the positive effect on the savings, debt and investment index is expected. However, it shows that potential financial loss of “training, no grant” participants – which were approximately twice as many – did not outweigh the financial gains of “training and grant” participants.

For the remaining socio-economic indicators, we find no statistically significant effects. Notably, we find no improvement in business skills. This is surprising given that both *ex*

<sup>17</sup>New approaches suggest using information on tracking efforts to generate sampling weights. This approach is based on the assumption that difficult-to-track endline participants are more similar to attritors than easy-to-track participants (Molina Millán and Macours, 2017). However, in our study we do not find that difficult-to-track participants share more characteristics with attritors than the average endline participant (compare Tables A3.9 and A3.6).

*post* treatment groups received the training. The derived *MDE* of 0.139 – 0.148 for ITT estimates shows that the null result is not caused by a lack of power (Appendix Table A5.1). While business skills trainings show relatively mixed results in the literature, it is not clear what hampered the effectiveness of the training in the context of our study.

**Table 5** – Intention-to-treat effects of the original intervention on main psychological and behavioral outcomes

|                                                     | (1)<br>ITT<br>(no controls)  | (2)<br>ITT<br>(controls)       |
|-----------------------------------------------------|------------------------------|--------------------------------|
| <i>Main outcomes – Psychological and behavioral</i> |                              |                                |
| Psychological wellbeing index                       | -0.009<br>(0.845)<br>[0.845] | 0.002<br>(0.965)<br>[0.965]    |
| Risk index                                          | -0.043<br>(0.501)<br>[0.741] | -0.052<br>(0.383)<br>[0.639]   |
| Trust index                                         | -0.035<br>(0.482)<br>[0.741] | -0.055<br>(0.274)<br>[0.639]   |
| Crime and violence index                            | -0.080<br>(0.119)<br>[0.595] | -0.089*<br>(-0.090)<br>[0.450] |
| Migration index                                     | -0.026<br>(0.593)<br>[0.741] | -0.015<br>(0.767)<br>[0.960]   |
| Observations                                        | 1,523                        | 1,495                          |

*Notes:* All regression control for gender-state fixed effects. P-values are in parenthesis displayed below the estimated coefficients. \* (\*\*, \*\*\*) indicates statistical significance at the ten-percent (five-percent, one-percent) level. Adjusted Benjamini-Hochberg p-values are reported in square brackets.

ITT estimates for psychological and behavioral indicators are reported in Table 5. All point estimates are below 0.1 standard deviation. Except for the crime and violence index, all results are also statistically insignificant. In the specification with control variables, the crime and violence index shows a reduction of 0.09 standard deviations that is weakly significant at the 10 percent level.

## 6.2 LATE estimates on *ex post* treatments “training and grant” and “training, no grant”

Tables 6 and 7 report results for LATE estimations. Both tables show results from specifications without control variables, with baseline control variables and with a combination of baseline and geographic control variables, while we only assume the later to be valid as outlined above. The Kleibergen-Papp F-statistics also shows that only this specification is adequately powered. Thus, we focus mainly on a description of the last three columns of both tables.

**Table 6** – Local average treatment effects of the “training and grant” vs “training, but no grant” on main socio-economic outcomes

|                                       | (1)                            | (2)                            | (3)                            | (4)                            | (5)                                | (6)                            | (7)                             |
|---------------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|------------------------------------|--------------------------------|---------------------------------|
|                                       | (no controls)                  |                                | (controls)                     |                                | (controls +<br>geography controls) |                                |                                 |
|                                       | “Training,<br>no<br>grant”     | “Training<br>and<br>grant”     | “Training,<br>no<br>grant”     | “Training<br>and<br>grant”     | “Training,<br>no<br>grant”         | “Training<br>and<br>grant”     | (5) - (6)                       |
| <i>Main outcomes – Socio-economic</i> |                                |                                |                                |                                |                                    |                                |                                 |
| Employment index                      | -0.069<br>(0.770)<br>[0.766]   | 0.369<br>(0.399)<br>[0.590]    | -0.050<br>(0.820)<br>[0.988]   | 0.338<br>(0.397)<br>[0.626]    | 0.231<br>(0.325)<br>[0.553]        | 0.286<br>(0.351)<br>[0.553]    | -0.056<br>(0.902)<br>[0.902]    |
| Consumption index                     | -0.389**<br>(0.034)<br>[0.073] | 1.042**<br>(0.044)<br>[0.073]  | -0.350**<br>(0.036)<br>[0.077] | 0.933**<br>(0.034)<br>[0.077]  | -0.411**<br>(0.014)<br>[0.040]     | 0.708**<br>(0.036)<br>[0.081]  | -1.119***<br>(0.004)<br>[0.008] |
| Savings index                         | -0.166<br>(0.294)<br>[0.551]   | 1.282***<br>(0.004)<br>[0.005] | -0.171<br>(0.285)<br>[0.556]   | 1.270***<br>(0.002)<br>[0.005] | -0.133<br>(0.483)<br>[0.639]       | 1.094***<br>(0.001)<br>[0.005] | -1.227***<br>(0.001)<br>[0.003] |
| Business skills index                 | -0.113<br>(0.530)<br>[0.595]   | 0.267<br>(0.455)<br>[0.590]    | 0.003<br>(0.988)<br>[0.988]    | 0.046<br>(0.903)<br>[0.988]    | 0.038<br>(0.804)<br>[0.918]        | -0.029<br>(0.927)<br>[0.928]   | 0.066<br>(0.862)<br>[0.902]     |
| Observations                          | 1,500                          |                                | 1,474                          |                                | 1,474                              |                                |                                 |
| F-stat                                | 5.372                          |                                | 5.090                          |                                | 14.844                             |                                |                                 |

Notes: All regression control for gender-state fixed effects. P-values are in parenthesis displayed below the estimated coefficients. \* (\*\*, \*\*\*) indicates statistical significance at the ten-percent (five-percent, one-percent) level. Adjusted Benjamini-Hochberg p-values are reported in square brackets.

**Table 7** – Local average treatment effects of the “training and grant” vs “training, but no grant” on main psychological and behavioral outcomes

|                                                     | (1)                          | (2)                          | (3)                           | (4)                          | (5)                                | (6)                         | (7)                          |
|-----------------------------------------------------|------------------------------|------------------------------|-------------------------------|------------------------------|------------------------------------|-----------------------------|------------------------------|
|                                                     | (no controls)                |                              | (controls)                    |                              | (controls +<br>geography controls) |                             |                              |
|                                                     | “Training,<br>no<br>grant”   | “Training<br>and<br>grant”   | “Training,<br>no<br>grant”    | “Training<br>and<br>grant”   | “Training,<br>no<br>grant”         | “Training<br>and<br>grant”  | (5) - (6)                    |
| <i>Main outcomes – Psychological and behavioral</i> |                              |                              |                               |                              |                                    |                             |                              |
| Psychological wellbeing index                       | -0.238<br>(0.173)<br>[0.312] | 0.397<br>(0.249)<br>[0.312]  | -0.080<br>(0.617)<br>[0.773]  | 0.131<br>(0.674)<br>[0.773]  | -0.217*<br>(0.076)<br>[0.343]      | 0.225<br>(0.377)<br>[0.595] | -0.442<br>(0.136)<br>[0.341] |
| Risk index                                          | -0.441<br>(0.126)<br>[0.312] | 0.702<br>(0.215)<br>[0.312]  | -0.408<br>(0.113)<br>[0.351]  | 0.605<br>(0.239)<br>[0.385]  | -0.256<br>(0.426)<br>[0.595]       | 0.507<br>(0.233)<br>[0.595] | -0.764<br>(0.255)<br>[0.426] |
| Trust index                                         | -0.020<br>(0.922)<br>[0.921] | -0.098<br>(0.796)<br>[0.880] | -0.020<br>(0.924)<br>[0.924]  | -0.153<br>(0.697)<br>[0.773] | -0.412***<br>(0.006)<br>[0.040]    | 0.115<br>(0.677)<br>[0.675] | -0.527<br>(0.124)<br>[0.341] |
| Crime and violence index                            | -0.470<br>(0.122)<br>[0.312] | 0.578<br>(0.269)<br>[0.312]  | -0.554*<br>(0.071)<br>[0.351] | 0.692<br>(0.193)<br>[0.370]  | -0.167<br>(0.472)<br>[0.595]       | 0.282<br>(0.412)<br>[0.595] | -0.449<br>(0.367)<br>[0.443] |
| Migration index                                     | -0.258<br>(0.142)<br>[0.312] | 0.449<br>(0.243)<br>[0.312]  | -0.292<br>(0.114)<br>[0.351]  | 0.543<br>(0.166)<br>[0.370]  | -0.126<br>(0.518)<br>[0.595]       | 0.188<br>(0.539)<br>[0.595] | -0.314<br>(0.443)<br>[0.443] |
| Observations                                        | 1,500                        |                              | 1,474                         |                              | 1,474                              |                             |                              |
| F-stat                                              | 1.886                        |                              | 5.090                         |                              | 14.844                             |                             |                              |

Notes: All regression control for gender-state fixed effects. P-values are in parenthesis displayed below the estimated coefficients. \* (\*\*, \*\*\*) indicates statistical significance at the ten-percent (five-percent, one-percent) level. Adjusted Benjamini-Hochberg p-values are reported in square brackets.

Despite the employment focus of the intervention, we find no statistically significant effect on the employment index on either *ex post* treatment group. Both groups show a positive coefficient of similar size (0.23 standard deviations for the “training, no grant” group and 0.28 standard deviations for the “training and grant” group) which suggests a

small, but relevant effect size. These results are inconclusive since the estimation was only powered to detect large effect sizes (Appendix Table A5.2). However, it seems unlikely that the program cancellation created *negative* effects on employment, since the estimated difference between the treatments is close to zero.

Moreover, we find a heterogeneous effect on consumption. While participants that received the cash grant increased their consumption by 0.7 standard deviations, participants that failed to receive their cash grant show a reduction in consumption by 0.4 standard deviations. Both effects are statistically significant after p-value adjustment. The negative consumption effect for “training, no grant” participants is economically relevant and suggests resource misallocation due to the program failure. It provides first evidence that the program created worse outcomes for this *ex post* treatment group than in the absence of the program. The positive consumption effect of the “training and grant” group are not surprising. The existing literature on cash grants typically finds large consumption effects (Manley et al., 2013, Haushofer and Shapiro, 2016).

For savings, the LATE results show that the positive ITT effect is driven by the “training and grant” group. This is not surprising. Participants that received the grant improved their savings indicator by more than 1 standard deviation. Under p-values adjustment, the result is still highly significant at the 1 percent level. In contrast, we find a negative but statistically insignificant effect for participants that received “training, no grant.”

What is more, we find no improvement in business skills neither in the group “training and grant” nor in the group “training, no grant”. The difference between the point estimates is close to zero. This suggests that the lack of improvement in business skills had nothing to do with the cancellation of the grant disbursement.

LATE results on psychological and behavioral outcomes are reported in Table 7. For general psychological wellbeing, we find a weakly significant reduction of 0.2 standard deviations for the group that failed to receive the grant. However, the effect is only significant at the 10 percent level without p-value adjustment. For the “training and grant” group the results show a positive effect of 0.2 standard deviations that fails to reach statistical significance. The regression was powered to detect a small effect of 0.33 standard deviations for “training, no grant,” while for “training and grant” it is powered to detect only a large effect of 0.7 standard deviations (Appendix Table A5.2). Thus, the statistical power might be too low to detect positive psychological effects of the cash transfer that can typically be found in the literature (Haushofer and Shapiro, 2016, Ozer et al., 2011).

In addition, we find a 0.4 reduction in the trust index for participants that failed to receive their grant. With adjusted p-values, the results are significant at the 5 % level. The finding is in line with our expectation that the program cancellation led to negative psychological repercussions. We find no effect on trust for the “training and grant” group.

For all other psychological and behavioral outcomes, we find no statistically significant effects on either subgroup.

### 6.3 LATE estimates on *ex post* treatments “training and grant” and “training, no grant” by gender

Next, we split the sample across gender and report all estimates for both subsamples separately. We also test point estimates of female and male participants significantly different by means of a Wald-test. Our sample consists of 547 men and 948 women, out of which 85 men received “training and grant,” 133 received “training, no grant,” 199 women received “training and grant,” and 277 received “training, no grant.”

**Table 8** – Effects of the “training and grant” vs “training, but no grant” on main socio-economic outcomes by gender

|                                     |                      | (1)                 | (2)                 | (3)                       | (4)                | (5)                | (6)                       | (7)                 |
|-------------------------------------|----------------------|---------------------|---------------------|---------------------------|--------------------|--------------------|---------------------------|---------------------|
|                                     |                      | LATE for males      |                     |                           | LATE for females   |                    |                           | Coeff               |
|                                     |                      | (no controls)       | (controls)          | (controls + geo controls) | (no controls)      | (controls)         | (controls + geo controls) | equality (3) vs (6) |
| Employment index                    | ”Training, no grant” | 0.105<br>(-0.781)   | -0.001<br>(0.998)   | 0.173<br>(0.723)          | -0.131<br>(0.581)  | -0.049<br>(0.807)  | 0.488*<br>(0.081)         | 0.316<br>(0.506)    |
|                                     | ”Training and grant” | -0.040<br>(0.952)   | 0.074<br>(0.901)    | 0.221<br>(0.625)          | 0.637<br>(0.191)   | 0.456<br>(0.284)   | 0.369<br>(0.289)          | 0.148<br>(0.791)    |
| Consumption index                   | ”Training, no grant” | -0.323<br>(0.307)   | -0.319<br>(0.327)   | -0.139<br>(0.587)         | -0.374*<br>(0.067) | -0.303<br>(0.133)  | -0.899**<br>(0.025)       | -0.759<br>(0.161)   |
|                                     | ”Training and grant” | 0.616<br>(0.302)    | 0.521<br>(0.361)    | 0.337<br>(0.431)          | 1.241**<br>(0.025) | 1.073**<br>(0.036) | 0.460<br>(0.192)          | 0.123<br>(0.828)    |
| Savings, investment, and debt index | ”Training, no grant” | -0.429<br>(0.203)   | -0.450<br>(0.174)   | -0.407<br>(0.116)         | -0.049<br>(0.768)  | -0.021<br>(0.898)  | -0.228<br>(0.402)         | 0.179<br>(0.614)    |
|                                     | ”Training and grant” | 1.715***<br>(0.008) | 1.603***<br>(0.008) | 1.212***<br>(0.008)       | 0.975**<br>(0.013) | 0.903**<br>(0.019) | 0.632*<br>(0.064)         | -0.581<br>(0.306)   |
| Business skills index               | ”Training, no grant” | -0.046<br>(0.895)   | -0.035<br>(0.929)   | 0.681**<br>(0.011)        | -0.167<br>(0.406)  | -0.016<br>(0.941)  | -0.109<br>(0.780)         | -0.790<br>(0.122)   |
|                                     | ”Training and grant” | 0.340<br>(0.551)    | 0.320<br>(0.603)    | 0.427<br>(0.373)          | 0.250<br>(0.584)   | -0.090<br>(0.846)  | -0.171<br>(0.641)         | -0.598<br>(0.369)   |
| Observations                        |                      | 547                 | 541                 | 541                       | 953                | 933                | 933                       |                     |
| F-stat                              |                      | 4.510               | 4.568               | 15.53                     | 5.330              | 5.268              | 8.486                     |                     |

Notes: All regression control for state fixed effects. P-values are in parenthesis displayed below the estimated coefficients. \* (\*\*, \*\*\*) indicates statistical significance at the ten-percent (five-percent, one-percent) level.

