OUTSIDE FUNDING OF COMMUNITY ORGANIZATIONS:
BENEFITING OR DISPLACING THE POOR?

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## ABSTRACT

In response to the widespread consensus on the importance of social capital, and to concerns about the scarcity of institutions giving voice to disadvantaged groups, some donors have begun programs designed to strengthen indigenous community organizations. We use a prospective, randomized evaluation to examine a development program explicitly targeted at building social capital among rural women's groups in western Kenya. The program increased turnover among group members. It increased entry into group membership and leadership by younger, more educated women, by women employed in the formal sector, and by men. The analysis suggests that providing development assistance to indigenous community organizations of the disadvantaged may change the very characteristics of these organizations that made them attractive to outside funders.

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*"What is it…that the poor reply when asked what might make the greatest difference to their lives? They say, organizations of their own so that they may negotiate with government, with traders, and with nongovernmental organizations. Direct assistance through community driven programs so that they may shape their own destinies. Local ownership of funds, so that they may put a stop to corruption."*

James Wolfensohn, former World Bank president (Wolfensohn, 1999).

## 1.        Introduction

The poor and disadvantaged have lower rates of participation in civic groups, religious groups, and community associations (Almond and Verba, 1965; Verba, Schlozman and Brady, 1995; Ayala, 2000). When the disadvantaged do participate in civic life, their organizations are often weak: Walzer (2002) writes that "It is a general rule of civil society that its strongest members get stronger. The weaker and poorer members are either unable to organize at all … or they form groups that reflect their weakness and poverty."

Many argue that this limits the political influence and economic development of the disadvantaged. For example, Banfield (1958) documents the low levels of civic engagement in southern Italy and argues that this is an important reason for the area's underdevelopment. Putnam (1993, 2000) argues that independent community organizations with horizontal ties among members enhance civic capacity and participation; build trust, norms of cooperation, and support for democracy; and provide templates for cooperation that ultimately lead to improved governance.

Scholars of democratic theory have long been concerned with the potential for associations to equalize representation and participation in civic life (Fung, 2003) and hold states accountable to citizens (Diamond, 1999).  Some seek to identify policy interventions that can encourage a politics of association among the disadvantaged (Cohen and Rogers, 1995). Outside assistance to organizations of the disadvantaged could potentially help empower these groups, for example by providing a means for articulating interests to policy-makers (Warren, M.E. 2001).

Efforts to build civic and economic participation of the poor by funding local civic and community organizations range from components of the Johnson-era War on Poverty to more recent U.S.-government supported efforts to build civic organizations internationally through the National Democratic Institute and the International Republican Institute. As the quote above from former World Bank President James Wolfensohn reflects, international development donors increasingly seek to

strengthen associations of the poor and disadvantaged in particular. The World Bank increased the share of its projects with a community-based or community-driven component from two percent in 1989 to 25 percent in 2003 (World Bank, 2005), and other aid donors have moved in the same direction (Ottaway and Carothers, 2000; Smillie and Helmich, 1999).

However, external support could also potentially influence who participates in associations, how they are governed, and the autonomy of such groups. In the U.S. context, Skocpol (2003, 2004a, 2004b) has argued that reliance on donor funding helps produce professionally-run organizations that do not engage members in active participation in group activities and have fewer lower-status members. Piven and Cloward (1979) argue that elite participation in membership organizations of the poor can divert these organizations from their original purposes. Tripp (2000), Mansuri and Rao (2004), and Platteau and Gaspart (2002) have voiced concerns that outside funding can lead to elite capture of organizations of the poor in developing countries. Other authors suggest that outside funding benefits more advantaged groups (Henderson, 2002; Sundstrom, 2005), reduces the role of the disadvantaged within these groups (Garforth, 1994; Howes, 1997), or shifts the membership and leadership of such groups away from the grassroots and towards more professional elites (Igoe, 2003). Payne (1995) shows how the success of the southern civil rights movement changed the rewards available to participants, attracting higher status individuals who saw opportunities for prestige and political influence.

