

Effective, Low-Cost, and Non-Coercive?

An assessment of a test of *Nudging* on Savings Group Behavior in Malawi

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Summary

During 2017 through 2019, World Relief (WR) and Grassroots Finance (GF), two organizations committed to using financial and other services to reduce poverty, launched an experiment in Dedza District of Malawi. The two partners wanted to see if *nudges*, that is, non-coercive, low- or no-cost changes to the ways organizations present information, could lead to desired changes in the program. During a working visit of a representative of GF to Malawi in May 2018, the partners constituted a five person *Design Team* who selected three issues, devised and launched what they hoped would be effective nudges for each, and designed a research plan.

The experiment showed that carefully selected and deliberate modifications to the messages that members and prospective members received correlated with, first, substantial changes in inclusion; second, a remarkable growth in membership; and finally, increased support to Village Agents by group members. It would be difficult to explain these changes as coming from causes other than the nudges. The program was low-cost and produced no known negative outcomes. While long-term effects and replicability will need to be determined, the initial test showed that *nudging* holds promise of being replicated for other economic development programs, and even programs in other sectors.

The first issue the Design Team chose was for the groups be more inclusive. During implementation, that goal expanded from simply having a greater percentage of the most vulnerable people in the program, to the inclusion of all sorts of previously excluded categories, including the very young and very old, those with disabilities, men, and even the better off and the traditional chiefs. WR addressed this goal through a workshop with the field staff to agree on principles of *Inclusive Speaking*, or tweaking the way the program staff spoke about savings groups so that the poorest would feel more welcomed in the program; the tweaks to the way staff spoke included not assuming that everyone has a business, realizing that the very poor are particularly leery of credit, and realizing that mention of the sums shared out by the richest groups could lead very poor people to assume they had no place in the program. WR also filmed and quickly edited a video that included interviews with members from various less traditional groups. This video, and the others mentioned below, were filmed and edited on a tablet, and shown to groups by Village Technical Committees, existing structures designed to provide long-term oversight and guidance to the volunteer Village Agents.

The second issue addressed was high turnover and discouragement among the Village Agents, who support large numbers of groups but receive no material compensation leading to a high turnover. This goal was addressed by a program called *Bless Your VA*, delivered through a video, also filmed and edited quickly in the field, which showed dances, songs and testimonials of two successful groups; during the video, one member mentioned that her group had been so happy with its performance that they had given some money to the VA at the time of their share out.

The third issue was simply increasing outreach. This goal was addressed through a program called *Every Member Bring a Member* (EMBM) which used a workshop and a video to suggest

to members that they could express their ownership and appreciation of the program by inviting friends and family members to join their group at the time of share-out, rather than relying on World Relief to expand the program.

The nudges were carried out in separate zones and WR made efforts to avoid contamination of the nudges into adjacent zones. The partners engaged a consultant to conduct the Poverty Probability Index (PPI) interview with members in two of the test areas before and after the nudging occurred. In addition, the partners compared program membership before and after the nudges, and the consultant conducted qualitative interviews with members in the Bless Your VA test area.

In assessing outcomes, one should take into consideration the sample size and some limitations implicit in the design; nonetheless, there were striking correlations between some of the nudges and the intended outcomes, as well as some unanticipated but positive effects of the test.

EMBM had the most striking correlation with the intended result: membership in the EMBM zone increased by a remarkable 115% from 2017 to 2018, compared to 22% and 21% in the Inclusive Speaking and Bless your VA test areas.

The *Inclusive Speaking* and *EMBM* tests both showed real increases in inclusiveness, measured by changes in the PPI and changes in the percentage of male members, and these quantitative measures were confirmed by focus group discussions. Although EMBM targeted growth in membership rather than increased inclusiveness, the striking success of EMBM in enlarging membership had the collateral benefit of bringing in not only more people, but more different types of people.

In the Bless your VA test there was no reliable pre-test data about how many groups were rewarding their VAs. However, in the qualitative assessment, VA's reported that the practice had become widespread, and every interviewed group that had been shown the video reported having compensated their village agent either in cash or in kind.

An unexpected result of the experiment was the realization that many groups had a rule that all members had to borrow money during a cycle, a practice that was not part of the World Relief policies. As a result, WR cautiously passed the word to the groups that members should not be forced to borrow. This message has been largely though not universally appreciated. Finally, the videos, which showed particularly successful groups, seems to have led other groups to imitate those groups by becoming more orderly and ambitious.

It is difficult to give an exact cost figure for this test because of the large amount of donated time and material; cash expenditures were about twelve thousand dollars, almost exclusively used for international travel, the local consultant's fees for the evaluation component, and lodging and transportation within Malawi.

The approach described here should be of use to agencies which want to tweak their program quickly, at low risk and at low cost. We do not recommend imitating the nudges tested here, as they were highly specific to a particular program and setting; rather, we hope that agencies will take their inspiration from the process that we followed. For that reason, the process is described in some detail below, and references to useful materials are contained in the body and in Annex 1 of this report.

Partners, Objectives and Context

This nudging test was a joint effort of two partners:

World Relief (WR) is a faith-based organization which implements a program called Savings for Life in ten countries around the world. WR starts and trains savings groups to support people's economic, spiritual and community development. As of January 2019, World Relief had formed 1064 savings groups in Dedza district, in the central region of Malawi. Globally, World Relief has formed 13,584 groups with 297,044 members (June, 2019 data).

Grassroots Finance (GF) is an ad hoc group of about a dozen development professionals, savings group specialists, Rotarians and others who are committed to finding the best ways that community-based finance can help achieve the Sustainable Development Goal of ending poverty by 2030. GF looks for initiatives which promise to have low cost and high impact and is supported financially by its members and other individual donors. The Carsey Institute at the University of New Hampshire serves as GF's fiscal agent.¹

The partners shared two related objectives: making Savings Groups more widely available, primarily by transferring more of the responsibility of recruitment of new members to existing groups; and making savings groups more inclusive, by finding ways to expand the membership beyond the most common demographic in savings groups: women, aged 30-50 who have small income-generating activities supplementing a family farm.