Socio-economic outcomes of LATE estimates by gender are reported in Table 8. While we find no employment effect on either *ex post* treatment group when genders are polled, the gender split suggests a difference of the program effects between genders. Women that received “training, no grant” show a weakly significant increase of employment by 0.48 standard deviations. Women that received “training and grant” show a statistically insignificant increase of similar size. In contrast, male participants of both *ex post* treatments show smaller effect sizes. Given the statistically significant positive effect on women that did not receive the grant, a potential employment effect seems to be linked to the training not the grant. Due to low statistical power, these results are only suggestive.

For consumption, we find that the negative consumption effect of the “training, no

grant” group is larger for women than for men (0.9 standard deviations for women compared to 0.14 standard deviations for men) suggesting that the program cancellation hit women more heavily. The positive coefficients on men and women that received “training and grant” are of similar size.

The positive savings effect for participants that received the grant is larger for men than for women (1.2 standard deviations versus 0.6 standard deviations). However, the difference is not statistically significant.

For business skills, we find a statistically significant increase of 0.68 standard deviations for men that received “training and grant.” The coefficient for men of the “training and grant” group is also positive at 0.42 standard deviations, but fails to reach statistical significance. A Wald-test show no statistically significant difference between both groups. For women, coefficients for both *ex post* treatment groups are small and negative. These results suggest that the training failed to increase business skills among women, while for men the results are inconclusive.

**Table 9** – Effects of the “training and grant” vs “training, but no grant” on main psychological and behavioral outcomes by gender

|                                     |                      | (1)<br>LATE for males<br>(no controls) | (2)<br>(controls) | (3)<br>(controls<br>+ geo<br>controls) | (4)<br>LATE for females<br>(no controls) | (5)<br>(controls)   | (6)<br>(controls<br>+ geo<br>controls) | (7)<br>Coeff<br>equality<br>(3) vs<br>(6) |
|-------------------------------------|----------------------|----------------------------------------|-------------------|----------------------------------------|------------------------------------------|---------------------|----------------------------------------|-------------------------------------------|
| Psychological<br>wellbeing<br>index | ”Training, no grant” | -0.013<br>(0.969)                      | 0.089<br>(0.802)  | -0.356<br>(0.294)                      | -0.370**<br>(0.042)                      | -0.153<br>(0.342)   | -0.182<br>(0.478)                      | 0.174<br>(0.729)                          |
|                                     | ”Training and grant” | 0.257<br>(0.618)                       | 0.075<br>(0.885)  | 0.201<br>(0.620)                       | 0.527<br>(0.290)                         | 0.130<br>(0.757)    | 0.194<br>(0.560)                       | -0.007<br>(0.991)                         |
| Risk<br>index                       | ”Training, no grant” | -0.371<br>(0.306)                      | -0.438<br>(0.238) | 0.286<br>(0.401)                       | -0.47<br>(0.113)                         | -0.366<br>(0.147)   | -1.156**<br>(0.025)                    | -1.442***<br>(0.001)                      |
|                                     | ”Training and grant” | 0.577<br>(0.333)                       | 0.639<br>(0.290)  | 0.129<br>(0.755)                       | 0.792<br>(0.235)                         | 0.605<br>(0.294)    | 0.601<br>(0.154)                       | 0.472<br>(0.319)                          |
| Trust<br>index                      | ”Training, no grant” | -0.095<br>(0.792)                      | -0.133<br>(0.729) | -0.132<br>(0.747)                      | -0.012<br>(0.948)                        | -0.053<br>(0.767)   | -0.521**<br>(0.044)                    | -0.389<br>(0.486)                         |
|                                     | ”Training and grant” | 0.210<br>(0.679)                       | 0.177<br>(0.734)  | 0.424<br>(0.309)                       | -0.277<br>(0.557)                        | -0.278<br>(0.545)   | 0.028<br>(0.937)                       | -0.396<br>(0.498)                         |
| Crime and<br>violence<br>index      | ”Training, no grant” | -0.371<br>(0.332)                      | -0.434<br>(0.306) | -0.107<br>(0.763)                      | -0.543*<br>(0.092)                       | -0.642**<br>(0.044) | -0.419<br>(0.297)                      | -0.312<br>(0.508)                         |
|                                     | ”Training and grant” | 0.625<br>(0.324)                       | 0.669<br>(0.285)  | 0.247<br>(0.642)                       | 0.614<br>(0.340)                         | 0.745<br>(0.253)    | 0.200<br>(0.611)                       | -0.046<br>(0.942)                         |
| Migration<br>index                  | ”Training, no grant” | 0.048<br>(0.866)                       | 0.010<br>(0.975)  | 0.232<br>(0.571)                       | -0.376**<br>(0.040)                      | -0.403**<br>(0.026) | -0.348<br>(0.326)                      | -0.580<br>(0.342)                         |
|                                     | ”Training and grant” | -0.181<br>(0.693)                      | -0.008<br>(0.986) | -0.082<br>(0.836)                      | 0.835<br>(0.126)                         | 0.846<br>(0.106)    | 0.324<br>(0.426)                       | 0.405<br>(0.478)                          |
| Observations                        |                      | 547                                    | 541               | 541                                    | 953                                      | 933                 | 933                                    |                                           |
| F-stat                              |                      | 4.510                                  | 4.568             | 15.53                                  | 5.330                                    | 5.268               | 8.486                                  |                                           |

Notes: All regression control for state fixed effects. P-values are in parenthesis displayed below the estimated coefficients. \* (\*\*, \*\*\*) indicates statistical significance at the ten-percent (five-percent, one-percent) level.

Turning to psychological and behavioral outcomes (Table 9), we find that the reduction in trust for the “training and grant” group is larger among women. Point estimates for women show a reduction of 0.52 standard deviation reduction in the trust index significant at the 5 percent level (compared to a 0.13 reduction for men). An estimate of the difference between men and women however fails to reach statistical

significance. The coefficient for women that received the grant is close to zero. Results for men that did receive the grant are inconclusive. The coefficient suggests a medium positive effect (0.424 standard deviations), but the results are statistically insignificant due to the low size of the male sample.

Moreover, women that failed to receive the cash grant show a large and statistically significant reduction in their risk index of more than 1 standard deviation. Here, the difference between genders is large at 1.44 standard deviations and highly significant at the 1 percent level. This finding could be equally be driven by the fact that stakes were higher for female participants due to the high social costs of participating in the program.

For the other psychological and behavioral outcomes, we find no statistically significant effects across gender. The heterogenous effect on trust and risk aversion could be linked to the existing gender norms in South Sudan. Qualitative evidence from a focus group during the design stage of the program suggests negative connotations with female employment. Women that go against these norms face social costs. Consequently, the stakes of the program might have been higher for women. Failure to access the grant might not only have resulted in financial loss, but also created sunk costs related to the social costs. Therefore, the perception of being let down by the program might have been larger for women resulting in a loss of trust and higher risk aversion.

## 6.4 Robustness

Our study has to deal with a high degree of attrition (approximately 34 % of the baseline survey), due to the difficulties of tracking endline participants during the on-going conflict. Therefore, we test the robustness of our ITT estimates by calculating upper and lower bounds following [Lee \(2009\)](#). These correct for attrition by making extreme assumptions about missing information. We report the results in Appendix Tables [A6.1](#) and [A6.2](#). Even after extreme assumptions about attritors the ITT effect on the savings, investment and debt index remains statistically significant – overall, savings increased among those assigned to receive training and grants by about 0.26 – 0.27 standard deviations. The effect on the crime and violence index does not remain robust. The lee bounds derive an upper bound of -0.1 standard deviations that is statistically insignificant.

In addition, we address potential attrition bias by re-weighting observations based on their inverse probability to be in the endline survey (See Section [5.6](#) for details on the methodology). Results are reported in Appendix Tables [A6.3](#) to [A6.8](#).

For the ITT estimates, the weighted regressions confirm a positive average effect on the savings index. The weakly negative effect on the crime and violence index loses statistical significance indicating that the main estimate might be partly due to attrition bias.

Turning to results that distinguish between “training and grant” and “training,

but no grant” the re-weighting exercise confirms our previous results. The weighted regressions find a positive statistically significant effect on consumption and savings for participants that received training and grant. Moreover, the weighted regression shows a statistically significant negative impact on consumption for participants that received only the training, but not the grant. In the set of psychological and behavioral outcomes, we find a reduction in trust for participants that only received the training, but not the grant. In addition, the results confirm a weakly significant negative effect on general psychological well-being for this subgroup. The gender analysis confirms the heterogeneous effect on risk aversion. Women that failed to access the grant show a reduction of the risk index of 1.2 standard deviations (Appendix Table A6.8).

Finally, we test the robustness of our LATE estimates against alternative measures of conflict. Our primary measure of conflict exposure is based on geo-referenced data by UCDP (Sundberg and Melander, n.d.). It consists of the average number of fatalities within a 300 km radius weighted by geographic proximity to participants’ baseline location. In addition, we generate an alternative measure based on the number of conflict events. We count every incidence of violence as a conflict event if it caused 5 or more fatalities. Then, we derive the average number of conflict events within a 300 km radius weighted by geographic proximity. We generate similar measures for fatalities and conflict events using the Armed Conflict Location and Event Data (ACLED) (Raleigh and Karlsen, 2010).

The validity of the instrument requires that the difference in distance to the closest KCB bank branch is not correlated with another geographic variable that might drive the results. Controlling for conflict exposure is therefore essential for the identification of the LATE. In Tables A6.9 – A6.13 we replicate our preferred specification of Tables 6 – 9. In all tables, columns (1) and (2) are replications of columns (5) and (6) of the respective main results table using number of fatalities from UCDP conflict data as conflict measure. In columns (3) and (4), we use the same data source, but calculate the number of conflict events in a location by counting every incidence of violence as a conflict event where 5 or more fatalities occurred. In columns (5) and (6) we use the number for fatalities based on ACLED data, in columns (7) and (8) we use the number of conflict events based on ACLED data.

Results on ITT estimates largely confirm our main findings. The positive effects on consumption and savings for the “training and grant” group is robust to the different conflict measures (Appendix Table A6.9). For LATE estimates, the negative effects for “training, no grant” on consumption, psychological wellbeing and trust, as well as the positive savings effect of “training and grant” persist across specifications (Appendix Tables A6.10 and A6.11).

For LATE effects by gender, the results confirm the positive effect in the savings indicator for men that received the grant and the negative consumption effect for women

that failed to receive the grant (Table A6.12). Moreover, the positive effect on business skills for men that did not receive the grants remains robust. For psychological indicators, the negative effect on the risk index for women that failed to access their grants remains robust (Table A6.13). In contrast, the negative impact on trust for this subgroup is only robust in one of the three alternative specifications. Since the loss in trust is robust when genders are pooled, this suggests that the loss in trust was not gender specific.

## 7 Discussion and conclusion

Our study used the example of the unplanned cancellation of the South Sudan Youth Business Start-Up Grant Program to evaluate the impact of unintended operational problems on intended beneficiaries. Overall, our results suggest that the impact of a failed interventions is mixed and depends on the gender of participants and their *ex post* treatment status. In this instance, on average across all participants, the intervention was largely ineffective. Most socio-economic or psychological and behavioral indicators neither worsened nor improved.

However, when considering *ex post* treatment groups by gender, some groups were detrimentally affected by the intervention. In particular, participants who failed to access the grant showed a reduction in their consumption index and their trust level. This is a clear indication that the program cancellation made some participants both economically and psychologically worse off than in the absence of the program. The negative effect on trust is no surprise given that the perception of government performance has been found to correlate strongly with both institutional and interpersonal trust (Murtin et al., 2018). Low levels of trust have been associated with inefficiently low levels of individual trade (Binzel and Fehr, n.d., Kuran, 2018). Thus, operational problems bear to the risk to undermine development persistently by negative effects on trust. This underscores the need to build in mitigating features into development programs in risky environments.

What is more, female participants that failed to receive the grant showed a reduction in their risk tolerance. The gender-specific effect can be explained by higher social costs of participating in the program. Women's labor outside the home is still subject to negative social norms. Exposure to larger risk has been consistently associated with an increase in risk aversion (Callen et al., 2014, He and Hong, 2018, Jakiela and Ozier, 2019, Brown et al., 2019). Policy-makers must be aware that these larger social cost can manifest in higher loss of risk tolerance for women when operational problems occurs. Therefore, mitigating features must be sensitive to gender.

Nevertheless, the intervention created some positive impacts among participants that received the originally planned treatment. In particular, savings and on consumption increased for this *ex post* treatment group. Although the group that received the grant was smaller than the group that only received training, the positive impacts on the savings

indicator was large enough to lift the average effect above a statistically significant level, but not for the consumption indicator. Even for this subgroup, however, the intervention cannot be deemed fully effective, since we did not find any significant improvement in employment or business skills. When analyzing these outcomes by gender, it seems that the business skills training was more effective in men than in women. Future programs need to ensure to target training content better to female participants.