The causal relationship between social disadvantage and participation in civic life is difficult to pin down, as is the impact of outside funding on participation and group strength. In part this is because much of the available evidence is based on single case studies. It is difficult to know whether these represent typical outcomes or merely salient ones. Beyond this, however, is a deeper problem in social science of assessing causation based on observed correlations in the data. Low participation of the disadvantaged in civic life is consistent with a variety of different causal mechanisms, with different policy implications. For example, low participation in civic associations could inhibit economic development, as argued by Banfield. Alternatively, civic groups may represent the class interests of more advantaged members and systematically exclude the disadvantaged. A third factor, such as psychological traits like shyness could impede both civic engagement and socio-economic advancement, even in the absence of a direct causal link between socioeconomic status and civic participation. Similarly,

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education could provide social skills that promote participation in community associations (Glaeser, Ponzetto and Shleifer, 2006; Verba et al, 1995) and could also independently spur economic success, leading to a correlation between participation in community associations and economic status. As Walzer (2002) suggests, the poor will simply have less to contribute to their organizations, and this may make their organizations weaker. Disentangling the importance of these mechanisms empirically is difficult, yet it is important for understanding the potential impact of policy.

In particular, assessing the impact of external assistance on the strength of civic groups and on the role of the disadvantaged is particularly difficult based purely on correlations in non-experimental data. A correlation between groups' organizational strength and external assistance could arise because stronger groups attracted more funding, because funding led to stronger organizations, or because some third factor, like able leadership, led to both organizational strength and to increased external funding. A correlation between whether groups receive external assistance and the socioeconomic status of their membership and leadership could arise because external assistance attracts members and leaders of higher socioeconomic status, because people of higher socioeconomic status are more successful at securing outside funding, or because able leaders are likely to both attract funding and to rise in social status. Adding control variables will not solve the causal inference problem if some potential confounding factors remain unmeasured.

Studies that take advantage of random assignment to treatment and comparison groups can help address these causality issues by eliminating systematic differences in potential confounding factors between treatment and comparison groups. While such studies are common in some fields, such as medicine, they are still relatively rare in political science. We take advantage of a unique opportunity to assess causal impact that is created by random phase-in of a program designed to strengthen women's associations in rural Kenya. Since the nongovernmental organization (NGO) that implemented the program had limited funding and administrative resources, the program was phased in gradually, and the order of phase in was determined randomly. By comparing groups that were supported early with those that had not yet been funded, we estimate the impact of the program and shed light on one reason why the poor and disadvantaged are less likely to participate in civic organizations and why their organizations tend to be weak.

We find that members of groups receiving funds reported more satisfaction with group leadership, but there is little evidence that objective measures of group activity improved. Increases in agricultural output by program groups were worth far less than the inputs provided by the NGO. Meeting participation rates, assistance to members, and assistance to other community projects did not increase.

Outside funding did change the nature of group membership and leadership, however. It encouraged the entry into groups of younger, more educated women and women employed in the formal sector, as well as people from outside the village. New entrants, men, and educated women assumed key leadership positions. The program led to a two-thirds increase in the exit rate of older women, the most disadvantaged demographic group, and a doubling of the rate at which members left groups due to conflict. Amounts paid by new entrants and leaders to enter the groups were far less than the per capita value of the assistance provided by the NGO or of group assets built up by existing members. Those who left the groups were not compensated for the substantial investments in time and reinvested profits they had made over the years in building up the groups.

The empirical results suggest that, at least in some circumstances, external assistance designed to strengthen local community associations of the disadvantaged may actually weaken the role of the disadvantaged in these groups. A model based on the results suggests a more general reason why the disadvantaged often have weak organizations and low participation rates in civic organizations. Membership in organizations is continually turning over, and organizations that can deliver more to their members may generally attract stronger applicants. If those of higher socioeconomic status can typically contribute more to organizations, then when existing members of organizations decide which applicants to admit, they will typically prefer to admit those of higher socioeconomic status. We show that if organizations differ in the extent to which they can deliver benefits to members, the steady state of a dynamic process of turnover among members of groups will involve people of higher socioeconomic status joining the strongest organizations and those of lower socioeconomic status either joining weaker organizations or not joining organizations at all.