The WR Dedza Promotors



Paul Rippey of GF approached WR to propose that principles of behavioral science, and in particular *nudging*,² might be able to produce measurable improvements in outreach and inclusion. “Nudging” refers to changes in the way that choices are presented which are intended to lead, in a non-coercive way, to positive choices, at low or no cost. These objectives

¹ This test was designed primarily by four people: Gift Mwase, Economic Development Coordinator for World Relief in Malawi; Hendrinah Ngulube, Dedza Regional Coordinator; Denview Magalasi, a local consultant who conducted the program evaluation; and Paul Rippey, an international consultant experienced in training and community managed finance. This group is referred to here as the Design Team. In turn, the Design Team is grateful to the ideas and support from Gibson Nkanaunena, Country Director for World Relief Malawi; Courtney O'Connell, Senior Savings for Life Technical Advisor of World Relief; Emily Mugisha, Savings for Life Regional Technical Advisor of World Relief; the World Relief field staff in Dedza Province, particularly the five Promotors or field supervisors, Felix Nthanga, Judith Mdazepa, Bofasi Zomba, Glory Mzuma, and Joel Everson; and the Grassroots Finance members who commented on initial design drafts. This test was made possible by the support of Grassroots Finance, and in turn by the generosity of their private donors.

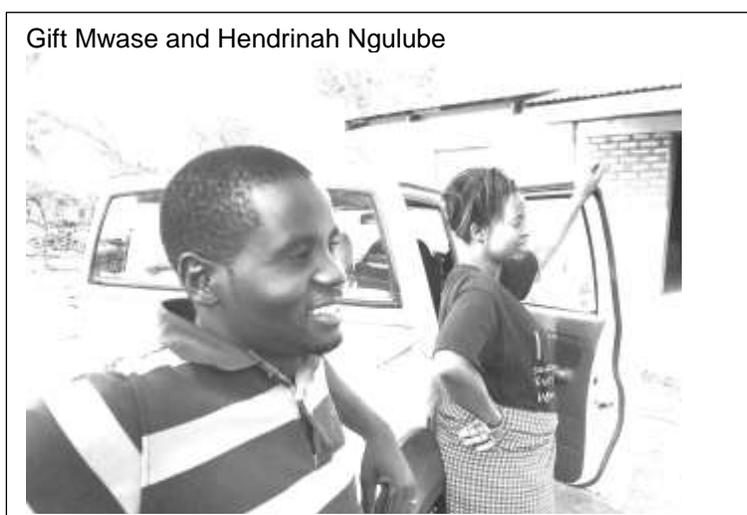
² Nudging is a technique of *behavioral economics*, which in turn is a specialization within *behavioral science*. The concept of nudging is explained in more detail in *Annex 1, Brief Overview of Behavioral Science and Nudging*, below. Readers not familiar with the concept are urged to peruse that annex before reading on.

resonated with World Relief, as their mission includes reducing poverty; WR is committed to making their program available to everyone in the areas where they work, and has strived with only partial success to include the ultra poor. For GF, the Malawi experiment was intended as a test of principles that might have a much larger impact in many other countries.

Grassroots Finance knew that carrying out field tests of nudging would only be possible within a well-managed, successful, transparent project; if those conditions are not met, then it becomes too difficult to manage innovations and measure results. World Relief Malawi has an excellent reputation and was open to participating provided that the test would not inflict financial costs to WR nor unmanageable costs in time; that the test would be designed with the full participation of World Relief staff; and that the innovations would be non-coercive and reversible. The partners agreed to test nudging in WR's project in Dedza, Malawi.

Designing the Project

The initial planning of this activity came out of a number of long-distance discussions and exchanges of multiple drafts of documents among members of the Design Team and Courtney O'Connell. During these calls, the partners agreed on a loose set of objectives, which were progressively refined into the final project design. During this phase, the Design Team deliberately kept all options open until they had a chance to discuss and test ideas in Malawi with the program staff.



On May 27, 2018, immediately after the SG2018 savings group conference in Rwanda, Rippey and Gift Mwase, Economic Development Coordinator for World Relief in Malawi, met in Lilongwe and traveled to Dedza where they worked with other members of the Design Team for ten days, during which they identified the issues they wanted to address, chose nudges that might affect them, designed the work plan in detail, decided how they would assess the outcomes, and launched the activity To

achieve this in the limited time, the Design Team was rigorous about following the steps outlined in the excellent guide, *A Practitioners Guide to Nudging*³, a clear practical book which contains exactly what the title suggests: a systematic way to choose, design and evaluate nudges.

As a first step, they met with the five *Promotors*, the salaried staff who supervise the volunteer Village Agents (VAs); the VAs in turn are the people who train and support savings groups. (The Promotor position would be called "Field Officer" in some other programs.) Even before the project was designed, the team knew it was likely that some of the nudges would address the way that the Promotors and Village Agents spoke about the program, since their manner of speaking was one of the areas that is more or less under WR's control that can be modified at

³ Kim Ly, Nina Mažar, Min Zhao and Dilip Soman. *A Practitioner's Guide To Nudging*. Rotman School of Management, University of Toronto. March 2013.

low cost. Other interventions might qualify as nudges, such as changing meeting procedures or tweaking incentive schemes, but doing so would require modifying procedures and manuals, testing, retraining staff, and so would take longer and cost more than simply tweaking the way field staff speak.

In light of the primacy of speaking, the Design Team began its work with an exercise to begin to determine how the paid and volunteer field staff actually speak. They invited the Promotors, one by one, along with Hendrinah Ngulube, Dedza Regional Coordinator for WR, to a short interview in Chichewa, the local language in which all the field work was conducted. The interviews were held in private so that participants would not be influenced by what others said, and the interviews were recorded for later analysis.

Here and at other times, the team made a disciplined effort to put aside their assumptions of what was being said by their field staff, and instead to carry out actual measurement of this. At several points, WR staff was surprised by the gap between what it assumed field staff were saying, and the actual words they recorded during the tests.

The interviews consisted of four questions, which are given below along with the rationale for asking the question, and an analysis of what the responses revealed.

Question	Rationale	Finding
Suppose you are approached by some ladies in the market, who say to you, "I know you work with savings groups. Will you tell us what they are, and why we should join one?" You have two minutes.	Find out if there were terms being used that would tend to discourage participation of the poorest. As is discussed below, these responses were important because poor people are debt averse, do not see themselves as having businesses, and may be afraid of a group which makes larger investments than they can imagine themselves making.	Five of the six respondents mentioned <i>borrowing</i> as an important aspect of groups, and the same number, five out of six, spoke of saving. It was significant that the Promotors did not seem to prioritize savings over credit. One person spoke of large investments, like buying a cow and buying iron sheets, and one spoke of "businesses". These remarks also were significant, in that, as will be seen, that way of speaking may influence the poorest not to join groups.
Many people in Dedza are savings group members, but not everyone. Who are the people who cannot join savings groups?	Find out what the promotors thought were the constraints to the poor joining groups. If promotors believe that certain people should not be group members, they are unlikely to invite them to join groups.	Three out of six said the very poor could not join. Three out of six mentioned that the disabled were excluded, and the following groups were each mentioned once as not eligible to join groups: the "less motivated"; "those that do not have a vision"; widows; those that belong to other groups, and the "rich". Notably, all of these exclusions were personal opinions of the promotors, not World Relief policy.
What are some of the challenges you face on the job?	Find out if there were issues that might be particularly susceptible to nudging to help Promotors and Village Agents do their jobs better.	Four out of six spoke of the distances they had to travel on bikes; the longest said they need to travel 55 km to reach their farthest group. Three out of six spoke of lack of incentives, either for themselves, or for the village agents, some of whom have 20 or more groups, work almost full time, and receive nothing. One promotor spoke of problems with timely repayments and one complained about members coming late to meetings.