Our analysis is limited by the following factors. First, the study had to deal with a high degree of attrition due to resource constraints and the impossibility for enumerators to enter the center parts of the country. Despite our attempt to address sample selection, positive effects on the “training and grant” might not have been so large for participants residing in the most conflict afflicted territories. Second, we had to rely on an instrumental variable approach to estimate the effect of the two *ex post* treatments. While we deem our instrument valid, the effect is specific to participants that failed to access the grant due to high transaction costs (proxied by distance to the respective bank branch). This approach does not tell us the effect of the program cancellation on participants that failed to receive their grants, but lived close to a bank branch. While these might have had lower intrinsic motivation to use the grant, the estimated LATE is therefore not representative of the full sample of intended beneficiaries. More studies on implementation problems or cancellations are therefore warranted.

This paper is the first study that shows how failed intervention can have a negative impact on intended beneficiaries. Both the loss in consumption and trust as well as the increase in female risk aversion should warn policy-makers to pay more attention to unintended damage from failed interventions. Since we find suggestive evidence that negative effect differed across genders, the external validity of the result should be confirmed by further research on failed inventions and heterogeneous effects across gender. Although most indicators showed no significant net improvements, participants that did receive the treatment as intended seemed to benefit economically. While it remains to be argued whether these positive impacts outweigh the negative impacts, our study emphasizes the importance of considering consequences of potential failures in the planning stages to mitigate potential detrimental impacts in the case of program failure.

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## A Online appendix

### A.1 Methodological details on lab-in-field experiments

#### *Lotteries*

This study uses choices over lotteries that vary in expected return and variance to extract risk preferences. In the endline, data collection respondents were asked to choose between two or three alternative lotteries. The design of this experiment involved eight rounds, building on research design by (Jakiela and Ozier, 2015). After choosing one option, the chosen lottery was played as a flip of a fair coin (50 percent chance of each outcome). The game started with two practice rounds to make participants familiar with the rules. After that, the participants had to play six additional rounds. At the end of the game, one round was selected at random and the lottery chosen by the participants was played and paid out. Participants were informed about these rules at the beginning of the game. The lotteries are set up as described below in table A4.1.

The number of times respondents chose the riskiest lottery can be used as a proxy for their risk preferences. Given that respondents in these types of experiments often display choices that are inconsistent with CRRA utility, a non-parametric approach to measure risk aversion is more appropriate. Thus, following the approach put forward by Jakiela and Ozier (2015), the set of lottery choices can also be used to infer risk preferences in a less stringent and non-theoretic manner. One measure is created by counting how many times respondents choose the riskiest lotteries, i.e. lotteries with the largest spread, or the safest lotteries. In addition, the likelihood to choose the riskier lottery during each decision round was evaluated individually. The results are then compared to survey answers on risk preferences.

**Table A1.1** – Pay-outs of lotteries, expected utility

|            | Lottery A |       | Lottery B |       | Lottery C |       |
|------------|-----------|-------|-----------|-------|-----------|-------|
|            | Heads     | Tails | Heads     | Tails | Heads     | Tails |
| Practice   |           |       |           |       |           |       |
| Decision 1 | 100       | 100   | 150       | 150   |           |       |
| Decision 2 | 100       | 150   | 200       | 250   |           |       |
| Game       |           |       |           |       |           |       |
| Decision 3 | 100       | 100   | 100       | 120   |           |       |
| Decision 4 | 100       | 100   | 0         | 400   |           |       |
| Decision 5 | 30        | 340   | 100       | 100   | 0         | 400   |
| Decision 6 | 100       | 100   | 55        | 240   | 30        | 340   |
| Decision 7 | 30        | 230   | 60        | 170   | 90        | 110   |
| Decision 8 | 10        | 200   | 70        | 160   | 90        | 110   |

Test questions were included to detect biased answers that resulted from a lack of understanding. Due to the relatively low numeracy skills and the complexity of the lotteries, the study included 3 questions to test for monotonicity, i.e. if participants behaved like utility-maximizers (Andreoni and Sprenger, n.d.). If participants answered

more than 1 of these test questions in a way inconsistent with utility maximization, it is likely that they simply did not understand the nature of the decision problem.

### *Trust game*

Trust attitudes towards the World Bank were assessed using a trust game. The basic structure of a trust game developed by Berg et al. (1995) involves Player A receiving an endowment of  $X$  and choosing how much of this endowment to send to Player B,  $Y \in [0, X]$ . Player B receives  $3Y$  – i.e., three times whatever A send him – and must decide how much of this endowment to send back to A,  $Z \in [0, 3Y]$ . A receives a payout of  $X - Y + Z$  and B receives a payout of  $3Y - Z$ .  $\frac{Y}{X}$  is used as a measure of trust.  $\frac{Z}{3Y}$  is used as a measure of trustworthiness. The table below summarizes payouts for the two players:

**Table A1.2** – Trust game payouts

| Player 1  |       |             | Player 2  |       |          |
|-----------|-------|-------------|-----------|-------|----------|
| Endowment | Sends | Payout      | Endowment | Sends | Payout   |
| $X$       | $Y$   | $X - Y + Z$ | $3Y$      | $Z$   | $3Y - Z$ |

In our study, participants were asked to play several rounds of a trust game. In the first game, they Player B was framed as the World Bank to extract a measure of trust toward the World Bank or official institutions in general. Participants may hold the World Bank responsible for the (non-) payment of the business start-up grants. This framing of Player B as the World Bank allows for a direct measure of how willing participants are to partake in an interaction with the World Bank that could have financial consequences. Hence, it can act as a measure of how not receiving the promised grant had influenced their level of trust and their willingness to interact with the World Bank. The reciprocal behavior of Player B was modeled to mirror the probability of non-disbursement of the cash grant. In 34 percent of the cases documented by the phone survey, participants received the grant. This information was used to define the reciprocal behavior of Player B. Player B played fairly 34 percent of the time – that is, returns back exactly half of what they obtain from the study participant. Player B 66 percent of the time acted unfairly and kept all that is sent to them, regardless of what the respondent sent. In the end, the participant was paid out the budget of Player A.

To obtain a more general measure of the respondents' trust levels, and to accompany the first measure, a second game was played which pit the participants against each other. The survey respondents were equally and randomly selected as Players A and B, stratified by treatment groups and treatment strands. Regarding the implementation of the games and pairing of the players, a lab-in-the-field experimental setup was impossible to organize because respondents had to be interviewed individually. This was primarily due to the complicated logistical circumstances surrounding fieldwork in South Sudan, in no small part due to rapidly deteriorating security conditions, but also due to constraints

on the respondents' time. Respondents were, therefore, playing the games against a pre-loaded hypothetical distribution of responses. Enumerators explained to the respondents that the other player would be another survey respondent elsewhere in South Sudan. The set of possible responses, in terms of the fraction of the endowment sent or returned, was equally distributed between  $[0.1, 1]$  in increments of 0.1. In no cases was the fraction of endowment sent or returned equal to zero.

**Table A1.3** – Trust game payouts

**Cattle raiding:**

1. I know someone who has participated in cattle raiding, including myself.
2. I have participated in cattle raiding.

**Violent behavior:**

1. I have had a verbal disagreement in the last month where the other person threatened me with violence.
2. I have had a verbal disagreement in the last month where I threatened the other person with violence.
3. I have had a verbal disagreement with someone in the last month which ended with violence.

## A.2 Index creation

Following Anderson (2008) Indexes  $s_{ji}$  is defined as a weighted average of all standardized outcomes  $k$  within outcome group  $j$ .

$$s_{ij} = \frac{1}{W_{ij}} \sum_k w_{ijk} \frac{y_{ijk} - \bar{y}_{ijk}}{\sigma_{jk}^y}$$

Weight  $w_{jk}$  of each outcome  $k$  is derived from the inverted covariance matrix of all standardized outcomes  $k$ .

$$\sum_j^{-1} = \begin{bmatrix} c_{j11} & \dots & c_{j1K} \\ \vdots & \ddots & \vdots \\ c_{jK1} & \dots & c_{jKK} \end{bmatrix}$$

Weight  $w_{jk}$  then consists of the row sum of the inverted covariance matrix.

$$w_{jk} = \sum_{l=1}^{K_j} c_{jkl}$$

### A.3 Balancing and validity of the research design

**Table A3.1** – Balancing original control and treatment group at baseline

|                                                   | (1)                       | (2)   | (3)       | (4)      | (5)   |       |
|---------------------------------------------------|---------------------------|-------|-----------|----------|-------|-------|
|                                                   | ”Control group            |       | ITT group |          |       |       |
|                                                   | Mean                      | SD    | Coeff.    | SE       | N     |       |
| Panel A: Individual and household characteristics |                           |       |           |          |       |       |
| Age                                               | 27.417                    | 4.901 | 0.265     | 0.207    | 2,292 |       |
| Gender                                            | 0.602                     | 0.490 | 0.009     | 0.020    | 2,292 |       |
| Married                                           | 0.666                     | 0.472 | -0.016    | 0.020    | 2,291 |       |
| Employment status                                 | 0.612                     | 0.487 | 0.012     | 0.020    | 2,292 |       |
| Business ownership                                | 0.642                     | 0.480 | 0.017     | 0.020    | 2,292 |       |
| Consumption food                                  | 5.330                     | 1.212 | 0.070     | 0.051    | 2,292 |       |
| Consumption nonfood                               | 2.418                     | 1.293 | 0.010     | 0.056    | 2,292 |       |
| Formal bank account                               | 0.373                     | 0.484 | -0.004    | 0.020    | 2,292 |       |
| (Log) amount formal loans                         | -0.332                    | 1.723 | -0.036    | 0.075    | 2,280 |       |
| (Log) amount informal loans                       | -1.329                    | 3.290 | 0.104     | 0.136    | 2,258 |       |
| Education level                                   | No education              | 0.191 | 0.393     | 0.016    | 0.017 | 2,292 |
|                                                   | Some Primary              | 0.315 | 0.465     | 0.015    | 0.020 | 2,292 |
|                                                   | Some Secondary            | 0.404 | 0.491     | -0.031   | 0.020 | 2,292 |
|                                                   | Some University or Higher | 0.090 | 0.286     | 0.000    | 0.012 | 2,292 |
| Literacy                                          | No English                | 0.247 | 0.432     | 0.016    | 0.018 | 2,292 |
|                                                   | Some English              | 0.273 | 0.446     | 0.022    | 0.019 | 2,292 |
|                                                   | Good English              | 0.480 | 0.500     | -0.038*  | 0.021 | 2,292 |
| Numeracy                                          | Low                       | 0.238 | 0.426     | 0.010    | 0.018 | 2,292 |
|                                                   | Medium                    | 0.160 | 0.367     | 0.037**  | 0.016 | 2,292 |
|                                                   | High                      | 0.602 | 0.490     | -0.047** | 0.021 | 2,292 |
| Household size                                    | 7.310                     | 3.377 | -0.050    | 0.141    | 2,292 |       |
| Number of children                                | 3.107                     | 2.282 | 0.134     | 0.096    | 2,292 |       |
| Number of elderly                                 | 0.109                     | 0.344 | -0.021    | 0.014    | 2,292 |       |
| Number of rooms                                   | 3.180                     | 1.775 | -0.093    | 0.071    | 2,292 |       |
| Number of buildings                               | 3.676                     | 1.951 | -0.138*   | 0.080    | 2,292 |       |
| (Log) distance to KCB branch                      | 2.395                     | 1.938 | 0.001     | 0.082    | 2,256 |       |
| Fatalities UCDP 2011-2014                         | 0.013                     | 0.046 | 0.004     | 0.004    | 2,292 |       |
| Fatalities UCDP 2015-2017                         | -0.000                    | 1.000 | 0.128*    | 0.077    | 2,292 |       |
| Joint test of orthogonality                       | F-stat                    |       | p-value   |          |       |       |
|                                                   | 1.08                      |       | 0.362     |          |       |       |
| Panel B: State at baseline                        |                           |       |           |          |       |       |
| Central Equatoria                                 | 0.169                     | 0.375 | -0.002    | 0.016    | 2,292 |       |
| Eastern Equatoria                                 | 0.160                     | 0.367 | -0.008    | 0.015    | 2,292 |       |
| Lakes                                             | 0.158                     | 0.365 | 0.001     | 0.015    | 2,292 |       |
| Northern Bahr El Ghazal                           | 0.170                     | 0.376 | 0.006     | 0.016    | 2,292 |       |
| Western Bahr El Ghazal                            | 0.172                     | 0.377 | -0.000    | 0.016    | 2,292 |       |
| Western Equatoria                                 | 0.172                     | 0.377 | 0.003     | 0.016    | 2,292 |       |
| Joint test of orthogonality                       | F-stat                    |       | p-value   |          |       |       |
|                                                   | 0.13                      |       | 0.984     |          |       |       |

*Notes:* Column (1) and (2) reports mean and standard deviation of baseline characteristics for control group participants. Columns (3) and (4) report on a t-test comparing difference in means in the control and treatment group. \* (\*\*, \*\*\*) indicates statistical significance at the ten-percent (five-percent, one-percent) level.