The rest of the paper proceeds as follows: Sections 2 and 3 provide background on women's groups in Kenya and the project we examine. Section 4 discusses the project's impact on group agricultural activities and finances and Section 5 discusses its impact on group cohesion and community

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interaction. Sections 6, 7 and 8 show how the program affected group membership, leadership and exit from groups. Section 9 builds a stylized model of group dynamics based on the data, and argues that it can help explain weak organizations and low participation rates among the disadvantaged.

## 2. Women's Groups and Associational Life in Kenya

Women's groups in Kenya exemplify the type of horizontal organization emphasized by Putnam (1993). Their roots are truly indigenous, going back to a pre-colonial tradition of community self–help groups, such as funeral and rotating labor clubs. In Kenya, they are probably the most widespread form of secular community organization that does not rely on support from the government or foreign donors. In densely settled agricultural areas of Kenya, it is estimated that half of all adult women belong to a women's group (Hammerslough, 1994 as cited in Udvardy, 1998). Such groups are widespread in much of sub-Saharan Africa. These associations typically provide social, economic, and insurance benefits for their members, as well as providing public benefit for individuals outside the group.

First, rural women's groups provide a form of social connection and civic participation for women, a group that is not only disadvantaged within Kenyan society, but also particularly in danger of social isolation. Traditionally much of Kenyan social structure revolves around kinship and clan structure. Strict exogamy rules prevent marriages among relatives and residence is patrilocal, so at marriage women typically move away from their home and kinship networks, leaving them with a limited social network outside of that provided by their husband's family. Thus, women's groups may be particularly important for widows and older women, who are particularly disadvantaged in rural African communities because of reduced support from kin and weaker access to community resources (Miguel, 2005; Aboderin, 2004; Abt, 1997).

Women's groups also provide economic benefits to their members through income generating activities, typically agricultural, and rotating savings and credit associations, in which members meet on a regular schedule and contribute to a pot which is given in turn to each member. They also provide members with assistance in emergencies and sponsor labor exchange among members. Many of these activities have a social insurance component. For example, rotating savings and credit associations typically allow members with special needs to receive funds earlier than their allotted turn, or allow

members with financial difficulties to miss a contribution, with the understanding that this member will receive a lower payout when it is her turn to receive funds. Most groups distribute the proceeds of agricultural production equally among all members, independent of actual labor input, providing implicit social insurance to sick or elderly members who may not be able to work with the same capacity as other members. Of the reported total value of crops harvested prior to the program we study, 55 percent was retained by the group for collective use and 38 percent was distributed to members, either in-kind or as cash (7 percent was given away). Because such a large share of group proceeds are reinvested in the group as a whole, membership in the group to some extent acts as an investment program, as women who have spent some time in the group are in effect building up equity in the group, and are repaid when they receive a share of a group output later, when they are older and weaker.[4]

The benefits of women's groups extend beyond their members. Many women's groups contribute to community fundraising events (*harambees*) that are important for raising local funds for public goods such as schools and health clinics in Kenya (Miguel and Gugerty, 2005; Barkan and Holmquist, 1989; Thomas, 1987). Women's groups in Kenya have been critical in campaigns to reduce deaths from the brewing of illegal liquor and in the prevention of violence against women (United Nations, 2003; Kahler, 2000). Anderson and Baland (2002) argue that women's rotating savings and credit associations in Kenya improve women's bargaining position within the household and Thomas (1988) shows how participation in women's associations increases household access to productive resources in Kenya. Even women who do not join groups could potentially benefit from a stronger bargaining position within the household as a result of having the option to join these groups (Agarwal, 2001). Tripp (1994) and House-Midamba (1996) argue that women's associations and voluntary associations in East Africa help strengthen women's civic participation through organizing for the economic and social improvement of their members and by creating horizontal ties that transcend ethnic divisions.