Question	Rationale	Finding
What is it about your job that excites you and motivates you?	As in the previous question, we were looking for possible inflection points.	Five of six offered religious motivations. One spoke of creating relationships and knowing people. One mentioned learning skills that they can use elsewhere. Two shared about their satisfaction in seeing people who were helpless become financially independent. None mentioned material incentives as a motivation, although half of them mentioned that the absence of material incentives made their work a challenge. The answer to the last two questions confirmed an observation from other countries, that volunteer agents generally “don’t work for money, but need money to work.”

The *Practitioners Guide to Nudging* recommends that the design of a project observe the following steps:

First, identify an issue to address. Examples in a savings group program might be “ultra poor are under-represented in the groups” or “village agents complain of being too poor to keep working”.

Second, identify who will be nudged. In this case, possible targets of nudges included the groups themselves, the Village Agents, and the Promoters.

Third, identify the nudge. Again, we assumed that most nudges would address ways of speaking.

Fourth, decide how to put the nudge into practice. It was assumed that the implementation would consist of cascading messages down to the VAs or the groups, through trainings, meetings, video or word of mouth.

Finally, develop a monitoring plan. Since WR and GF share a commitment to poverty inclusion, they chose to use the Poverty Probability Indicator (PPI) tool with groups before and after the intervention in test and control zones. More information is given on the PPI in Annex 2.

Credible field research on the efficacy of development interventions usually involves selecting test and control groups randomly and measuring the differential change in the two groups over time. However, establishing test and control groups within the context of a single project is a challenge, as people in the control groups may feel neglected and jealous of those who receive the intervention; when this occurs, it can lead to contamination of the control groups, as they “steal” the approaches that are being used in the test groups. The short duration of this activity made it easier to control for contamination, but nonetheless, that remained a concern.

Therefore, since there were five promoters each with a distinct zone, the team initially proposed to test five nudges, one in each zone, deciding that for each test, the other zones would serve as the control areas. As the team entered into details of the test, however, the challenge of identifying, testing and monitoring five nudges became quite complex and risked creating a management burden on the WR staff.

Therefore, after four days of discussion, the Design Team settled on three nudges. Each nudge would be tested in an area, with two of the areas made up of two zones. Each area would serve

as a control for the two other test areas. This model lacks the clear distinction between test and control areas that would be ideal, but the research design was both manageable with the resources available, and adequate, the researcher team hoped, to provide real evidence about the outcome of the nudges.

Choice of Nudges and Implementation Approach

While the design team decided in advance that poverty inclusion would be a principal objective of the test, the team also agreed to address other issues related to program quality and outreach that were important to World Relief. The team drew up a list of candidate behaviors that might be targeted by nudges, including such things as members coming late to meetings, or members borrowing more than three times the amount of their savings. After consideration, some of the candidates were thought to be less important, or not easily susceptible to nudging. In the end, three nudges were selected for the test, which were called Inclusive Speaking; Bless Your VA; and Every Member Bring a Member (EMBM). Each is described below in more detail:

Nudge 1: Inclusive Speaking

Grassroots Finance became interested in this activity because it is interested in innovations that will increase the participation of the ultra poor in order to help achieve the first Sustainable Development Goal of “ending poverty in all its forms, everywhere”. World Relief shares the objective of reaching the ultra poor, but has a somewhat larger view of inclusion: WR wants to make savings groups available to everyone, including the ultra poor, but also men, youth, the aged, the disabled, and also those who are better off, and even traditional chiefs. The Design Team agreed to promote the larger vision of including everyone, while keeping a principal emphasis on the ultra poor.

There is no question that WR’s savings groups in Malawi are made up of poor people, and in general Malawi is among the poorest countries in the world with poverty most acute in rural areas. However, there was anecdotal evidence that the very poorest often were reticent to join groups for at least three reasons⁴:

The very poorest are debt averse. For many poor people, the story they would tell about their lives would be mostly a succession of failures: lost employment, crop failure, illness, hunger, natural catastrophes. They do not expect to succeed at things, so they are reluctant to take on the risk of borrowing. When the very poor join savings groups, they may choose to save only and avoid borrowing because saving is usually risk-free; the very poor are aware of the truth of the adage that “no one ever got in trouble because they saved too much”. At the end of a cycle, no matter how little a member has saved, or how difficult it is, the share out is almost always experienced as a “win”, and this can be an important achievement, psychological as well as financial, for someone with a series of failures.

⁴ These ideas are drawn from Rippey’s work with savings group field staff in multiple countries, and were largely validated through discussions at SG2018, particularly with Sylvia Storchi and Marc Bavois. They were expanded and refined through discussions with the World Relief staff in Malawi, which shared numerous insights from their own efforts to increase inclusion of the poorest.

Similarly, even if a very poor person is interested in borrowing, they are unlikely to consider themselves credit-worthy and may find it inconceivable that anyone or any group would lend to them.

As a result, if poor people believe that joining a savings group necessarily involves borrowing, they are less likely to join.

The very poorest often do not see themselves as having “businesses”. They are more likely to consider themselves laborers or workers for others. If they have had productive assets in the past, they may have had to liquidate them to meet immediate needs. Some may be so discouraged as to have abandoned any hope of ever having productive assets, but even if that dream is still alive, it is difficult for them to see themselves as having businesses as long as they are deep in poverty. And yet, savings groups promoters often claim that membership will “help your business”, a promise that may lead the very poor to assume that they do not belong among the other members.

The very poorest manage exceptionally small sums. The amounts of money that the *ultra* poor deal with are very small, even compared with the amounts the *average* poor are able to accumulate. Sometimes, savings group promoters publicize the groups made up of well off people, mentioning how much the total share out was. When the ultra poor hear these amounts, they may not do the mental exercise of dividing the total shared out first by the number of weeks of saving and then by the number of members in a group. The very poor may simply think that they are too poor to ever participate in such a venture.