**Table A3.2** – Balancing between "training, no grant" vs "training and grant"

|                                                   | (1)                       | (2)   | (3)                  | (4)       | (5)   |     |
|---------------------------------------------------|---------------------------|-------|----------------------|-----------|-------|-----|
|                                                   | "training, no grant"      |       | "training and grant" |           | N     |     |
|                                                   | Mean                      | SD    | Coeff.               | SE        |       |     |
| Panel A: Individual and household characteristics |                           |       |                      |           |       |     |
| Age                                               | 27.570                    | 4.691 | 0.399                | 0.436     | 626   |     |
| Gender                                            | 0.673                     | 0.470 | -0.086               | 0.059     | 626   |     |
| Married                                           | 0.606                     | 0.489 | 0.049                | 0.044     | 626   |     |
| Employment status                                 | 0.656                     | 0.476 | -0.015               | 0.046     | 626   |     |
| Business ownership                                | 0.642                     | 0.480 | 0.065*               | 0.039     | 626   |     |
| Consumption food                                  | 5.390                     | 1.150 | -0.009               | 0.112     | 626   |     |
| Consumption nonfood                               | 2.398                     | 1.322 | 0.283**              | 0.125     | 626   |     |
| Formal bank account                               | 0.421                     | 0.494 | 0.107**              | 0.047     | 626   |     |
| (Log) amount formal loans                         | -0.338                    | 1.756 | -0.099               | 0.161     | 625   |     |
| (Log) amount informal loans                       | -0.972                    | 2.892 | -0.518*              | 0.298     | 614   |     |
| Education level                                   | No education              | 0.173 | 0.379                | -0.099**  | 0.045 | 626 |
|                                                   | Some Primary              | 0.308 | 0.462                | -0.005    | 0.040 | 626 |
|                                                   | Some Secondary            | 0.399 | 0.490                | 0.093**   | 0.046 | 626 |
|                                                   | Some University or Higher | 0.120 | 0.326                | 0.011     | 0.030 | 626 |
| Literacy                                          | No English                | 0.233 | 0.423                | -0.124*** | 0.044 | 626 |
|                                                   | Some English              | 0.269 | 0.444                | 0.083*    | 0.043 | 626 |
|                                                   | Good English              | 0.498 | 0.501                | 0.041     | 0.051 | 626 |
| Numeracy                                          | Low                       | 0.192 | 0.395                | -0.052    | 0.039 | 626 |
|                                                   | Medium                    | 0.216 | 0.412                | -0.033    | 0.043 | 626 |
|                                                   | High                      | 0.591 | 0.492                | 0.086*    | 0.051 | 626 |
| Household size                                    | 7.058                     | 3.215 | 0.222                | 0.382     | 626   |     |
| Number of children                                | 3.171                     | 2.239 | -0.080               | 0.253     | 626   |     |
| Number of elderly                                 | 0.072                     | 0.332 | 0.001                | 0.034     | 626   |     |
| Number of rooms                                   | 3.240                     | 1.698 | 0.005                | 0.161     | 626   |     |
| Number of buildings                               | 3.639                     | 2.029 | -0.023               | 0.197     | 626   |     |
| (Log) distance to KCB branch                      | 2.749                     | 2.089 | -0.401***            | 0.137     | 617   |     |
| Fatalities UCDP 2011-2014                         | 0.023                     | 0.202 | -0.008               | 0.011     | 626   |     |
| Fatalities UCDP 2015-2017                         | 0.136                     | 3.728 | -0.184               | 0.220     | 626   |     |
| Joint test of orthogonality                       | F-stat                    |       | p-value              |           |       |     |
|                                                   | 1.65                      |       | 0.036                |           |       |     |
| Panel B: State at baseline                        |                           |       |                      |           |       |     |
| Central Equatoria                                 | 0.188                     | 0.391 | -0.030               | 0.032     | 626   |     |
| Eastern Equatoria                                 | 0.240                     | 0.428 | -0.202***            | 0.031     | 626   |     |
| Lakes                                             | 0.063                     | 0.242 | 0.218***             | 0.028     | 626   |     |
| Northern Bahr El Ghazal                           | 0.125                     | 0.331 | 0.132***             | 0.031     | 626   |     |
| Western Bahr El Ghazal                            | 0.091                     | 0.288 | 0.161***             | 0.029     | 626   |     |
| Western Equatoria                                 | 0.293                     | 0.456 | -0.279***            | 0.032     | 626   |     |
| Joint test of orthogonality                       | F-stat                    |       | p-value              |           |       |     |
|                                                   | 48.71                     |       | 0.000                |           |       |     |

*Notes:* Columns (1) and (2) reports mean values and standard deviation of baseline characteristics for participants that received "training but no grant". In Panel A column (2) reports OLS estimates on receiving "training and grant" and state fixed effect, in Panel B column (2) reports simple OLS estimates on receiving "training and grant". Standard errors are clustered at boma level and reported below coefficients in parenthesis. \* (\*\*, \*\*\*) indicates statistical significance at the ten-percent (five-percent, one-percent) level.

**Table A3.3** – Balancing between "Distant" vs "Close" to a KCB bank branch on main outcomes

|                                      | (1)                | (2)   | (3)                | (4)   | (5) |
|--------------------------------------|--------------------|-------|--------------------|-------|-----|
|                                      | Distance dummy = 0 |       | Distance dummy = 1 |       |     |
|                                      | Mean               | SE    | Coeff.             | SD    | N   |
| <i>Panel A: Main outcome indices</i> |                    |       |                    |       |     |
| Employment index                     | -0.006             | 1.012 | -0.124             | 0.139 | 764 |
| Consumption index                    | -0.009             | 1.055 | -0.151             | 0.135 | 764 |
| Savings index                        | -0.027             | 0.993 | -0.018             | 0.143 | 764 |
| Business skills index                | -0.024             | 1.007 | 0.090              | 0.139 | 764 |
| Psychological index                  | -0.088             | 0.944 | 0.166              | 0.147 | 764 |
| Risk index                           | -0.018             | 0.999 | -0.036             | 0.134 | 764 |
| Trust index                          | -0.018             | 0.999 | 0.157              | 0.147 | 764 |
| Crime and violence index             | 0.039              | 0.985 | 0.272              | 0.210 | 764 |
| Migration index                      | 0.059              | 1.003 | 0.071              | 0.170 | 764 |
| Joint test of orthogonality          | F-stat             |       | p-value            |       |     |
|                                      | 1.05               |       | 0.3986             |       |     |

*Notes:* Columns (1) and (2) reports mean values and standard deviation of baseline covariates for participants that lived close to a KCB bank branch. Columns (3) and (4) reports OLS estimates on the "distant" dummy and strata fixed effect. Standard errors are clustered at boma level and reported below coefficients in parenthesis.\* (\*\*, \*\*\*) indicates statistical significance at the ten-percent (five-percent, one-percent) level.

**Table A3.4** – Balancing between ”Distant” vs ”Close” to a KCB bank branch on baseline covariates

|                             | (1)                | (2)   | (3)                | (4)     | (5)    | (6)     | (7)   |
|-----------------------------|--------------------|-------|--------------------|---------|--------|---------|-------|
|                             | Distance dummy = 0 |       | Distance dummy = 1 |         |        |         |       |
|                             | Mean               | SE    | Coeff.             | SD      | Coeff. | SD      | N     |
| Age                         | 27.505             | 4.735 | 0.738              | 0.526   | -0.658 | 0.824   | 1,523 |
| Gender                      | 0.635              | 0.482 | -0.025             | 0.056   | 0.088  | 0.080   | 1,523 |
| Married                     | 0.674              | 0.469 | 0.041              | 0.035   | -0.086 | 0.049   | 1,523 |
| Employment status           | 0.586              | 0.493 | 0.055              | 0.049   | -0.021 | 0.084   | 1,523 |
| Business ownership          | 0.622              | 0.485 | 0.124***           | 0.040   | 0.086  | 0.063   | 1,523 |
| Consumption food            | 5.512              | 1.087 | -0.077             | 0.098   | 0.119  | 0.128   | 1,523 |
| Consumption nonfood         | 2.504              | 1.368 | -0.253*            | 0.136   | 0.087  | 0.151   | 1,523 |
| Formal bank account         | 0.383              | 0.486 | -0.021             | 0.043   | -0.002 | 0.061   | 1,523 |
| (Log) amount formal loans   | -0.300             | 1.648 | 0.171              | 0.107   | -0.030 | 0.102   | 1,515 |
| (Log) amount informal loans | -1.554             | 3.516 | -0.234             | 0.384   | 0.046  | 0.449   | 1,500 |
| No education                | 0.228              | 0.420 | -0.006             | 0.043   | -0.134 | 0.054   | 1,523 |
| Primary education           | 0.279              | 0.449 | 0.102*             | 0.061   | 0.136  | 0.075   | 1,523 |
| Secondary education         | 0.372              | 0.483 | -0.060             | 0.052   | -0.018 | 0.060   | 1,523 |
| University education        | 0.121              | 0.326 | -0.036**           | 0.018   | 0.015  | 0.023   | 1,523 |
| No English                  | 0.270              | 0.444 | 0.071              | 0.045   | 0.015  | 0.049   | 1,523 |
| Some English                | 0.283              | 0.450 | -0.009             | 0.053   | 0.048  | 0.061   | 1,523 |
| Good English                | 0.447              | 0.497 | -0.062             | 0.049   | -0.063 | 0.059   | 1,523 |
| Low numeracy                | 0.270              | 0.444 | 0.039              | 0.045   | -0.058 | 0.051   | 1,523 |
| Medium numeracy             | 0.153              | 0.360 | 0.027              | 0.041   | 0.084  | 0.057   | 1,523 |
| High numeracy               | 0.577              | 0.494 | -0.065             | 0.049   | -0.026 | 0.062   | 1,523 |
| Household size              | 7.540              | 3.334 | 0.147              | 0.441   | 0.280  | 0.595   | 1,523 |
| Number of children          | 3.260              | 2.262 | 0.286              | 0.256   | 0.038  | 0.350   | 1,523 |
| Number of elderly           | 0.108              | 0.360 | -0.046             | 0.031   | -0.073 | 0.039   | 1,523 |
| Number of rooms             | 3.044              | 1.618 | 0.113              | 0.184   | 0.321  | 0.258   | 1,523 |
| Number of buildings         | 3.348              | 1.871 | 0.357              | 0.231   | 0.163  | 0.317   | 1,523 |
| (Log) distance to any bank  | 1.436              | 1.103 | 1.073***           | 0.232   | 0.044  | 0.254   | 1,190 |
| (Log) distance to city      | 1.434              | 1.047 | 2.251***           | 0.348   |        |         | 1,500 |
| (Log) distance to road      | 0.513              | 0.559 | 1.489***           | 0.189   |        |         | 1,500 |
| Land gradient               | 0.724              | 0.506 | 0.492*             | 0.278   |        |         | 1,500 |
| Fatalities UCDP 2011-2014   | 0.022              | 0.130 | -0.008***          | 0.002   |        |         | 1,523 |
| Fatalities UCDP 2015-2017   | 0.253              | 2.466 | -0.384***          | 0.075   |        |         | 1,523 |
| Joint test of orthogonality |                    |       | F-stat             | p-value | F-stat | p-value |       |
|                             |                    |       | 22.53              | 0.0000  | 1.09   | 0.3492  |       |

*Notes:* Columns (1) and (2) reports mean values and standard deviation of baseline covariates for participants that lived close to a KCB bank branch. Columns (3) and (4) reports OLS estimates on the “distant” dummy and strata fixed effect. Standard errors are clustered at boma level and reported below coefficients in parenthesis.\* (\*\*, \*\*\*) indicates statistical significance at the ten-percent (five-percent, one-percent) level.

**Table A3.5** – Placebo test of first stage results from LATE estimation

|                                                           | (1)<br>“Training,<br>no grant” | (2)<br>“Training<br>and grant” | (3)<br>“Training,<br>no grant” | (4)<br>“Training<br>and grant” | (5)<br>“Training,<br>no grant” | (6)<br>“Training<br>and grant” |
|-----------------------------------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| Instrument 1 Treatment                                    | 0.5572***<br>(0.000)           | 0.2581***<br>(0.000)           | 0.5553***<br>(0.000)           | 0.2651***<br>(0.000)           | 0.4622***<br>(0.000)           | 0.3188***<br>(0.000)           |
| Instrument 2 Treatment x<br>(log) Distance<br>to any bank | 0.0044<br>(0.820)              | 0.0061<br>(0.712)              | 0.0039<br>(0.843)              | 0.0052<br>(0.751)              | 0.0065<br>(0.761)              | 0.0020<br>(0.912)              |
| (Log) distance<br>to any bank                             | 0.0236***<br>(0.005)           | -0.0178**<br>(0.011)           | 0.0226***<br>(0.009)           | -0.0170**<br>(0.020)           | 0.0140*<br>(0.071)             | -0.0130*<br>(0.074)            |
| Strata FE                                                 | Yes                            | Yes                            | Yes                            | Yes                            | Yes                            | Yes                            |
| Individual<br>controls                                    | No                             | No                             | Yes                            | Yes                            | Yes                            | Yes                            |
| Geography<br>controls                                     | No                             | No                             | No                             | No                             | Yes                            | Yes                            |
| K-stat                                                    | 0.0132                         | 0.0132                         | 0.0087                         | 0.0087                         | 0.0033                         | 0.0033                         |
| Observations                                              | 1,190                          | 1,167                          | 1,167                          | 1,151                          | 1,151                          |                                |

*Notes:* Columns (1) and (2) correspond to LATE estimates without control variables, columns (3) and (4) correspond to LATE estimates with baseline controls, and columns (5) and (6) to LATE estimates with baseline and geographic controls. P-values are in parenthesis displayed below the estimated coefficients. \* (\*\*, \*\*\*) indicates statistical significance at the ten-percent (five-percent, one-percent) level.