In addition to providing output for members and externalities for non-members, groups sometimes create private benefits for leaders. For example, one group leader in our sample, a primary

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[4] Contributions to social insurance are a public good within the groups and are not fully contractible, so these groups are potentially subject to collective action problems as Olson (1965) would suggest. Most groups have elaborate systems of fines for members who miss meetings or fail to contribute financially and retain the threat of expulsion for members who do not contribute sufficiently.

school teacher in her early thirties, was selected by the government to be an assistant chief, the first female to ever hold such a position in her area. Her management of the women's group was cited as a key factor in her appointment. The extent of private benefits is likely to vary with the person's characteristics: older women with little education are unlikely to have much hope of a career in politics or a position with an NGO. The educated, the young and the male may have relatively more career benefits from group membership or leadership.

The groups we study are small, locally initiated self-help groups that had been in existence for an average of 6.7 years and had an average of 21 members prior to the funding project. Almost all the women in the women's groups have been married, and thus have moved away from their kinship networks. Older women are somewhat overrepresented in the sample, relative to their proportion in the Kenyan adult population. Five of the eighty groups in our sample are composed entirely of widows.[5]

The women's groups have a horizontal, democratic structure. Group leaders are unpaid, rather than professionals, and key group decisions are made by consensus or by a vote of members. Leaders are typically selected by members, either through a voting procedure or by discussion and consensus. The executive officials - chair, secretary and treasurer - organize and chair meetings, set meeting agendas, and represent the group at community events. In addition to the executive officials, groups typically have a large number of other group-specific minor officials such as the *Mama Safi* who ensures group members are neatly dressed at meetings. In our sample, on average 31 percent of the group members hold some kind of official position.

The groups are not elite dominated. Women with secondary education are disproportionately likely to be executive officials, but the majority of executive officials have no secondary education. Women's groups in Kenya typically include some male members (Srujuna, 1996), and in our sample, roughly 20 percent of group members are male, 73 percent of whom were husbands of female members. However, men are generally excluded from holding key executive leadership positions. At baseline, 97 percent of executive officials in our sample were women.

The small, rural women's groups we study are largely autonomous of the formal political structure. Most receive no outside funding or government support. Some authors argue that politicians

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[5] Three of the widows groups received assistance and two did not.

and the government have tried to replace the horizontal ties among women's group members with vertical patron-client relationships with the state, for example through the *Maendeleo Wa Wanawake* (Progress for Women) organization, established in the colonial period and later made part of the KANU (Kenya African National Union) ruling political party. Groups are sometimes visited by Community Development Assistants (CDAs) employed by the Ministry of Culture and Social Services who are supposed to provide organizational support. However, in the area we study rural women's groups do not seem to be co-opted by the political structure prior to the funding program we study, consistent with Kabira and Nzioki (1993), Ahlberg (1988) and Thomas (1988).

Subsidies to such groups may be justified due to the external civic benefits that groups provide or because free-rider problems mean there will be an undersupply of group production and benefits (Olson, 1965). However, free riding also implies that the impact of external support may be attenuated to the extent that external support crowds out members' contributions, or that members undersupply complementary inputs or divert externally supplied group resources to individuals.

Outside assistance could also lead to changes in group membership through a variety of mechanisms. If outside assistance and human capital are complements in producing group output, then a shift toward more educated membership may lead groups to recruit these members and group output will increase as a consequence. However, outside assistance could also lead to a shift toward higher socioeconomic status membership even if this has no positive consequences for group output. This would be the case either if external assistance disproportionately raises private benefits of group membership for those of higher socioeconomic status or if external assistance simply raises the value of group membership across the board but those of higher socioeconomic status are better placed to take advantage of the resulting opportunities.

The distribution of benefits from changes in group membership will depend on the system of property rights. If existing group members hold enforceable individual property rights in membership, those exiting the group would have to be fully compensated for their share of the group's capital stock and for the expected discounted future value of membership, including the value of any assistance expected to be provided to the group. New entrants would have to compensate existing members equivalently for joining.