In brief, the way field staff describes savings groups may present a barrier to the very poor to the extent that they speak of credit, businesses, and larger sums of money, and this is particularly true for the way the Promoters and VAs speak about savings groups, since they are perceived as the authorities on the groups. However, it is not simply the Promoters and Village Agents who may keep the poor away through their inadvertent ways of speaking: group members themselves have learned to talk about the program from the people who trained them, and whatever the field staff say, group members are likely to say also. Just as positive ideas flow down a cascading training structure from management to the field staff, village agents and groups, it is unfortunately possible for unhelpful ideas and ways of speaking to follow the same route.

In light of the above, during the design mission, the Design Team developed a half-day workshop on Poverty Inclusive Speaking; Gift Mwase led the workshop on June 4th 2018, with two promoters and 18 of their village agents participating. A distinctive and positive aspect of this workshop was that Gift raised questions to start discussions which the village agents continued themselves, usually ending with positive conclusions. The non-coercive nature of the workshop mirrored the non-coercive character of nudging.

The workshop began with exercises to draw out the experience, ideas, and preconceptions of the Village Agents. Some of the participants expressed their views about who could not be a member; among the categories cited by the field staff as not potential members were old people, young people, men, the very poor, the very rich, the well-educated, the village agents themselves, and members of other groups.

There were lively debates and some surprises during the discussions:

- Concerning the participation of men, some village agents felt that it was easier to talk to women about groups, and therefore they don't introduce the idea of groups to men; after discussion, all the participants agreed that they should approach men.
- One village agent said he had no objection to men participating, but in a role play, he repeatedly referred to Savings Groups as "these women's groups", a phrase that participants agreed was not likely to encourage men to join.
- There was a debate about youth participating in groups. One group of agents felt that young people should concentrate on their education, rather than save money; in response, others pointed out that many young people are financially active even though they are in school, and some have lost their parents and are the breadwinners. That argument was convincing to the other participants.
- Some VAs said it was hard for better off villagers to join because they do not see other people like themselves in groups, and they are uninterested in the small amounts that are normally saved. In response, the design team decided that the VAs should mobilize enough well-to-do people in an area to form a group for "the rich".
- In one surprising case, an agent said, "We can't have blind people in groups, because the manual says that everything needs to be visible to all the members, and if someone can't see, things won't be visible to them." After discussion, the agent accepted that it was not the intention of the program to exclude blind people.
- About the participation of Village Agents themselves in groups, some said they were too busy, which is a reasonable claim as some of the village agents essentially work full-time at their volunteer jobs. Another said he did not want to join because his wife was already in a group. There is no problem here, in that Village Agents are welcome in groups, and like everyone else their participation is voluntary.
- And finally, concerning the crucial question of inclusion of the very poor, some said that the very poor do not have an income and so are unable to save; other agents responded that at the very least the poor can do piece work and make some money. That discussion moved some of the Village Agents to be more open to the participation of the very poor.

After hours of discussion, the workshop proposed four principles that the field staff thought would make the program more welcoming to the very poor:

Members don't need to borrow. Field staff agreed that any time agents speak of borrowing, they should stress that taking a loan is always optional and no one is forced to borrow.

Some non-conventional group members from the Inclusive Speaking video



Don't assume that everyone has a "business". While it is acceptable to say, "The savings group can help your business", the speaker should always add, "if you have one". The Saving for Life program offers modules that help members start businesses, but these can be introduced non-coercively once people have made the decision to join the group. The purpose of this principle is not to discourage income-earning activities; rather, it is to make groups more welcome to people who do not have a business.

Don't anchor conversations on large amounts or large purchases. As an example, if a group member or a VA brags about members who bought iron sheets for their roofs, they should also share about, for instance, someone else who bought plastic shoes for the first time. If they talk about someone who bought a cow, they should also talk about someone who bought a chicken. The participants easily grasped the concept of anchoring.

Return to our goal of inclusion. Anyone speaking about savings groups should remind the listeners that *everyone can be a member*.

The workshop included an opportunity to practice these guidelines in small group exercises. Finally, Mwase explained the details of the test, talked about how results would be measured, and urged participants not to contaminate the control areas by telling other VAs about these guidelines.

During the workshop, Rippey and Mwase realized that the Village Agents and Promoters did not often speak of the "very poor". When questioned about this, they replied that for them, everyone was poor, everyone wanted more or less the same things to make their lives better, and some people simply were further along in obtaining those things. For many of the staff, the difference between someone with a straw roof and someone with an iron roof was not seen as an indicator of poverty as much as simply the fact that the person with the iron roof happened at that moment to be further along the path of obtaining the things that everyone wanted; the other person might acquire an iron roof or other things that they both wanted later. As a result of this insight, WR started to describe the Inclusive Speaking initiative in terms of the inclusion of certain *groups*, rather than in terms of including *people at certain levels of poverty*.

World Relief designed the workshop for Inclusive Speaking to produce an immediate change in VA behavior, and there is some evidence that this happened. However, World Relief feared that the messages might diminish with time, so they produced a video showing group members from groups outside the typical population. In addition to music and dancing, the video had interviews with members from groups that are not normally considered candidates to be Saving For Life members. The video featured interviews with two very old women members, one in her eighties; a village chief; a youth group; a men's group; and a member with a severe limp. The video respected the non-coercive requirement in that the members only talked about their own experience, no World Relief staff were seen or heard in the video, and no one at any time tells group members what to do⁵.

The inclusive speaking videos, and other videos described below, were shown by SFL Technical Committees, which are part of the church structure that is World Relief's platform for working within the community. The Technical Committees used six rented tablets plus two that

⁵ The Inclusive Speaking video can be seen at <https://vimeo.com/293976549>.

had been contributed to World Relief. There is no accurate record of how many groups saw the videos, as there is some anecdotal evidence that they were copied and shown more widely than had been intended. Videos are very easy to copy and transmit by WhatsApp, and once a single copy has escaped outside the Technical Committees, there is nothing to stop it from going viral, and this may have happened.

World Relief developed a protocol for showing the videos: The Technical Committee members would arrive in a village on the day groups were meeting and invite the members to break into groups of about six people to watch the video. World Relief instructed the Technical Committees not to give any further information about the video. Each viewing group would walk off to a quiet spot with one committee member, who would seat the group so everyone could see clearly, and then would show the video. At the end, the committee member would ask a single question: “What did you see in that video”? and would then note the answers to that question.

Small Group watching Inclusive Speaking Video



Nudge 2: Bless Your Village Agent

World Relief relies on a cadre of Village Agents to form and support their savings groups. These mostly young men and women have a caseload that is large by international standards: forty VAs have formed 750 groups in two years, but as is predictable, the performance varies substantially between the most and least productive agents, and the most productive are managing 40 or more groups at a time. World Relief offer the members a program that includes more than simply SG functioning: it also includes spiritual and business training components, and these additional elements add to the work of the VAs.