**Table A3.6** – Attrition - Baseline difference between attritors and non-attritors

|                                                   |                           | Non-attritors |       | Attritors |          |       |
|---------------------------------------------------|---------------------------|---------------|-------|-----------|----------|-------|
|                                                   |                           | Mean          | SD    | Coeff.    | SE       | N     |
| Panel A: Individual and household characteristics |                           |               |       |           |          |       |
| Age                                               |                           | 27.632        | 4.826 | -0.251    | 0.233    | 2,292 |
| Gender                                            |                           | 0.636         | 0.481 | -0.088    | 0.022*** | 2,292 |
| Married                                           |                           | 0.661         | 0.473 | -0.020    | 0.028    | 2,291 |
| Employment status                                 |                           | 0.619         | 0.486 | 0.006     | 0.020    | 2,292 |
| Business ownership                                |                           | 0.649         | 0.478 | 0.009     | 0.018    | 2,292 |
| Consumption food                                  |                           | 5.405         | 1.170 | -0.141    | 0.054*** | 2,292 |
| Consumption nonfood                               |                           | 2.432         | 1.325 | -0.036    | 0.065    | 2,292 |
| Formal bank account                               |                           | 0.397         | 0.489 | -0.068    | 0.022*** | 2,292 |
| (Log) amount formal loans                         |                           | -0.290        | 1.626 | -0.180    | 0.086**  | 2,280 |
| (Log) amount informal loans                       |                           | -1.360        | 3.323 | 0.290     | 0.127**  | 2,258 |
| Education level                                   | No education              | 0.210         | 0.408 | -0.048    | 0.020**  | 2,292 |
|                                                   | Some Primary              | 0.307         | 0.462 | 0.050     | 0.019*** | 2,292 |
|                                                   | Some Secondary            | 0.379         | 0.485 | 0.035     | 0.022    | 2,292 |
|                                                   | Some University or Higher | 0.104         | 0.305 | -0.037    | 0.011*** | 2,292 |
| Literacy                                          | No English                | 0.261         | 0.440 | -0.030    | 0.020    | 2,292 |
|                                                   | Some English              | 0.286         | 0.452 | -0.001    | 0.020    | 2,292 |
|                                                   | Good English              | 0.453         | 0.498 | 0.031     | 0.025    | 2,292 |
| Numeracy                                          | Low                       | 0.252         | 0.434 | -0.043    | 0.018**  | 2,292 |
|                                                   | Medium                    | 0.173         | 0.378 | 0.023     | 0.017    | 2,292 |
|                                                   | High                      | 0.575         | 0.494 | 0.020     | 0.021    | 2,292 |
| Household size                                    |                           | 7.384         | 3.342 | -0.342    | 0.148**  | 2,292 |
| Number of children                                |                           | 3.248         | 2.294 | -0.254    | 0.110**  | 2,292 |
| Number of elderly                                 |                           | 0.098         | 0.344 | -0.001    | 0.014    | 2,292 |
| Number of rooms                                   |                           | 3.179         | 1.691 | -0.116    | 0.079    | 2,292 |
| Number of buildings                               |                           | 3.611         | 1.989 | -0.007    | 0.079    | 2,292 |
| (Log) distance to KCB branch                      |                           | 2.338         | 1.938 | 0.251     | 0.139*   | 2,256 |
| Fatalities UCDP 2011-2014                         |                           | 0.017         | 0.112 | -0.004    | 0.002    | 2,292 |
| Fatalities UCDP 2015-2017                         |                           | 0.083         | 2.139 | -0.054    | 0.059    | 2,292 |
| Joint test of orthogonality                       |                           | F-stat        |       | p-value   |          |       |
|                                                   |                           | 4.00          |       | 0.000     |          |       |
| Panel B: State at baseline                        |                           |               |       |           |          |       |
| Central Equatoria                                 |                           | 0.171         | 0.376 | -0.008    | 0.026    | 2,292 |
| Eastern Equatoria                                 |                           | 0.154         | 0.361 | 0.008     | 0.045    | 2,292 |
| Lakes                                             |                           | 0.147         | 0.354 | 0.034     | 0.026    | 2,292 |
| Northern Bahr El Ghazal                           |                           | 0.175         | 0.380 | -0.006    | 0.025    | 2,292 |
| Western Bahr El Ghazal                            |                           | 0.171         | 0.376 | 0.002     | 0.037    | 2,292 |
| Western Equatoria                                 |                           | 0.183         | 0.387 | -0.030    | 0.047    | 2,292 |
| Joint test of orthogonality                       |                           | F-stat        |       | p-value   |          |       |
|                                                   |                           | 3.21          |       | 0.007     |          |       |

Notes: Columns (1) and (2) reports mean values and standard deviations of baseline characteristics for non-attritors. In Panel A columns (3) and (4) report results of OLS estimates on attrition conditional on state fixed effect, in Panel B column (2) reports simple OLS estimates on receiving "training and grant". Standard errors are clustered at boma level and reported below coefficients in parenthesis. \* (\*\*, \*\*\*) indicates statistical significance at the ten-percent (five-percent, one-percent) level.

**Table A3.7** – Attrition - Difference in attrition probability between original treatment and control group

|           | (1)          | (2)       | (3)   |
|-----------|--------------|-----------|-------|
|           | Control mean | Treatment | N     |
|           | (SD)         |           |       |
| Attrition | 0.335        | 0.002     | 2,292 |
|           | (0.472)      | (0.018)   |       |

*Notes:* Difference in attrition probability between the original treatment vs. the control group, estimated with an OLS regression of the attrition dummy on the treatment dummy and strata fixed effects. The standard error of the treatment dummy is clustered at boma level and reported in parentheses. \* (\*\*, \*\*\*) indicates statistical significance at the ten-percent (five-percent, one-percent) level.

**Table A3.8** – Attrition - Baseline difference between attritors from original control vs attritors original treatment group

|                                          |                           | (1)           | (2)       | (3)    | (4)     | (5) |
|------------------------------------------|---------------------------|---------------|-----------|--------|---------|-----|
|                                          |                           | Control group | ITT group |        |         |     |
|                                          |                           | Mean          | SD        | Coeff. | SE      | N   |
| Individual and household characteristics |                           |               |           |        |         |     |
| Age                                      |                           | 27.226        | 5.186     | 0.450  | 0.362   | 769 |
| Gender                                   |                           | 0.582         | 0.494     | -0.073 | 0.040*  | 769 |
| Married                                  |                           | 0.670         | 0.471     | -0.031 | 0.031   | 768 |
| Employment status                        |                           | 0.644         | 0.479     | -0.044 | 0.036   | 769 |
| Business ownership                       |                           | 0.670         | 0.471     | -0.022 | 0.030   | 769 |
| Consumption food                         |                           | 5.223         | 1.334     | 0.108  | 0.092   | 769 |
| Consumption nonfood                      |                           | 2.447         | 1.287     | -0.071 | 0.104   | 769 |
| Formal bank account                      |                           | 0.322         | 0.468     | 0.015  | 0.030   | 769 |
| (Log) amount formal loans                |                           | -0.386        | 1.859     | -0.178 | 0.142   | 765 |
| (Log) amount informal loans              |                           | -1.017        | 2.913     | -0.181 | 0.216   | 758 |
| Education level                          | No education              | 0.190         | 0.393     | -0.039 | 0.024   | 769 |
|                                          | Some Primary              | 0.340         | 0.474     | 0.029  | 0.032   | 769 |
|                                          | Some Secondary            | 0.410         | 0.493     | 0.001  | 0.031   | 769 |
|                                          | Some University or Higher | 0.060         | 0.237     | 0.009  | 0.015   | 769 |
| Literacy                                 | No English                | 0.249         | 0.433     | -0.031 | 0.033   | 769 |
|                                          | Some English              | 0.249         | 0.433     | 0.062  | 0.030** | 769 |
|                                          | Good English              | 0.501         | 0.501     | -0.031 | 0.036   | 769 |
| Numeracy                                 | Low                       | 0.231         | 0.422     | -0.032 | 0.027   | 769 |
|                                          | Medium                    | 0.190         | 0.393     | 0.003  | 0.030   | 769 |
|                                          | High                      | 0.579         | 0.494     | 0.029  | 0.037   | 769 |
| Household size                           |                           | 7.182         | 3.463     | -0.206 | 0.256   | 769 |
| Number of children                       |                           | 3.026         | 2.301     | 0.012  | 0.161   | 769 |
| Number of elderly                        |                           | 0.117         | 0.360     | -0.038 | 0.024   | 769 |
| Number of rooms                          |                           | 3.091         | 1.784     | -0.068 | 0.098   | 769 |
| Number of buildings                      |                           | 3.670         | 1.836     | -0.103 | 0.109   | 769 |
| (Log) distance to KCB branch             |                           | 2.593         | 1.962     | -0.096 | 0.104   | 756 |
| Fatalities UCDP 2011-2014                |                           | 0.014         | 0.054     | -0.002 | 0.003   | 769 |
| Fatalities UCDP 2015-2017                |                           | -0.004        | 1.130     | 0.012  | 0.068   | 769 |
| Joint test of orthogonality              |                           | F-stat        |           |        | p-value |     |
|                                          |                           | 1.39          |           |        | 0.0789  |     |
| State at baseline                        |                           |               |           |        |         |     |
| Central Equatoria                        |                           | 0.174         | 0.380     | -0.011 | 0.011   | 769 |
| Eastern Equatoria                        |                           | 0.169         | 0.375     | 0.000  | 0.000   | 769 |
| Lakes                                    |                           | 0.164         | 0.370     | 0.003  | 0.003   | 769 |
| Northern Bahr El Ghazal                  |                           | 0.174         | 0.380     | 0.008  | 0.007   | 769 |
| Western Bahr El Ghazal                   |                           | 0.148         | 0.356     | 0.001  | 0.004   | 769 |
| Western Equatoria                        |                           | 0.171         | 0.377     | 0.000  | 0.004   | 769 |
| Joint test of orthogonality              |                           | F-stat        |           |        | p-value |     |
|                                          |                           | 1.33          |           |        | 0.2487  |     |

*Notes:* Columns (1) and (2) report mean values and standard deviation of baseline characteristics for attritors from the control group. In Panel A columns (3) and (4) report results from OLS estimates on being an attritor from the treatment group conditional on state fixed effect, in Panel B column (3) and (4) report results from a simple OLS estimation on being an attritor from the treatment group. Standard errors are clustered at boma level and reported below coefficients in parenthesis.\* (\*\*, \*\*\*) indicates statistical significance at the ten-percent (five-percent, one-percent) level.

**Table A3.9** – Attrition - Baseline difference between difficult-to-reach endline participants and attritors

|                                          | (1)                       | (2)   | (3)       | (4)       | (5)   |       |
|------------------------------------------|---------------------------|-------|-----------|-----------|-------|-------|
|                                          | Difficult-to-reach        |       | Attritors |           |       |       |
|                                          | Mean                      | SD    | Coeff.    | SE        | N     |       |
| Individual and household characteristics |                           |       |           |           |       |       |
| Age                                      | 27.699                    | 5.004 | -0.216    | 0.292     | 1,248 |       |
| Gender                                   | 0.666                     | 0.472 | -0.123*** | 0.027     | 1,248 |       |
| Married                                  | 0.714                     | 0.452 | -0.054    | 0.033     | 1,247 |       |
| Employment status                        | 0.662                     | 0.474 | 0.007     | 0.026     | 1,248 |       |
| Business ownership                       | 0.706                     | 0.456 | -0.001    | 0.027     | 1,248 |       |
| Consumption food                         | 5.290                     | 1.238 | -0.059    | 0.069     | 1,248 |       |
| Consumption nonfood                      | 2.326                     | 1.277 | -0.007    | 0.093     | 1,248 |       |
| Formal bank account                      | 0.336                     | 0.473 | -0.037    | 0.028     | 1,248 |       |
| (Log) amount formal loans                | -0.157                    | 1.203 | -0.256**  | 0.100     | 1,241 |       |
| (Log) amount informal loans              | -1.263                    | 3.175 | 0.245     | 0.181     | 1,233 |       |
| Education level                          | No education              | 0.319 | 0.467     | -0.121*** | 0.028 | 1,248 |
|                                          | Some Primary              | 0.351 | 0.478     | 0.035     | 0.027 | 1,248 |
|                                          | Some Secondary            | 0.261 | 0.440     | 0.110***  | 0.026 | 1,248 |
|                                          | Some University or Higher | 0.069 | 0.254     | -0.024*   | 0.014 | 1,248 |
| Literacy                                 | No English                | 0.376 | 0.485     | -0.112*** | 0.030 | 1,248 |
|                                          | Some English              | 0.267 | 0.443     | 0.019     | 0.027 | 1,248 |
|                                          | Good English              | 0.357 | 0.480     | 0.093***  | 0.035 | 1,248 |
| Numeracy                                 | Low                       | 0.363 | 0.481     | -0.122*** | 0.026 | 1,248 |
|                                          | Medium                    | 0.163 | 0.370     | 0.031     | 0.022 | 1,248 |
|                                          | High                      | 0.474 | 0.500     | 0.091***  | 0.029 | 1,248 |
| Household size                           | 7.376                     | 3.302 | -0.317*   | 0.187     | 1,248 |       |
| Number of children                       | 3.457                     | 2.355 | -0.352**  | 0.143     | 1,248 |       |
| Number of elderly                        | 0.100                     | 0.334 | -0.002    | 0.019     | 1,248 |       |
| Number of rooms                          | 3.046                     | 1.552 | -0.074    | 0.108     | 1,248 |       |
| Number of buildings                      | 3.777                     | 2.013 | -0.100    | 0.100     | 1,248 |       |
| (Log) distance to KCB branch             | 2.790                     | 1.918 | -0.073    | 0.147     | 1,230 |       |
| Events UCDP 2011-2014                    | 0.038                     | 0.073 | 0.005     | 0.006     | 1,248 |       |
| Events UCDP 2015-2017                    | -0.062                    | 1.193 | 0.230***  | 0.087     | 1,248 |       |
| Fatalities UCDP 2011-2014                | 0.012                     | 0.058 | -0.004    | 0.003     | 1,248 |       |
| Fatalities UCDP 2015-2017                | 0.029                     | 1.367 | -0.061    | 0.079     | 1,248 |       |
| Events ACLED 2011-2014                   | 0.020                     | 0.026 | 0.001     | 0.001     | 1,248 |       |
| Events ACLED 2015-2017                   | 0.012                     | 0.011 | 0.002*    | 0.001     | 1,248 |       |
| Fatalities ACLED 2011-2014               | 0.014                     | 0.033 | -0.001    | 0.002     | 1,248 |       |
| Fatalities ACLED 2015-2017               | 0.010                     | 0.011 | 0.001*    | 0.001     | 1,248 |       |
| Joint test of orthogonality              | F-stat                    |       | p-value   |           |       |       |
|                                          | 3.14                      |       | 0.000     |           |       |       |
| State at baseline                        |                           |       |           |           |       |       |
| Central Equatoria                        | 0.208                     | 0.406 | -0.118*** | 0.029     | 1,523 |       |
| Eastern Equatoria                        | 0.184                     | 0.388 | -0.096**  | 0.049     | 1,523 |       |
| Lakes                                    | 0.148                     | 0.356 | -0.004    | 0.024     | 1,523 |       |
| Northern Bahr El Ghazal                  | 0.126                     | 0.333 | 0.153***  | 0.040     | 1,523 |       |
| Western Bahr El Ghazal                   | 0.149                     | 0.357 | 0.068*    | 0.037     | 1,523 |       |
| Western Equatoria                        | 0.184                     | 0.388 | -0.002    | 0.035     | 1,523 |       |
| Joint test of orthogonality              | F-stat                    |       | p-value   |           |       |       |
|                                          | 1.79                      |       | 0.111     |           |       |       |

*Notes:* "Hard-to-reach" is defined as not reached during the phone survey that preceded the endline survey. Columns (1) and (2) report mean values and standard deviations of baseline characteristics for difficult-to-reach participants. In Panel A, columns (3) and (4) report OLS estimates on attrition conditional on state fixed effect, in Panel B, columns (3) and (4) report simple OLS estimates on attrition. Standard errors are clustered at boma level and reported below coefficients in parenthesis.\* (\*\*, \*\*\*) indicates statistical significance at the ten-percent (five-percent, one-percent) level.