However, group members may not have fully enforceable individual property rights in membership, and thus may not be fully compensated for letting others join or for leaving the group. It may difficult to exclude high status people who want to join. Moreover, membership rights are not individual, but collective. If higher status people want to join a group, it may well be in the interest of the majority of existing members to let them in. Since forcing members out relieves others of the obligation to provide social insurance or share group output with those who exit, the majority may have an incentive to vote to push out the old, weak, and sick, especially if they can find sufficiently attractive replacements.

In the rest of the paper we first describe the women's group project, and then test the extent to which external assistance a) led to a strengthening of groups and expansion in their activity and b) led to changes in group membership and leadership.

## 3. The Women's Group Project

The projects we evaluate took place in two poor, densely populated rural districts in western Kenya, Busia and Teso. The local economy is based primarily on small–scale rain fed farming for subsistence and local market trade. Humans are the principal source of farm power, limiting the area that each family can cultivate. For these reasons, the area has a relatively large amount of fallow land, with estimates in Busia District that as little as 55 percent of arable land is under cultivation (Bishop-Sambrook, 2003). According to our data, 74 percent of the land used by groups for agricultural activities is owned by a group member and was made available by the member for group use without charge. In the other 26 percent of cases, groups rented land, either in exchange for cash, labor, or a portion of the harvest. It is rare for groups to own land communally. Agricultural production is typically undertaken through organized sessions where members meet at the group plot to work.

*3.A Group Selection and Phase-in, Data Collection*

A Dutch nongovernmental organization, International Child Support (ICS), designed and conducted the project, in consultation with women's groups and the local Ministry of Agriculture office. ICS identified 100 operational women's groups in the area it served through lists provided by the Ministry of Culture and Social Services and interviews with local Community Development Assistants. Of these 100 groups, 80 met eligibility criteria for the project, which required that the groups met

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regularly and were already engaged in group–based agricultural activity.[6] Some wealthier groups located in the district capital were excluded from eligibility. Groups are typically located some distance apart and we find no evidence that groups are in competition for the same potential members.

Once the 80 eligible groups were selected, the groups were stratified by administrative division, ordered alphabetically, and every other group was selected to receive training and inputs; we call these the program groups. At the time of recruitment, the remaining forty groups were notified that they would not be funded immediately but that the NGO would try to fund them in the future; we refer to these as the comparison groups. Although no guarantees were given, comparison groups presumably felt future funding was likely given the NGO's track record in the area. In fact, the comparison groups were funded two years after the start of the original program.[7] To the extent that members and potential members of comparison groups expected to receive assistance in the future, they may have begun to change their behavior during the first year of the project. This would likely bias estimates of program impact toward zero, making it more difficult to identify program effects. As discussed below, we nonetheless find significant differences between program and treatment groups in a relatively small sample.

Three sets of surveys were administered to the groups. A baseline survey was conducted at the start of the project, before the randomization was done or funding provided; the data from this survey are referred to throughout as pre-intervention data. Fourteen months later a second survey was administered to assess the impact of the assistance. Follow–up surveys were administered six months after that. These data comprise the post-intervention data. Both the program and the comparison groups were given a small set of tools at the time of each survey to compensate them for their time. These were worth about $3 per member. In general, treatment groups did not differ systematically from program groups prior to the start of the project, as shown in Table 1.

*3.B Project Description*

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[6] Njonjo (1984) finds that 90 percent of women's group activities in Kenya were agriculturally based.
[7] Many groups had some continuing relationship with the NGO after the project. 38 of the original 80 groups subsequently received irrigation equipment with a value of $130 or participated in an agricultural project with a value of $340 after the end of this project. Program and comparison groups were equally likely to benefit from this subsequent funding, which was determined largely by the amount of land groups had to cultivate and the suitability of the land for pump-based irrigation.

According to project documents, the two goals of the project were to strengthen women's community organizations and to improve agricultural practices and output (Webo, 1997). The organizational strengthening component consisted of two days of training for three group leaders at a seminar in the district capital. A Kenyan specialist in the training of community organizations conducted the training, which emphasized leadership skills, group management techniques, book–keeping, and project administration using a standard curriculum for the area. Funds for travel, food, and accommodation were provided to the trainees. The agricultural component included both inputs and training. Each group received a set of agricultural inputs that included hoes and other implements, certified seeds for six crops, fertilizer, and pesticide/herbicide sprayers. These were intended for use on collective group farms but were stored at the homes of individual members since few groups own any collective property. In addition to inputs, three executive officials and one additional member were funded to travel to the district capital for five days of classroom instruction and experiential training on agricultural practices and husbandry at the farmer training center of the Ministry of Agriculture.