World Relief gives the VAs t-shirts and bicycles when they reach a certain level of productivity, but they are not otherwise remunerated. For some of the VAs, their work becomes a full-time job. They are generally highly motivated to do their work, and when asked about their motivation, they mention service to the community, learning new skills, and religious service as the things that they like about their work. However, some of them feel they don't have the resources to continue. The work of Village Agent becomes costly to them, both because of the inevitable expenses of airtime to communicate with their groups and sometimes transportation to reach them, and because they must forego other opportunities to earn money. For World Relief, losing VAs is costly to the program, as it breaks continuity with the groups, and creates a burden on the Promoters of recruiting and training replacements.

WR recognizes that most of the VAs need some compensation for their work, but has no budget to pay them, nor does it want to move to a fee-for-service model, believing that doing so would change the spirit and motivations of the program in ways that would be inimical to its success. World Relief thinks a solution might lay in groups voluntarily deciding to help their VAs

financially, as some groups already do. Therefore, the design mission chose “blessing”, or voluntarily assisting, the VA as one of the behaviors to nudge members toward.

The Design Team thought it was particularly important to remain non-coercive around the issue of blessing the VAs; unlike the other nudges, this one could be interpreted as World Relief changing policies to require a payment for services that had previously been free. Since groups are always interested in seeing what other groups are doing, it was decided to produce a video which would simply mention blessing the VA, without recommending the practice. It was further decided to have no mention of World Relief, to help make it clear that the program was not changing requirements in any way. Therefore, the design team went out on two days with a hand-held iPad as their camera to film two groups and conduct about two dozen member interviews.

The film team did not instruct the members in what to say, nor were they asked leading questions. Therefore, it was a bit of luck that one member, while describing the history of her group, mentioned that at share out they were so happy that they decided to give a bit of money to the agent. In editing the video, no effort was made to highlight the comment about blessing the VA. It was simply interspersed with shots of a group meeting, singing and dancing, and other testimonials by members⁶. That discussion takes less than 30 seconds, out of a video that lasts eight minutes.

The Design Team intended to show this video in one zone, Mwenje. While the video was shown primarily to group members, because it contained views of successful groups, testimonials and much singing and dancing, many community members were interested and watched it also. As in the case of the Inclusive Speaking video, members were asked the single question, “What did you see in the video?” Many simply noted that the groups in the video were particularly orderly and followed procedures well, or that they all wore attractive uniforms and danced and sang well. Others picked up other nuances from what the members shared, and many noted the remark of the member who shared about how her group had blessed their VA, which was of course the key element we wanted people to notice. Surprisingly, some of the groups said that they were glad to see that element, because they had been secretly giving small sums to thank their VA, but did not know if they were permitted to do so.

Nudge 3: Every Member Bring a Member

The final nudge is an idea borrowed from Plan Niger (explained in more detail in Annex 1). It consisted of a campaign called “Every Member Bring a Member” (EMBM). This message was initially delivered in the form of a single short video⁷.

The video opens with a group dancing and singing, cuts to a WR staff person, Hendrinah Ngulube, speaking to the camera, and closes with the group dancing and singing again. Hendrinah talks about the program’s progress and the 750 groups that have been formed, and says that World Relief would like to make savings groups available to everyone, whether rich or poor, young or old, able bodied or disabled, and finally calls on the members to help achieve that goal.

⁶ The Bless Your Village Agent video can be seen at <https://vimeo.com/273571114>.

⁷ The EMBM video can be seen at <https://vimeo.com/273759089>.

The song and dance came from a visit to one of the groups that appeared in the other video. The earlier group was particularly musical, and towards the end of the visit the design team invited the group to write and perform a song about “every member bring a member”. With a bit of help from Hendrinah and Gift, they displayed remarkable creativity by developing and performing the song in about twenty minutes.

Since the volunteer members of the Technical Committees had limited time that they could devote to visiting groups, and since World Relief had prioritized showing the other videos first, before EMBM, the Committees started showing the video to groups late in 2018, and there was some risk that the video would reach groups so late in their cycle that it might be too late to expect members to “bring a member”, so that the video would have limited impact. Therefore, World Relief supplemented the video with a workshop, held on September 27, 2018, to help publicize the campaign. WR invited two groups to attend, all the village agents and field coordinators in the zones where that element was being carried out, as well as program staff and local authorities and notables. Some Village Agents presented a sketch about inviting a poor family that people assumed could not join because they were too poor; when the village agent approached them, the woman joined a group, and of course everyone was happy. Also, World Relief shared the concept of splitting a group in two if it became too large because of inviting new members.

Summary of the nudges and research design

	Issue to be addressed	Who was nudged?	Nudge	Zones	Implementation	Monitoring & Evaluation
1	Some of the poorest and most vulnerable are excluded, or exclude themselves.	VAs mostly, but message should also pass on to group members.	Inclusive Speaking	Kaphuka Kasina	Hold an Inclusive Speaking workshop for promoters and Village Agents, and make video showing atypical members.	Change in average PPI Score Changes in average age of members; this metric was added after the test.
2	The lack of stipends threatens the VAs ability to continue training groups.	Group members who will be sharing out in the next six months	Bless Your Village Agent.	Mwenj	Make and show video with comment of a group member whose group blessed their VA at share out.	Change in the percent of groups that bless their VAs; note that we had hoped that we could interview enough VAs to capture retroactive information about this; however, logistics, time, memory and personnel changes made this impractical. Note changes in attitude about blessing

	Issue to be addressed	Who was nudged?	Nudge	Zones	Implementation	Monitoring & Evaluation
3	Program growth is limited by program resources; desire to empower members to take responsibility for program growth. Corollary issue: inclusion of traditionally excluded groups.	Group members	Every Member Bring a Member (EMBM).	Thete Chimbiya	Launch an Every Member Bring a Member Campaign to encourage every member in groups that are sharing out in the next six months to invite a non-member to consider joining a savings group. Idea transmitted through a short video and a workshop.	Change in membership. Changes in average PPI score of members.

Findings and Implications

Scope and Limitations

The research team was aware of many of the traps that impact studies fall into and worked to avoid the most egregious ones. In particular, to avoid cherry picking any particular findings, we declared what variables we would be measuring before the test and have reported on them; any exceptions have been noted. We have not created ex post categories to squeeze outcomes on either side of arbitrary breakpoints, and we have cited other factors besides the inputs that we judge could have led to the results.