## A.4 Treatment on the treated estimates

**Table A4.1** – Treatment on the treated estimates of the “training and grant” vs “training, but no grant” on main socio-economic outcomes

|                                       |                         | (1)<br>TOT<br>(no controls) | (2)<br>TOT<br>(controls) | (3)<br>TOT<br>(controls +<br>geography<br>controls) |
|---------------------------------------|-------------------------|-----------------------------|--------------------------|-----------------------------------------------------|
| <i>Main outcomes – Socio-economic</i> |                         |                             |                          |                                                     |
| Employment<br>index                   | “Training,<br>no grant” | 0.087<br>(0.149)            | 0.086<br>(0.134)         | 0.147*<br>(0.094)                                   |
|                                       | “Training<br>and grant” | 0.057<br>(0.580)            | 0.062<br>(0.554)         | 0.115<br>(0.351)                                    |
| Consumption<br>index                  | “Training,<br>no grant” | 0.046<br>(0.489)            | 0.037<br>(0.591)         | -0.011<br>(0.907)                                   |
|                                       | “Training<br>and grant” | 0.178**<br>(0.023)          | 0.157**<br>(0.048)       | 0.131<br>(0.217)                                    |
| Savings<br>index                      | “Training<br>no grant”  | 0.221***<br>(0.000)         | 0.205***<br>(0.000)      | 0.177**<br>(0.022)                                  |
|                                       | “Training<br>and grant” | 0.434***<br>(0.000)         | 0.420***<br>(0.000)      | 0.379***<br>(0.000)                                 |
| Business<br>skills index              | “Training,<br>no grant” | -0.031<br>(0.594)           | -0.022<br>(0.727)        | -0.011<br>(0.906)                                   |
|                                       | “Training<br>and grant” | 0.240***<br>(0.004)         | 0.220***<br>(0.010)      | 0.263**<br>(0.019)                                  |
| Observations                          |                         | 1,523                       | 1,495                    | 1,474                                               |

*Notes:* All regression control for gender-state fixed effects. P-values are in parenthesis displayed below the estimated coefficients. \* (\*\*, \*\*\*) indicates statistical significance at the ten-percent (five-percent, one-percent) level.

**Table A4.2** – Treatment on the treated estimates of the “training and grant” vs “training, but no grant” on main psychological and behavioral outcomes

|                                                     |                      | (1)<br>TOT<br>(no controls) | (2)<br>TOT<br>(controls) | (3)<br>TOT<br>(controls +<br>geography<br>controls) |
|-----------------------------------------------------|----------------------|-----------------------------|--------------------------|-----------------------------------------------------|
| <i>Main outcomes – Psychological and behavioral</i> |                      |                             |                          |                                                     |
| Psychological wellbeing index                       | “Training, no grant” | 0.029<br>(0.585)            | 0.035<br>(0.490)         | 0.054<br>(0.444)                                    |
|                                                     | “Training and grant” | 0.027<br>(0.716)            | -0.014<br>(0.847)        | -0.015<br>(0.862)                                   |
| Risk index                                          | “Training, no grant” | 0.016<br>(0.839)            | 0.000<br>(0.998)         | 0.089<br>(0.404)                                    |
|                                                     | “Training and grant” | -0.068<br>(0.365)           | -0.076<br>(0.327)        | 0.003<br>(0.973)                                    |
| Trust index                                         | “Training, no grant” | -0.144**<br>(0.012)         | -0.169***<br>(0.002)     | -0.162*<br>(0.081)                                  |
|                                                     | “Training and grant” | 0.057<br>(0.430)            | 0.072<br>(0.329)         | 0.104<br>(0.301)                                    |
| Crime and violence index                            | “Training, no grant” | -0.051<br>(0.414)           | -0.061<br>(0.331)        | 0.033<br>(0.700)                                    |
|                                                     | “Training and grant” | -0.104<br>(0.170)           | -0.103<br>(0.190)        | -0.066<br>(0.415)                                   |
| Migration index                                     | “Training, no grant” | -0.080<br>(0.150)           | -0.078<br>(0.167)        | -0.102<br>(0.212)                                   |
|                                                     | “Training and grant” | 0.029<br>(0.738)            | 0.018<br>(0.823)         | -0.002<br>(0.984)                                   |
| Observations                                        |                      | 1,523                       | 1,495                    | 1,474                                               |

*Notes:* All regression control for gender-state fixed effects. P-values are in parenthesis. \* (\*\*, \*\*\*) indicates statistical significance at the ten-percent (five-percent, one-percent) level.

## A.5 *Ex post* minimum detectable effect sizes

**Table A5.1** – *Ex post* minimum detectable effect size: ITT estimates

|                               | (1)<br>No controls | (2)<br>Controls |
|-------------------------------|--------------------|-----------------|
| Employment index              | 0.164              | 0.160           |
| Consumption index             | 0.169              | 0.169           |
| Savings index                 | 0.155              | 0.153           |
| Business skills index         | 0.139              | 0.148           |
| Psychological wellbeing index | 0.135              | 0.126           |
| Risk index                    | 0.177              | 0.167           |
| Trust index                   | 0.137              | 0.140           |
| Crime and violence index      | 0.143              | 0.147           |
| Migration index               | 0.137              | 0.144           |

**Table A5.2** – *Ex post* minimum detectable effect size: LATE estimates

|                               | (1)                        | (2)                        | (3)                        | (4)                        | (5)                                 | (6)                        |
|-------------------------------|----------------------------|----------------------------|----------------------------|----------------------------|-------------------------------------|----------------------------|
|                               | no controls                |                            | controls                   |                            | (controls +<br>(geography controls) |                            |
|                               | "Training,<br>no<br>grant" | "Training<br>and<br>grant" | "Training,<br>no<br>grant" | "Training<br>and<br>grant" | "Training,<br>no<br>grant"          | "Training<br>and<br>grant" |
| Employment index              | 0.649                      | 1.185                      | 0.614                      | 1.102                      | 0.648                               | 0.850                      |
| Consumption index             | 0.464                      | 1.321                      | 0.449                      | 1.183                      | 0.446                               | 0.914                      |
| Savings index                 | 0.427                      | 1.035                      | 0.441                      | 1.033                      | 0.526                               | 0.889                      |
| Business skills index         | 0.490                      | 0.974                      | 0.528                      | 1.052                      | 0.423                               | 0.872                      |
| Psychological wellbeing index | 0.465                      | 0.925                      | 0.441                      | 0.865                      | 0.333                               | 0.706                      |
| Risk index                    | 0.757                      | 1.515                      | 0.703                      | 1.414                      | 0.893                               | 1.174                      |
| Trust index                   | 0.571                      | 1.042                      | 0.591                      | 1.094                      | 0.400                               | 0.767                      |
| Crime and violence index      | 0.799                      | 1.405                      | 0.833                      | 1.461                      | 0.643                               | 0.954                      |
| Migration index               | 0.464                      | 1.030                      | 0.505                      | 1.074                      | 0.543                               | 0.848                      |

**Table A5.3** – *Ex post* minimum detectable effect size: LATE estimates for “training, no grant” and “training and grant” by gender

|                     |          | (1)                   | (2)        | (3)                             | (4)                     | (5)        | (6)                             | (7)                       |
|---------------------|----------|-----------------------|------------|---------------------------------|-------------------------|------------|---------------------------------|---------------------------|
|                     |          | <b>LATE for males</b> |            |                                 | <b>LATE for females</b> |            |                                 | <b>Coeff</b>              |
|                     |          | (no<br>controls)      | (controls) | (controls<br>+ geo<br>controls) | (no<br>controls)        | (controls) | (controls<br>+ geo<br>controls) | equality<br>(3) vs<br>(6) |
| Employment          | grant    | 1.836                 | 1.681      | 1.269                           | 1.269                   | 1.194      | 0.976                           | 1.269                     |
| index               | no grant | 1.062                 | 1.073      | 1.361                           | 1.361                   | 0.569      | 0.783                           | 1.361                     |
| Consumption         | grant    | 1.672                 | 1.597      | 1.198                           | 1.198                   | 1.431      | 0.988                           | 1.198                     |
| index               | no grant | 0.886                 | 0.912      | 0.718                           | 0.718                   | 0.565      | 1.122                           | 0.718                     |
| Savings, investment | grant    | 1.815                 | 1.680      | 1.286                           | 1.286                   | 1.073      | 0.955                           | 1.286                     |
| & debt index        | no grant | 0.943                 | 0.929      | 0.724                           | 0.724                   | 0.454      | 0.762                           | 0.724                     |
| Business skills     | grant    | 1.595                 | 1.726      | 1.342                           | 1.342                   | 1.303      | 1.025                           | 1.342                     |
| index               | no grant | 0.978                 | 1.108      | 0.749                           | 0.749                   | 0.617      | 1.093                           | 0.749                     |
| Psychological       | grant    | 1.442                 | 1.451      | 1.136                           | 1.136                   | 1.177      | 0.932                           | 1.136                     |
| wellbeing index     | no grant | 0.944                 | 0.987      | 0.950                           | 0.950                   | 0.452      | 0.716                           | 0.950                     |
| Risk index          | grant    | 1.667                 | 1.689      | 1.159                           | 1.159                   | 1.615      | 1.180                           | 1.159                     |
|                     | no grant | 1.015                 | 1.039      | 0.952                           | 0.952                   | 0.707      | 1.443                           | 0.952                     |
| Trust index         | grant    | 1.421                 | 1.461      | 1.167                           | 1.167                   | 1.287      | 0.991                           | 1.167                     |
|                     | no grant | 1.007                 | 1.073      | 1.145                           | 1.145                   | 0.498      | 0.723                           | 1.145                     |
| Crime/violence      | grant    | 1.772                 | 1.754      | 1.485                           | 1.485                   | 1.827      | 1.104                           | 1.485                     |
| index               | no grant | 1.073                 | 1.188      | 0.994                           | 0.994                   | 0.893      | 1.124                           | 0.994                     |
| Migration           | grant    | 1.288                 | 1.307      | 1.103                           | 1.103                   | 1.468      | 1.139                           | 1.103                     |
| index               | no grant | 0.790                 | 0.907      | 1.147                           | 1.147                   | 0.508      | 0.993                           | 1.147                     |

## A.6 Robustness tables

**Table A6.1** – Lee bounds for the intention-to-treat effects on main socio-economic outcomes

|                                       | (1)         | (2)         |
|---------------------------------------|-------------|-------------|
|                                       | Lower bound | Upper bound |
| <i>Main outcomes – Socio-economic</i> |             |             |
| Employment index                      | 0.045       | 0.047       |
|                                       | (0.610)     | (0.810)     |
| Consumption index                     | 0.093       | 0.098       |
|                                       | (0.173)     | (0.538)     |
| Savings, investment and debt index    | 0.261**     | 0.268**     |
|                                       | (0.031)     | (0.047)     |
| Business skills index                 | 0.007       | 0.009       |
|                                       | (0.942)     | (0.926)     |
| Observations                          | 2292        |             |

*Notes:* P-values are in parenthesis displayed below the estimated coefficients. \* (\*\*, \*\*\*) indicates statistical significance at the ten-percent (five-percent, one-percent) level.

**Table A6.2** – Lee bounds for the intention-to-treat effects on main psychological and behavioral outcomes

|                                                     | (1)                  | (2)               |
|-----------------------------------------------------|----------------------|-------------------|
|                                                     | Lower bound          | Upper bound       |
| <i>Main outcomes – Psychological and behavioral</i> |                      |                   |
| Psychological wellbeing index                       | -0.005<br>(0.961)    | -0.002<br>(0.989) |
| Risk index                                          | -0.052<br>(0.595)    | -0.049<br>(0.645) |
| Trust index                                         | -0.055<br>(0.590)    | -0.050<br>(0.641) |
| Crime and violence index                            | -0.253***<br>(0.000) | -0.105<br>(0.553) |
| Migration index                                     | -0.027<br>(0.641)    | -0.027<br>(0.826) |
| Observations                                        | 2292                 |                   |

*Notes:* P-values are in parenthesis displayed below the estimated coefficients. \* (\*\*, \*\*\*) indicates statistical significance at the ten-percent (five-percent, one-percent) level.

**Table A6.3** – Weighted intention-to-treat effects of the original intervention on main socio-economic outcomes.

|                                       | (1)<br>ITT<br>(no controls) | (2)<br>ITT<br>(controls) |
|---------------------------------------|-----------------------------|--------------------------|
| <i>Main outcomes – Socio-economic</i> |                             |                          |
| Employment index                      | 0.069<br>(0.257)            | 0.074<br>(0.223)         |
| Consumption index                     | 0.103<br>(0.103)            | 0.094<br>(0.128)         |
| Savings, investment and debt index    | 0.283***<br>(0.000)         | 0.281***<br>(0.000)      |
| Business skills index                 | 0.024<br>(0.633)            | 0.023<br>(0.668)         |
| Observations                          | 1495                        | 1507                     |

*Notes:* All regression control for gender-state fixed effects. P-values are in parenthesis displayed below the estimated coefficients. \* (\*\*, \*\*\*) indicates statistical significance at the ten-percent (five-percent, one-percent) level.

**Table A6.4** – Weighted intention-to-treat effects of the original intervention on main psychological and behavioral outcomes.

|                                                     | (1)<br>ITT<br>(no controls) | (2)<br>ITT<br>(controls) |
|-----------------------------------------------------|-----------------------------|--------------------------|
| <i>Main outcomes – Psychological and behavioral</i> |                             |                          |
| Psychological wellbeing index                       | -0.002<br>(0.961)           | 0.004<br>(0.929)         |
| Risk index                                          | -0.048<br>(0.408)           | -0.062<br>(0.287)        |
| Trust index                                         | -0.033<br>(0.513)           | -0.045<br>(0.385)        |
| Crime and violence index                            | -0.077<br>(0.145)           | -0.086<br>(0.105)        |
| Migration index                                     | -0.038<br>(0.442)           | -0.026<br>(0.613)        |
| Observations                                        | 1495                        | 1495                     |

*Notes:* All regression control for gender-state fixed effects. P-values are in parenthesis displayed below the estimated coefficients. \* (\*\*, \*\*\*) indicates statistical significance at the ten-percent (five-percent, one-percent) level.