The value of assistance was quite large relative to per capita income in the area. The World Bank reports per capita GDP in Kenya in 2000 was $328; estimates of per capita GDP in Busia district are substantially lower.[8] The project spent $674 per group or an average of $34 per member. Half the total value of assistance was accounted for by agricultural inputs, 16 percent by organizational and group management training, and 34 percent by agricultural training. Roughly half the value of the agricultural inputs (or 22 percent of total assistance) was comprised of seeds, fertilizer and pesticides; the other half of the inputs were agricultural implements and tools.

Women and long-standing group members were particularly likely to be chosen for the organizational and management training sessions, but there is some evidence that the agricultural training session boosted the role of men and younger women in groups. Program groups were invited to send their three executive officials for agricultural training as well as one additional member of their choice. In practice, executive officials did not fully utilize the training opportunities in many groups and groups were allowed to send substitutes. More educated members were statistically more likely to be sent for training, and since younger women and men had more education, the non-executive members sent for

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[8] The Busia District office, for example, estimates per capita income in the district in 2002 was $170 (Bishop-Sandbrook, 2003).

agricultural training were more likely to be young and male than the typical group member. (Men and younger women were significantly more likely to attend training sessions, but this effect disappears controlling for education.) Trainees tended to increase their status in the group. After 18 months of program participation, 24 percent of the non-executives who had attended agricultural training became executives. Seven non-member men were sent for training and subsequently became group members. No non-member women received agricultural training.

## 5. Agricultural and Financial Outcomes

To the extent that group members face a choice of whether to use resources in group or individual production and that land, labor, and capital are complements in agricultural production, donations of capital to groups should be expected to lead to increased member contributions of land and labor to group production, but to crowd out member contributions of capital and perhaps even lead to diversion of donated capital out of groups to individual production.[9] Empirically, we find that external assistance led to much less than proportional increases in use of complementary inputs in group production and to increases in group production that were much less than the value of inputs provided. There is some evidence of diversion of inputs to individual production, particularly to leaders' farms.

Recall that the program provided more than $674 in assistance to program groups, of which $337 was direct agricultural inputs. The inputs provided were sufficient to cultivate at least 3.5 acres of land. Since the typical comparison group had $243 in assets before the project started, this represents an increase in capital stock of almost 140 percent. This increase in the capital of the group, however, led to much smaller increases in land and labor input. We present data for both agricultural seasons, the main season known as the "long rains" in which grains and the main staple crops are planted and a shorter,

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[9] To see this, note that economic efficiency would require that the productivity of resources inside and outside the group be equalized at the margin. In the arguably more plausible case in which there is free riding within groups, the marginal product of inputs in group production will be greater than in home production. Even in this case, however, the ratio of the marginal products of land, labor, and capital between group and home production should still be equal, or individuals could increase both their home production and group production by reducing one type of input to the group and increasing another in its stead.

A donation of capital to a group will lower the marginal product of capital in group relative to home production and raise the marginal product of land and labor in the group relative to that in private production. Restoring equality in the ratios of group and home marginal product between various inputs will require some combination of reduced member contributions to capital, diversion of capital away from the group, and increased land and labor provision by members. If the production function is homogenous, then land, labor, and capital in the group should all increase in proportion.

secondary season known as the "short rains." Treatment groups planted about half an acre more each season than comparison groups (Table 2). This represents a 70 percent increase over the average planting of comparison groups. The increase in planting was only 30 percent of the 3.5 additional acres that could have been cultivated by program groups using the additional inputs provided by the project.