The project made a major investment, relative to its total budget, in measuring outcomes, and as much as possible worked to minimize reporting and confirmation bias, which could easily occur at several levels of a study such as this one. In absolute terms, the research budget was quite small and necessarily involved compromises compared to the more robust study that would have been desirable. In particular, the research suffered from a limited sample size, which makes it difficult to control for noise from exogenous influences. The *Bless Your VA* nudge lacked quantified baseline data. Finally, since the test group for each nudge also served as a control group for the two other nudges, it was difficult in some cases to prevent contamination and isolate the cause of changes.

While stressing the importance of keeping those caveats in mind, we find that the data showed some clear and remarkable correlations between nudges and outcomes that would be difficult to attribute to causes other than the nudges.

Inclusive Speaking

The conceptualization of the Inclusive Speaking nudge evolved during the test, beginning with the very first workshop with Village Agents. The objective of Inclusive Speaking shifted from exclusively increasing the participation of the poorest, to one of making *everyone* welcome in the program, including various groups that were previously excluded, including the very old, youth, the disabled, men, and traditional chiefs. The Design Team thought that recasting Inclusive Speaking in those terms would still promote the objective of having more of the very poor, because the notion of *everyone* is as inclusive as possible.

In the actual implementation, Inclusive Speaking was delivered through two channels, with different though complementary messages: a workshop focusing on avoiding language which excluded the poor, and a video, which showed different sorts of members including those from traditionally excluded groups.

The principle metric for measuring success was intended to be the relative change in average PPI scores of members in the different zones, comparing existing members at the baseline to a mix of existing and new members at the endline. However, because of the broader conception of the project, we also looked at the data on male participation which is already collected routinely by WR, and at a series of interviews and focus group discussions conducted by Denview Magalasi. It would have been desirable to note changes in membership by condition of able-bodiedness, but WR does not collect that information. WR does collect information on age, but at the time of data analysis, we only had changes in averages, and the average ages are unhelpfully pulled in both directions as both youth and more aged people were encouraged to join groups.

It is important to note the limits of using the PPI in a test such as this. The PPI is made up of only ten questions, chosen to produce accurate estimations about the probability that members of a population will be below various poverty lines. The ten questions are extracted from national household surveys, and chosen to mirror as well as possible the results of the much larger battery of poverty questions that are included in household surveys. Because it only has ten questions, the PPI requires large numbers of participants to produce accurate information. During the baseline study, the PPI was administered to 642 group members, and 580 were interviewed during the endline. These were enough, we believe, to be suggestive without being conclusive.

In all zones studied, the average PPI score decreased from 2018 to 2019 indicating that SFL members were more likely to be poor in 2019 compared to 2018. We are not aware of any exogenous factor that would drive the PPI score downward, so we assume that the decrease is due to new members joining the groups who are somewhat less well off than existing members. This is consistent with the widespread belief about savings groups that the better off members join first, followed by less well-off members.

After the launch of project activities, the Research Team speculated that *Inclusive Speaking* and *EMBM* might have similar results, for the two reasons given in the preceding paragraph, and because both were designed to invite more people into the groups. The changes in membership will be discussed below in the section on *EMBM*. At this point, we note that both *Inclusive Speaking* and *EMBM* showed notable increases in inclusiveness, measured by changes in the PPI, and changes in the percentage of male members. In the *Inclusive Speaking* test area, the average PPI raw scores were 34% lower in the endline than in the baseline, and in the *EMBM*, the PPI scores decreased by 30%. By contrast, the PPI scores only decreased by 18% in the Bless your VA area. To reiterate, both *Inclusive Speaking* and *EMBM* led to more members

joining, and had similar scores, both were much higher than Bless Your VA, which did not target membership or inclusion in any way.

The most likely hypothesis is that the decrease in PPI scores of new members in the Inclusive Speaking and EMBM zones is due to both nudges in those zones and to a general tendency of poorer people to join later, while the much smaller decrease in Bless your VA zone was only due to the tendency of poorer people to join later.

Just as the *Inclusive Speaking* campaign had two parallel messages, it also worked at two levels. Village Agents were the target audience of the workshop, and many of them shared about changes in their own attitudes. One VA reported on a new openness to letting the poorer members participate on their own terms: *“groups have the chance to select the share. This was encouraging them that those people who thought do not have enough should have their own group, they should have a chance to speak their mind regarding the way they can value their shares so they have the chance to choose the amount of shares they can afford.”* Others spoke about the recent inclusion of other types of members: *“If we can compare the way we were and how we thought at the beginning, we thought that it is just women who are supposed to be in the groups. But because of changing the way we speak, some of the groups here now have both male and female members.”* *“And when you see the faces of those who have started recently you see that there are elderly.”*

Other VAs talked about the inclusion of youth, pastors, the well-off merchant class, and even traditional chiefs: *“Chiefs wanted to participate in that gathering but they said it would not look good for them to mix with the other people. So we just enlightened them and they understood that they will have their own group.”* In fact, the chiefs did form their own group, and it was reported that when word of this spread it added to the prestige of being in a savings group.

A Village Agent in Kaphuka talked about a mechanism through which increased participation of the poorest occurred: *“...that video you gave us really encouraged people to the point that some of the people who had refused to join the groups because they said that they have nothing, no money, they are the ones who are in the groups right now, and there are more members joining, exceeding the recommended limit of 25 members. And it is difficult to say No to them. So now some groups have 30 members. It is really working well.”*

Bless Your VA

In the Bless your VA test, there were no reliable pre-test data about how many groups were rewarding their VAs before the test. Project management believes that the practice was rare and interviews with the VAs revealed that it was widely, though incorrectly, assumed that giving gifts to the VA was not allowed.

During the test, it was revealed that some group members assumed the practice of giving small gifts to their VA was forbidden, and some groups had blessed their VA in secret, which makes it particularly difficult to know what was the baseline condition. However, the evaluation did reveal that blessing the VA had become quite widespread: a bit more than half of the interviewed groups that saw the video (44 out of 86 groups) supported their VA at share out, giving them various items like money, soap, and cloth wrappers or *kitinge*.

The blessings came to the Village Agents in a variety of forms, consistent with the nature of the rural economy. One happy VA enumerated all that he had received from five separate groups, which included a pail, soap, sugar, rice, and about four dollars in local currency.

Every Member Bring a Member

The obvious metric chosen to measure the success of Every Member Bring a Member was change in membership, and as World Relief collects membership information in the normal course of project administration, this was a reliable and easily accessible source of data. In addition, we asked the consultant who collected the PPI data to conduct focus groups and interviews in the EMBM zone to gauge the reception of the nudge by village agents and groups, which provided the testimonies from members and VAs in the following sections.