**Table A6.5** – Weighted local average treatment effects of the “training and grant” vs “training, but no grant” on main socioeconomic outcomes

|                                      | (1)                        | (2)                        | (3)                        | (4)                        | (5)                                | (6)                        | (7)       |
|--------------------------------------|----------------------------|----------------------------|----------------------------|----------------------------|------------------------------------|----------------------------|-----------|
|                                      | (no controls)              |                            | (controls)                 |                            | (controls +<br>geography controls) |                            |           |
|                                      | “Training,<br>no<br>grant” | “Training<br>and<br>grant” | “Training,<br>no<br>grant” | “Training<br>and<br>grant” | “Training,<br>no<br>grant”         | “Training<br>and<br>grant” | (5) - (6) |
| <i>Main outcomes – Socioeconomic</i> |                            |                            |                            |                            |                                    |                            |           |
| Employment                           | -0.050                     | 0.351                      | -0.041                     | 0.335                      | 0.245                              | 0.290                      | -0.046    |
| index                                | (0.838)                    | (0.450)                    | (0.864)                    | (0.434)                    | (0.289)                            | (0.364)                    | (0.920)   |
| Consumption                          | -0.429*                    | 1.130*                     | -0.352*                    | 0.937**                    | -0.390**                           | 0.701**                    | -1.091*** |
| index                                | (0.052)                    | (0.058)                    | (0.060)                    | (0.048)                    | (0.017)                            | (0.044)                    | (0.005)   |
| Savings                              | -0.208                     | 1.367***                   | -0.198                     | 1.326***                   | -0.150                             | 1.128***                   | -1.279*** |
| index                                | (0.278)                    | (0.007)                    | (0.287)                    | (0.003)                    | (0.467)                            | (0.002)                    | (0.001)   |
| Business                             | 0.006                      | 0.065                      | 0.045                      | -0.015                     | 0.078                              | -0.075                     | 0.152     |
| skills index                         | (0.976)                    | (0.873)                    | (0.826)                    | (0.970)                    | (0.592)                            | (0.820)                    | (0.694)   |
| Observations                         | 1,474                      |                            | 1,474                      |                            | 1,474                              |                            |           |
| F-stat                               | 4.041                      |                            | 4.165                      |                            | 14.084                             |                            |           |

*Notes:* All regressions control for gender-state fixed effects. P-values are in parenthesis displayed below the estimated coefficients. \* (\*\*, \*\*\*) indicates statistical significance at the ten-percent (five-percent, one-percent) level.

**Table A6.6** – Weighted local average treatment effects of the “training and grant” vs “training, but no grant” on main psychological and behavioral outcomes

|                                                     | (1)                        | (2)                        | (3)                        | (4)                        | (5)                                | (6)                        | (7)               |
|-----------------------------------------------------|----------------------------|----------------------------|----------------------------|----------------------------|------------------------------------|----------------------------|-------------------|
|                                                     | (no controls)              |                            | (controls)                 |                            | (controls +<br>geography controls) |                            |                   |
|                                                     | “Training,<br>no<br>grant” | “Training<br>and<br>grant” | “Training,<br>no<br>grant” | “Training<br>and<br>grant” | “Training,<br>no<br>grant”         | “Training<br>and<br>grant” | (5) - (6)         |
| <i>Main outcomes – Psychological and behavioral</i> |                            |                            |                            |                            |                                    |                            |                   |
| Psychological<br>wellbeing index                    | -0.156<br>(0.366)          | 0.268<br>(0.439)           | -0.083<br>(0.632)          | 0.140<br>(0.673)           | -0.215*<br>(0.089)                 | 0.229<br>(0.392)           | -0.444<br>(0.155) |
| Risk index                                          | -0.470<br>(0.096)          | 0.715<br>(0.218)           | -0.435<br>(0.110)          | 0.599<br>(0.263)           | -0.223<br>(0.487)                  | 0.467<br>(0.273)           | -0.690<br>(0.307) |
| Trust index                                         | 0.015<br>(0.951)           | -0.151<br>(0.732)          | 0.004<br>(0.988)           | -0.161<br>(0.712)          | -0.383**<br>(0.027)                | 0.112<br>(0.709)           | -0.495<br>(0.207) |
| Crime and<br>violence index                         | -0.526<br>(0.132)          | 0.677<br>(0.260)           | -0.574*<br>(0.088)         | 0.716<br>(0.213)           | -0.172<br>(0.468)                  | 0.274<br>(0.444)           | -0.446<br>(0.389) |
| Migration index                                     | -0.302<br>(0.162)          | 0.474<br>(0.278)           | -0.329<br>(0.132)          | 0.556<br>(0.196)           | -0.141<br>(0.490)                  | 0.190<br>(0.551)           | -0.331<br>(0.449) |
| Observations                                        | 1,474                      |                            | 1,474                      |                            | 1,474                              |                            |                   |
| F-stat                                              | 4.041                      |                            | 4.165                      |                            | 14.084                             |                            |                   |

Notes: All regressions control for gender-state fixed effects. P-values are in parenthesis displayed below the estimated coefficients. \* (\*\*, \*\*\*) indicates statistical significance at the ten-percent (five-percent, one-percent) level.

**Table A6.7** – Weighted local average treatment effects of the “training and grant” vs “training, but no grant” on main socio-economic outcomes by gender

|                                       |                         | (1)                | (2)                | (3)                             | (4)                | (5)                | (6)                             | (7)                       |
|---------------------------------------|-------------------------|--------------------|--------------------|---------------------------------|--------------------|--------------------|---------------------------------|---------------------------|
|                                       |                         | LATE for males     |                    |                                 | LATE for females   |                    |                                 | Coeff                     |
|                                       |                         | (no<br>controls)   | (controls)         | (controls<br>+ geo<br>controls) | (no<br>controls)   | (controls)         | (controls<br>+ geo<br>controls) | equality<br>(3) vs<br>(6) |
| <i>Main outcomes – Socio-economic</i> |                         |                    |                    |                                 |                    |                    |                                 |                           |
| Employment<br>index                   | “training,<br>no grant” | 0.228<br>(0.587)   | 0.106<br>(0.795)   | 0.293<br>(0.519)                | -0.189<br>(0.472)  | -0.091<br>(0.682)  | 0.447<br>(0.137)                | 0.154<br>(0.729)          |
|                                       | “training<br>and grant” | -0.136<br>(0.856)  | -0.050<br>(0.940)  | 0.122<br>(0.797)                | 0.716<br>(0.210)   | 0.536<br>(0.249)   | 0.427<br>(0.253)                | 0.305<br>(0.597)          |
|                                       | “training,<br>no grant” | -0.289<br>(0.454)  | -0.276<br>(0.465)  | -0.109<br>(0.708)               | -0.458*<br>(0.089) | -0.335<br>(0.138)  | -0.960**<br>(0.030)             | -0.851<br>(0.159)         |
| Consumption<br>index                  | “training<br>and grant” | 0.654<br>(0.363)   | 0.504<br>(0.435)   | 0.276<br>(0.551)                | 1.386*<br>(0.066)  | 1.117*<br>(0.053)  | 0.483<br>(0.187)                | 0.206<br>(0.728)          |
|                                       | “training,<br>no grant” | -0.520<br>(0.225)  | -0.493<br>(0.198)  | -0.394<br>(0.160)               | -0.049<br>(0.802)  | -0.020<br>(0.910)  | -0.297<br>(0.303)               | 0.098<br>(0.790)          |
|                                       | “training<br>and grant” | 1.901**<br>(0.034) | 1.693**<br>(0.017) | 1.219**<br>(0.014)              | 0.968*<br>(0.060)  | 0.908**<br>(0.033) | 0.666*<br>(0.072)               | -0.553<br>(0.341)         |
| Savings<br>index                      | “training,<br>no grant” | 0.049<br>(0.909)   | -0.001<br>(0.998)  | 0.727***<br>(0.007)             | -0.065<br>(0.780)  | 0.007<br>(0.975)   | -0.141<br>(0.727)               | -0.868*<br>(0.092)        |
|                                       | “training<br>and grant” | 0.239<br>(0.741)   | 0.279<br>(0.703)   | 0.408<br>(0.437)                | 0.007<br>(0.989)   | -0.134<br>(0.778)  | -0.211<br>(0.568)               | -0.619<br>(0.385)         |
| Observations                          |                         | 541                | 541                | 541                             | 933                | 933                | 933                             | 1,474                     |
| F-stat                                |                         | 3.384              | 3.516              | 13.759                          | 4.293              | 4.726              | 7.648                           |                           |

*Notes:* All regressions control for state fixed effects. P-values are in parenthesis displayed below the estimated coefficients. \* (\*\*, \*\*\*) indicates statistical significance at the ten-percent (five-percent, one-percent) level.

**Table A6.8** – Weighted local average treatment effects of the “training and grant” vs “training, but no grant” on main psychological and behavioral outcomes by gender

|                                                     |            | (1)              | (2)        | (3)                             | (4)              | (5)        | (6)                             | (7)                       |
|-----------------------------------------------------|------------|------------------|------------|---------------------------------|------------------|------------|---------------------------------|---------------------------|
|                                                     |            | LATE for males   |            |                                 | LATE for females |            |                                 | Coeff                     |
|                                                     |            | (no<br>controls) | (controls) | (controls<br>+ geo<br>controls) | (no<br>controls) | (controls) | (controls<br>+ geo<br>controls) | equality<br>(3) vs<br>(6) |
| <i>Main outcomes – psychological and behavioral</i> |            |                  |            |                                 |                  |            |                                 |                           |
| Psychological                                       | “training, | 0.020            | 0.089      | -0.314                          | -0.298           | -0.172     | -0.207                          | 0.107                     |
| wellbeing                                           | no grant”  | (0.958)          | (0.817)    | (0.363)                         | (0.137)          | (0.327)    | (0.443)                         | (0.837)                   |
| index                                               | “training  | 0.220            | 0.059      | 0.151                           | 0.369            | 0.172      | 0.250                           | 0.098                     |
|                                                     | and grant” | (0.713)          | (0.919)    | (0.724)                         | (0.475)          | (0.699)    | (0.482)                         | (0.870)                   |
| Risk index                                          | “training, | -0.449           | -0.460     | 0.286                           | -0.466           | -0.392     | -1.230**                        | -1.517***                 |
|                                                     | no grant”  | (0.266)          | (0.263)    | (0.401)                         | (0.141)          | (0.137)    | (0.025)                         | (0.002)                   |
|                                                     | “training  | 0.608            | 0.645      | 0.046                           | 0.779            | 0.614      | 0.631                           | 0.585                     |
|                                                     | and grant” | (0.381)          | (0.339)    | (0.916)                         | (0.274)          | (0.298)    | (0.151)                         | (0.241)                   |
| Trust index                                         | “training, | -0.171           | -0.299     | -0.247                          | -0.197           | -0.208     | -0.936***                       | -0.689                    |
|                                                     | no grant”  | (0.645)          | (0.419)    | (0.415)                         | (0.315)          | (0.230)    | (0.002)                         | (0.149)                   |
|                                                     | “training  | 0.226            | 0.361      | 0.562                           | -0.143           | -0.205     | -0.010                          | -0.571                    |
|                                                     | and grant” | (0.704)          | (0.522)    | (0.158)                         | (0.734)          | (0.595)    | (0.977)                         | (0.289)                   |
| Crime and                                           | “training, | -0.384           | -0.448     | -0.072                          | -0.647           | -0.695*    | -0.529                          | -0.457                    |
| violence                                            | no grant”  | (0.407)          | (0.361)    | (0.843)                         | (0.121)          | (0.054)    | (0.246)                         | (0.390)                   |
| index                                               | “training  | 0.699            | 0.713      | 0.216                           | 0.760            | 0.790      | 0.208                           | -0.008                    |
|                                                     | and grant” | (0.361)          | (0.325)    | (0.704)                         | (0.338)          | (0.264)    | (0.622)                         | (0.990)                   |
| Migration                                           | “training, | 0.033            | -0.006     | 0.200                           | -0.460*          | -0.452**   | -0.405                          | -0.604                    |
| index                                               | no grant”  | (0.920)          | (0.988)    | (0.634)                         | (0.081)          | (0.038)    | (0.280)                         | (0.337)                   |
|                                                     | “training  | -0.180           | -0.022     | -0.053                          | 0.919            | 0.880      | 0.282                           | 0.335                     |
|                                                     | and grant” | (0.738)          | (0.967)    | (0.899)                         | (0.177)          | (0.129)    | (0.508)                         | (0.579)                   |
| Observations                                        |            | 541              | 541        | 541                             | 933              | 933        | 933                             | 1,474                     |
| F-stat                                              |            | 3.384            | 3.516      | 13.759                          | 4.293            | 4.726      | 7.648                           |                           |

*Notes:* All regressions control for state fixed effects. P-values are in parenthesis displayed below the estimated coefficients. \* (\*\*, \*\*\*) indicates statistical significance at the ten-percent (five-percent, one-percent) level.

**Table A6.9** – Robustness of the intention to treat effects of Table 3 and 4 to different conflict measures

|                               | (1)                 | (2)                 | (3)                 | (4)                 |
|-------------------------------|---------------------|---------------------|---------------------|---------------------|
|                               | UCPD<br>fatalities  | UCPD<br>events      | ACLED<br>fatalities | ACLED<br>events     |
| Employment index              | 0.070<br>(0.221)    | 0.067<br>(0.245)    | 0.068<br>(0.231)    | 0.068<br>(0.236)    |
| Consumption index             | 0.074<br>(0.214)    | 0.079<br>(0.184)    | 0.075<br>(0.204)    | 0.075<br>(0.206)    |
| Savings index                 | 0.268***<br>(0.000) | 0.269***<br>(0.000) | 0.267***<br>(0.000) | 0.268***<br>(0.000) |
| Business skills index         | 0.014<br>(0.796)    | 0.012<br>(0.816)    | 0.016<br>(0.758)    | 0.017<br>(0.748)    |
| Psychological wellbeing index | -0.007<br>(0.882)   | -0.008<br>(0.867)   | -0.005<br>(0.904)   | -0.006<br>(0.902)   |
| Risk index                    | -0.047<br>(0.416)   | -0.051<br>(0.378)   | -0.049<br>(0.403)   | -0.048<br>(0.410)   |
| Trust index                   | -0.119<br>(0.016)   | -0.120<br>(0.015)   | -0.119<br>(0.016)   | -0.118<br>(0.017)   |
| Crime and violence index      | -0.105<br>(0.045)   | -0.103<br>(0.046)   | -0.104<br>(0.045)   | -0.104<br>(0.045)   |
| Migration index               | -0.006<br>(0.911)   | -0.007<br>(0.898)   | -0.005<br>(0.921)   | -0.007<br>(0.889)   |
| Observations                  | 1,474               | 1,474               | 1,474               | 1,474               |

*Notes:* All regression control for gender-state fixed effects, baseline controls and geographic controls. P-values are in parenthesis displayed below the estimated coefficients. \* (\*\*, \*\*\*) indicates statistical significance at the ten-percent (five-percent, one-percent) level.

**Table A6.10** – Robustness of local average treatment effects of Table 9 to different conflict measures

|                                       | (1)                        | (2)                        | (3)                        | (4)                        | (5)                        | (6)                        | (7)                        | (8)                        |
|---------------------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
|                                       | UCPD fatalities            |                            | UCPD events                |                            | ACLED fatalities           |                            | ACLED events               |                            |
|                                       | “Training,<br>no<br>grant” | “Training<br>and<br>grant” | “Training,<br>no<br>grant” | “Training<br>and<br>grant” | “Training,<br>no<br>grant” | “Training<br>and<br>grant” | “Training,<br>no<br>grant” | “Training<br>and<br>grant” |
| <i>Main outcomes – Socio-economic</i> |                            |                            |                            |                            |                            |                            |                            |                            |
| Employment index                      | 0.231<br>(0.325)           | 0.286<br>(0.351)           | 0.186<br>(0.403)           | 0.475<br>(0.277)           | 0.202<br>(0.359)           | 0.296<br>(0.321)           | 0.182<br>(0.416)           | 0.373<br>(0.229)           |
| Consumption index                     | -0.411**<br>(0.014)        | 0.708**<br>(0.036)         | -0.375**<br>(0.026)        | 1.142**<br>(0.015)         | -0.372**<br>(0.015)        | 0.620*<br>(0.058)          | -0.388**<br>(0.014)        | 0.721*<br>(0.064)          |
| Savings index                         | -0.133<br>(0.483)          | 1.094***<br>(0.001)        | -0.178<br>(0.359)          | 1.344***<br>(0.003)        | -0.160<br>(0.385)          | 1.100***<br>(0.001)        | -0.180<br>(0.343)          | 1.175***<br>(0.001)        |
| Business skills index                 | 0.038<br>(0.804)           | -0.029<br>(0.927)          | 0.058<br>(0.693)           | -0.048<br>(0.911)          | 0.073<br>(0.620)           | -0.167<br>(0.566)          | 0.066<br>(0.665)           | -0.236<br>(0.449)          |
| Observations                          | 1,474                      |                            | 1,474                      |                            | 1,474                      |                            | 1,474                      |                            |
| F-stat                                | 14.844                     |                            | 10.510                     |                            | 19.111                     |                            | 16.996                     |                            |

*Notes:* All regression control for gender-state fixed effects, baseline controls and geographic controls. P-values are in parenthesis displayed below the estimated coefficients. \* (\*\*, \*\*\*) indicates statistical significance at the ten-percent (five-percent, one-percent) level.

**Table A6.11** – Robustness of local average treatment effects of Table 10 to different conflict measures

|                                       | (1)                        | (2)                        | (3)                        | (4)                        | (5)                        | (6)                        | (7)                        | (8)                        |
|---------------------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
|                                       | UCPD fatalities            |                            | UCPD events                |                            | ACLED fatalities           |                            | ACLED events               |                            |
|                                       | “Training,<br>no<br>grant” | “Training<br>and<br>grant” | “Training,<br>no<br>grant” | “Training<br>and<br>grant” | “Training,<br>no<br>grant” | “Training<br>and<br>grant” | “Training,<br>no<br>grant” | “Training<br>and<br>grant” |
| <i>Main outcomes – Socio-economic</i> |                            |                            |                            |                            |                            |                            |                            |                            |
| Psychological wellbeing index         | -0.217*<br>(0.076)         | 0.225<br>(0.377)           | -0.229*<br>(0.067)         | 0.432<br>(0.232)           | -0.199*<br>(0.073)         | 0.076<br>(0.738)           | -0.215*<br>(0.059)         | 0.008<br>(0.975)           |
| Risk index                            | -0.256<br>(0.426)          | 0.507<br>(0.233)           | -0.248<br>(0.428)          | 0.913<br>(0.141)           | -0.260<br>(0.401)          | 0.513<br>(0.182)           | -0.277<br>(0.376)          | 0.675<br>(0.123)           |
| Trust index                           | -0.412***<br>(0.006)       | 0.115<br>(0.677)           | -0.321**<br>(0.027)        | 0.271<br>(0.463)           | -0.355***<br>(0.014)       | 0.020<br>(0.941)           | -0.327**<br>(0.028)        | -0.097<br>(0.722)          |
| Crime and violence index              | -0.167<br>(0.472)          | 0.282<br>(0.412)           | -0.255<br>(0.275)          | 0.527<br>(0.260)           | -0.182<br>(0.388)          | 0.109<br>(0.723)           | -0.216<br>(0.323)          | -0.003<br>(0.993)          |
| Migration index                       | -0.126<br>(0.518)          | 0.188<br>(0.539)           | -0.182<br>(0.337)          | 0.124<br>(0.770)           | -0.137<br>(0.455)          | 0.134<br>(0.628)           | -0.176<br>(0.348)          | 0.229<br>(0.464)           |
| Observations                          | 1,474                      |                            | 1,474                      |                            | 1,474                      |                            | 1,474                      |                            |
| F-stat                                | 14.844                     |                            | 10.510                     |                            | 19.111                     |                            | 16.996                     |                            |

*Notes:* All regression control for gender-state fixed effects, baseline controls and geographic controls. P-values are in parenthesis displayed below the estimated coefficients. \* (\*\*, \*\*\*) indicates statistical significance at the ten-percent (five-percent, one-percent) level.

**Table A6.12** – Robustness of local average treatment effects of Table 11 by gender to different conflict measures

|                                       |          | (1)                 | (2)                 | (3)                 | (4)                 | (5)                 | (6)                 | (7)                 | (8)                 |
|---------------------------------------|----------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|                                       |          | UCPD fatalities     |                     | UCPD events         |                     | ACLED fatalities    |                     | ACLED events        |                     |
|                                       |          | male                | female              | male                | female              | male                | female              | male                | female              |
| <i>Main outcomes – Socio-economic</i> |          |                     |                     |                     |                     |                     |                     |                     |                     |
| Employment index                      | no grant | 0.173<br>(0.723)    | 0.488*<br>(0.081)   | 0.167<br>(0.718)    | 0.289<br>(0.238)    | 0.248<br>(0.578)    | 0.288<br>(0.232)    | 0.198<br>(0.654)    | 0.279<br>(0.249)    |
|                                       | grant    | 0.221<br>(0.625)    | 0.369<br>(0.289)    | 0.916<br>(0.134)    | 0.072<br>(0.863)    | -0.063<br>(0.902)   | 0.530*<br>(0.099)   | -0.190<br>(0.728)   | 0.549*<br>(0.089)   |
| Consumption index                     | no grant | -0.139<br>(0.587)   | -0.899**<br>(0.025) | -0.076<br>(0.757)   | -0.856**<br>(0.019) | -0.056<br>(0.811)   | -0.839**<br>(0.013) | -0.061<br>(0.796)   | -0.884**<br>(0.012) |
|                                       | grant    | 0.337<br>(0.431)    | 0.460<br>(0.192)    | 0.623<br>(0.246)    | 0.964**<br>(0.044)  | 0.128<br>(0.781)    | 0.447<br>(0.165)    | 0.103<br>(0.852)    | 0.620*<br>(0.076)   |
| Savings index                         | no grant | -0.407<br>(0.116)   | -0.228<br>(0.402)   | -0.392<br>(0.122)   | -0.399*<br>(0.075)  | -0.343<br>(0.144)   | -0.440**<br>(0.040) | -0.341<br>(0.148)   | -0.479**<br>(0.035) |
|                                       | grant    | 1.212***<br>(0.008) | 0.632*<br>(0.064)   | 1.532**<br>(0.012)  | 0.654<br>(0.169)    | 1.006**<br>(0.022)  | 0.871***<br>(0.008) | 0.769<br>(0.110)    | 1.016***<br>(0.002) |
| Business skills index                 | no grant | 0.681**<br>(0.011)  | -0.109<br>(0.780)   | 0.700***<br>(0.005) | -0.128<br>(0.713)   | 0.762***<br>(0.004) | -0.080<br>(0.814)   | 0.749***<br>(0.005) | -0.080<br>(0.818)   |
|                                       | grant    | 0.427<br>(0.373)    | -0.171<br>(0.641)   | 0.200<br>(0.734)    | 0.085<br>(0.872)    | 0.198<br>(0.708)    | -0.243<br>(0.434)   | 0.082<br>(0.890)    | -0.369<br>(0.269)   |
| Observations                          |          | 541                 | 933                 | 541                 | 933                 | 541                 | 933                 | 541                 | 933                 |
| F-stat                                |          | 15.53               | 8.486               | 13.29               | 7.165               | 14.54               | 13.21               | 12.10               | 13.70               |

*Notes:* All regression control for state fixed effects, baseline controls and geographic controls. P-values are in parenthesis displayed below the estimated coefficients. \* (\*\*, \*\*\*) indicates statistical significance at the ten-percent (five-percent, one-percent) level.

**Table A6.13** – Robustness of local average treatment effects of Table 12 by gender to different conflict measures

|                                       |          | (1)               | (2)                 | (3)               | (4)                 | (5)               | (6)                 | (7)                | (8)                 |
|---------------------------------------|----------|-------------------|---------------------|-------------------|---------------------|-------------------|---------------------|--------------------|---------------------|
|                                       |          | UCPD fatalities   |                     | UCPD events       |                     | ACLED fatalities  |                     | ACLED events       |                     |
|                                       |          | male              | female              | male              | female              | male              | female              | male               | female              |
| <i>Main outcomes – Socio-economic</i> |          |                   |                     |                   |                     |                   |                     |                    |                     |
| Psychological wellbeing index         | no grant | -0.356<br>(0.294) | -0.182<br>(0.478)   | -0.384<br>(0.233) | -0.169<br>(0.481)   | -0.348<br>(0.288) | -0.073<br>(0.752)   | -0.355<br>(0.274)  | -0.095<br>(0.682)   |
|                                       | grant    | 0.201<br>(0.620)  | 0.194<br>(0.560)    | 0.351<br>(0.498)  | 0.355<br>(0.420)    | 0.134<br>(0.752)  | 0.015<br>(0.960)    | 0.055<br>(0.910)   | -0.073<br>(0.813)   |
| Risk index                            | no grant | 0.286<br>(0.401)  | -1.156**<br>(0.025) | 0.184<br>(0.555)  | -0.822*<br>(0.075)  | 0.232<br>(0.479)  | -0.902**<br>(0.039) | 0.201<br>(0.540)   | -0.931**<br>(0.035) |
|                                       | grant    | 0.129<br>(0.755)  | 0.601<br>(0.154)    | 0.378<br>(0.475)  | 0.917<br>(0.142)    | 0.176<br>(0.699)  | 0.465<br>(0.181)    | 0.223<br>(0.676)   | 0.654*<br>(0.091)   |
| Trust                                 | no grant | -0.132<br>(0.747) | -0.521**<br>(0.044) | -0.061<br>(0.876) | -0.376**<br>(0.039) | -0.220<br>(0.574) | -0.321<br>(0.134)   | -0.167<br>(0.670)  | -0.292<br>(0.193)   |
|                                       | grant    | 0.424<br>(0.309)  | 0.028<br>(0.937)    | 0.117<br>(0.817)  | 0.731<br>(0.110)    | 0.792*<br>(0.063) | -0.222<br>(0.508)   | 1.035**<br>(0.027) | -0.390<br>(0.265)   |
| Crime and violence index              | no grant | -0.107<br>(0.763) | -0.419<br>(0.297)   | -0.236<br>(0.479) | -0.508<br>(0.158)   | -0.175<br>(0.610) | -0.323<br>(0.313)   | -0.155<br>(0.647)  | -0.396<br>(0.231)   |
|                                       | grant    | 0.247<br>(0.642)  | 0.200<br>(0.611)    | 0.392<br>(0.501)  | 0.446<br>(0.438)    | 0.323<br>(0.574)  | -0.019<br>(0.950)   | 0.032<br>(0.956)   | -0.115<br>(0.706)   |
| Migration index                       | no grant | 0.232<br>(0.571)  | -0.348<br>(0.326)   | 0.148<br>(0.702)  | -0.390<br>(0.244)   | 0.260<br>(0.509)  | -0.275<br>(0.385)   | 0.218<br>(0.580)   | -0.371<br>(0.256)   |
|                                       | grant    | -0.082<br>(0.836) | 0.324<br>(0.426)    | -0.374<br>(0.469) | 0.492<br>(0.390)    | -0.244<br>(0.564) | 0.261<br>(0.451)    | -0.278<br>(0.572)  | 0.409<br>(0.282)    |
| Observation                           |          | 541               | 933                 | 541               | 933                 | 541               | 933                 | 541                | 933                 |
| F-stat                                |          | 15.53             | 8.486               | 13.29             | 7.165               | 14.54             | 13.21               | 12.10              | 13.70               |

*Notes:* All regression control for state fixed effects, baseline controls and geographic controls. P-values are in parenthesis displayed below the estimated coefficients. \* (\*\*, \*\*\*) indicates statistical significance at the ten-percent (five-percent, one-percent) level.