EMBM showed the most striking correlation with the intended result: membership in the EMBM zone increased 115% from 2017 to 2018, compared to 22% and 21% in the Inclusive Speaking and Bless Your VA test areas respectively. While that difference in growth seems like compelling evidence that the nudge was successful, it must be noted that the zones where EMBM were tested, Thete and Chimbiya, started 2018 with significantly fewer members than the other zones, and therefore had more “headroom” for expansion, and this could have contributed to the growth. In any case, something happened in the EMBM zones leading to expansion which was remarkable both in absolute terms and relative to the control areas.⁸

Use of Videos

The design team did not originally intend for this program to be a test of the effectiveness of video, and in fact, there is already a great deal of evidence⁹, particularly from India, of the effectiveness of video training. Nonetheless, the use of video in this project bears some exposition.

First, the videos were filmed and edited on an iPad using inexpensive software, by someone with some experience in filming and editing home videos, but who is not remotely an expert. More remarkable, the films were shot and edited usually in no more than 48 hours total time. Nonetheless, the reader who follows the links included above to watch the videos will hopefully agree that the quality is completely adequate for showing in groups on inexpensive tablets, and hopefully the reader who does not speak Chichewa will still be able to understand why participants in the test found the videos engaging.

Second, World Relief devised an appropriate means of using the videos, first by enlisting the Technical Committees to show the videos, and second by giving all groups a one-question questionnaire after they had seen the videos. People retain messages better when they talk about them; however, WR did not want the Technical Committees to ask leading questions, or

⁸ Unfortunately, the Promoters in both of the EMBM zones left and were replaced during the period of the test. These disruptive changes delayed reporting on the change in total membership, and hence delayed this report. Also, the limited research budget allowed only a very limited number of visits to the field by the research consultant, and for various reasons made it impossible to carry out the plan to compare the changes in membership in groups that saw the video, and those that did not.

⁹ Digital Green is a prominent leader in low-cost decentralized video production, and claims very impressive decreases in cost, and increases in effectiveness, of video training as compared to traditional methods. (<https://www.digitalgreen.org>).

to interpret the videos for the members. Therefore, after showing the videos, the Technical Committees asked a single question to the groups: "What did you see in the video"? They let the members talk about everything they had seen and recorded the responses.

This turned out to be a useful exercise. In the case of the Bless Your VA video, members noticed that the groups which were shown in the videos had particularly attractive uniforms, ran very disciplined meetings, and were able to share very clearly about the value that they had acquired since participating in the group. One VA talked about the impression the videos left on groups, with perhaps surprising details: "The difference in the groups on the video is obvious. Look at hygiene. So many groups are doing so well in terms of hygiene like the way they dress or bath. They were admiring those people with a smooth skin (in the video), and now most groups have changed as a result."

Of course, many noted the intended message given by a single member who talked about blessing their VA. But, the other unintentional messages were noticed and commented on at least as often, and the program staff speculated that showing exemplary groups raised the prestige of the entire program, and there is early purely anecdotal evidence that this happened.

The promoters and agents were excited with the prospective outcome of showing the videos to as many of their groups as possible. One VA complained, "People were fighting for the video. So many people wanted the video but because of time, since the videos had to be shown to other groups, we had to accept that."

Unanticipated result

During the Inclusive Speaking workshop with two of the Promotors and their Village Agents, WR discovered that many of the groups, and some of the Village Agents, thought that savings group members were required to borrow, and during that workshop, Gift Mwase assured the Village Agents that this was not the case. The Promotors and Village Agents dutifully carried this information back to their groups.

To the surprise of program management, this produced a bit of clamor within the groups. Some groups in fact not only required that all members had to borrow from time to time, but that there be no loan fund money left in the cashbox at the end of meetings. Some members were pleased to be relieved of the burden and risk of taking unnecessary loans, but others pushed back, insisting that mandatory borrowing was necessary to make the loan fund grow, or that leaving cash in the box created a security risk.

For the moment, World Relief has stuck to the principle of No Mandatory Borrowing, and this does not seem to have created large problems in the groups, in part because there is often a lot of demand for credit anyway. Overall, they are getting more positive than negative feedback from the groups. However, the program is keeping an eye on this situation, both knowing that it does not have the power to force any particular behavior on a reluctant group, and that, possibly, the groups that practiced mandatory borrowing may have settled on a solution that, all things considered, works better for them. One should not casually dismiss mandatory borrowing, because it has shown up in many groups, in many programs, in many countries.

The field team also reported that an unexpected collateral benefit of the videos was that attendance at meetings among groups that saw the videos increased. It should be noted that the videos contained scenes of particularly enthusiastic, well-managed and successful groups,

and while increasing attendance was not an objective of the video, it also is not a surprising outcome.

Finally, there is anecdotal evidence that the 'Bless Your VA video' not only led to the VAs receiving more incentives from the groups, but their status may also have been raised; one VA reported, "[the video showed] that a village agent is an important person.... It was not happening in the past."

Value for Money

One of the claims made for *nudging*, in the literature and in the title of this report, is that it is low cost, so it is appropriate to ask what the cost of this experiment was.

Grassroots Finance contributed about twelve thousand dollars to this effort (\$11,984). The research team, the local consultant excepted, donated their time: the WR team found ways to fit the additional work into their ongoing program, and Rippey did not take a salary for his work on this.

Because this was an experimental program and Grassroots Finance and World Relief thought it was important to have a robust evaluation of results, roughly two-thirds of the twelve thousand went into the costs of monitoring and evaluation and travel, and the expenses of bringing Rippey to Malawi twice. The remaining third of the cost – approximately four thousand dollars – was the cost of bringing staff in for workshops to design the program, travel to film the videos, two workshops, renting tablets, and car rental and fuel to disseminate the messages.

Is this really a low-cost intervention then? During the test period:

1. The program grew by 6,035 members in the EMBM and Inclusive Speaking zones, and the differential performance of these zones and the Bless Your VA zone strongly suggest that much of the growth was due to the nudges.
2. There was strong evidence - though no hard data - that the support to Village Agents increased substantially.
3. Diversity, measured by inclusion of people with lower PPI scores, increased in the zones where we expected to see this outcome.
4. There were other unintended positive consequences, including the reduction in the practice of mandatory borrowing, greater field staff satisfaction, and apparent emulation of high performing groups due to the videos.

We think the case could be made that any one of these results might by itself have been an adequately beneficial outcome for the investment, and that all of them together, in the absence of any apparent negative outcomes, made the effort a remarkably good investment. We will leave it to the reader to consider how they might emulate it.

Annexes

Annex 1: Brief Overview of Behavioral Science and Nudging

Behavioral science, and its sub-category behavioral economics, are trendy retellings and formalizations of things that we have known intuitively for a long time. “We”, though, doesn’t always include economists, who have tried to replace intuitions about why people act as they do with the idea that humans are rational value optimizers who make their decisions along those lines. In fact, the behavioralists remind us, humans are deeply irrational, act against their own best interests repeatedly, and respond to stimuli that, on examination, do not seem to maximize value. Behavioral science is an effort to turn this bad news into good news, to recognize and examine this apparent irrationality, and use it to make the world a better place¹⁰.

A popular unit of behavioral science is the *nudge*, and *nudging* is often used as a shortcut term for the whole discipline. This isn’t quite right – behavioral science goes way beyond nudging. But we have limited the research Malawi to nudging.

Nudging is *changing the way people are presented with choices so that their behavior alters*. It is not forbidding choices, or compelling choices. For instance, putting in place a rule that all savings groups had to have members from a certain economic class would simply be a new rule, and not a nudge. People must choose freely after being nudged.

Nudges are ideally easy to put in place and either low-cost or no-cost. A massive advertising campaign to include the poor in savings groups would not be a nudge because, while it might be effective and non-coercive, it would be expensive.

Nudges should have results that disproportionately influence behavior. Ideally, a small effort should produce a much larger result.

The concept of nudging will be clearer if we look at a couple of examples from other programs. Neither of these was directly related to inclusion of the poorest, although it will be argued later that at least one of them is indirectly related in a strong way.

PLAN Niger

In 2012, the PLAN International program in Niger found itself halfway through a program of forming savings groups for young people. The program was quite strong, forming groups of high quality, but the program manager, Moustafa Ibrahim, found himself substantially behind the membership targets that had been agreed to with their donor. He was worried that he would have to ask for additional funding to open up a new zone, which would require a vehicle, a zonal manager, support staff for the manager, field officers, and motorcycles, plus numerous training sessions and control visits. There was no way he could do all that out of his existing budget.

Instead, he had a good idea that is a classic example of nudging, although at the time no one used that term. He noted that his average group size was only about 18 people. His targets

¹⁰ Some might object here and say, “Yes, but what if people use behavioral science to sell more cars, junk food and gadgets – things that *don’t* make the world a better place?” But to that objection, all one can say is, *Sorry, too late*. The advertisers have been using behavioral science for decades, very successfully.

were based on 20 person groups, and he and his staff agreed that even groups larger than 20 were quite manageable. He realized that another path to making his targets was through increasing group size. So PLAN launched a campaign called “Every member bring a member”. (“*Chaque membre un membre*”) Moustafa simply sent the message down his management chain to the groups, urging every member to go out and share about savings groups with other people in their villages, and invite them to join.

The result was impressive. Of course, not every member brought a member, but a remarkable number did, and in a short period the program experienced about a thirty percent organic growth in membership of existing groups.

Every member bring a member is an excellent example of a nudge. It was non-coercive, and nearly no cost (contrasting dramatically with the alternative expansion plan which would have cost tens of thousands of dollars). And a small effort produced large results. The astute reader will already have noticed that the test in Malawi used this idea from Niger, with apparent great success, and our colleague Moustafa Ibrahim should receive at least equal credit for the success in the Malawi experiment.

REGIS-ER Burkina Faso

This USAID project has developed savings groups in Burkina Faso and Niger with very little outside technical assistance, and as a result has come up with some innovations that are worthy of consideration by other countries. Among them, in Burkina Faso, the program manager, Emmanuel Zombre, found that some of the terms that were traditionally used within savings groups sat uneasily with some of the members. In particular, the use of the term *interest* was troublesome not only to Moslem group members, but also with members of other religions or no religion. Interest, with its capitalist overtones, sits uneasily with the collectivist mentality of groups.

So, ingeniously, the money one paid for using other people’s money was renamed the *thank you payment*. Traditionally, people from the same village help each other in many ways, and while they do so voluntarily, both the helper and the person helped are aware that a sort of debt has been created. In the traditional society, after a particularly generous act, the recipient thanks the person who has aided them and gives them a chicken or a bag of sugar as a token. The program called on this tradition, calling the money paid to the group for taking a loan the *Thank You payment*. It was a way of saying to the group, “Thank you. You trusted me and you let me use your money for a while.”

Interestingly, World Relief reported that another program in the more Moslem areas of northern Malawi has adopted a similar strategy. While the effect of this change has not been measured so it is not known if it produced a disproportionate effect, it fits the other characteristics of a nudge, being low-cost and non-coercive.

Other experience

A number of other programs have tried different strategies to increase participation of the poorest, notably CRS. Some of the things CRS has done to increase participation of the poorest would qualify as nudges, and others not so much. CRS will soon be publishing the results of their efforts, so we will let them speak for themselves, simply adding a word of thanks to Marc

Bavois of CRS, who generously shared their experience with me (Paul Rippey). This initiative has profited greatly from their ideas and encouragement.

Annex 2: What the PPI means, in pictures

The Poverty Probability Index, PPI, consists of ten multiple-choice questions, and each possible answer adds a different number of points to the household's score. The highest possible total score for the ten questions is 100, the lowest 0. The questions are carefully chosen and weighted so that the household total corresponds to a specific probability that the family is living above or below different poverty lines.



The PPI score is an abstraction of the real lives of real people, and we thought it would be of interest to illustrate what some of the scores are based on, so we asked Tinesi Samson, a member of a savings group in a village in Dedza, who had just participated in the PPI interview, to show us her home, which she graciously did.

One of the PPI questions asks about the construction materials of the walls of her house. Tinesi got a four for "mud bricks" - higher than a zero for "mud or grass" but less than the top score of 8 for "Compacted earth, burnt bricks, concrete, wood, iron sheets or other."

Tinesi lacks bed, mosquito net or table; however, her small house has a good stock of maize, arguably much more important.



She got zeros for each of these three questions: “Do any members of the household sleep under a bed net to protect against mosquitos?”, “Does the household own any tables?”, and “Does the household own any beds?” There is a separate sleeping area, not very visible in the photo, but Tinesy and her family sleep on the mud floor (zero points for the floor, which is made of “Smoothed mud or sand”.)

Top marks for “Traditional latrine with roof, only for household members”



She also got zero points for her roof, which is “Grass, plastic sheeting or others”. Outside, Tinesy has a “Traditional latrine with roof, only for household members”, which earned her a “6”, the top score in that category.

The other PPI indicators are not shown in the picture: she has six family members (4 points), is not able to read or write (0 points), and she lights her house with a “Battery/dry cell (torch), candles or electricity” - she has a flashlight - earning her the top score of 13 in that category.

Her total raw score of 28 gives her household an 88.5% chance of living below the poverty line of \$1.25 per person per day, which seems about right.