The typical program group member spent an additional nine hours working on group agricultural production during the main agricultural season (column 2) but only a statistically insignificant two additional hours in the subsequent short rains (column 5), representing overall a 30 percent increase over the labor inputs of the average comparison group member. Point estimates suggest that during the long rains output was $18 higher in program groups than in comparison groups (column 3) and only $4.20 higher in the short rains (column 6), but neither figure is statistically significant. These point estimates of the increase in agriculture output are only three percent of the total value of agricultural inputs and training received. Even if one neglects inputs such as training and tools that should yield a return over the long-run, the increase in the harvest was only six percent of the value of inputs such as seeds and fertilizer which should have paid off within one season, suggesting that if any significant share of the inputs indeed went towards group production the return was spectacularly negative.

The disappointing increase in output could be due to inadequate increases in complementary inputs supplied by the members or diminishing returns in group activities. Another explanation for the limited increase in land and labor input as well as overall output on group land is diversion of inputs to members for individual use. Surveys conducted after the project ended indicated that 70 percent of the program groups reported distributing project seeds to members for use on their individual farms, although only 29 percent gave seeds to every member. Fifty-eight percent of program groups report that project fertilizer was distributed to individual group members. The actual numbers may be higher if groups were reluctant to report this to enumerators. Of course group members may be acting rationally in diverting inputs to individual use, and indeed this may even be collectively rational as well. However, if the aim of the program is to boost the activity of local community associations, it is important to recognize that a considerable share of funds provided may not go to group activities.

Estimates of the extent of diversion are necessarily speculative, but if one assumes a rough proportionality in input levels, it is possible to hazard a guess. Overall the program generated a 30

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percent increase in labor input over the comparison group levels and a 70 percent increase in land inputs. If the proportionate increase in capital used in group production was halfway in between the increase in land and labor inputs, at 50 percent, this would mean that about $175 of the agricultural inputs provided to the groups went towards group cultivation and $161 was converted to individual use. The extra labor supplied by group members was worth about $1.60 per member or $32 per group, while the rental value of the additional land supplied was worth about $25 per group. This would imply that when the NGO gave $337 in direct agricultural inputs, about $175 + $32 + $25 = $ 232, or just under 70 percent of the direct agricultural resources provided went into group production, with the remainder either crowding out member contributions or being diverted.

The limited data available on individual cultivation indicate that some diversion may have taken place, but the average group member (as opposed to executives) did not benefit significantly from any diversion. Data are available for individual cultivation on home farms during the short rains period following the intervention for those crops for which the NGO provided seeds. Individuals in program groups cultivated slightly less acreage of these crops than did individuals in comparison groups (Table 2, column 7). Non-executives in program groups were also no more likely to use fertilizer on their home crops than were individuals in comparison groups (column 8). Among executive officials, however, those in program groups were 12 percent more likely to use fertilizer than executives in comparison groups (column 9). Overall, the program does not appear to be an effective tool for increasing group output, as measured by collective agricultural production. We examine next whether the program affected other indicators of group strength.

## 6. Group Strength and Community Interaction

Group members report more positive subjective assessments on the quality of group leadership to the NGO. However, we find no evidence that the program improved objectively measurable indicators of group capacity. Members of program groups did not participate more in non–agricultural group activities than did comparison groups during the project, nor did the internal solidarity of program groups improve as indicated by objective measures of group activity. There is no evidence that program groups created

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more positive externalities than did comparison in terms of attendance or contributions at public *harambee* fundraisings.

*6.A Group Strength*

Individual members in program groups are more likely to report that group leadership had improved in the program period (Table 3, Panel A, column 1).[10] The reported improvement in leadership could reflect actual improvements in group functioning, bias due to more general positive feelings about the groups after receiving massive external support, or a desire to report positively to donors, since the training explicitly addressed quality of leadership and the running of meetings. As we discuss below, people of higher status assumed leadership positions following the program, and it is possible that members are more likely to view high status leaders positively, even if their objective performance is worse (see Duflo and Topalova, 2004).

We therefore examine objective as well as subjective measures of performance and group cohesion. The change in attendance rates at general meetings from pre- to post-intervention is not significantly different in groups that received funding (Table 3, Panel A, column 3). The point estimate is actually lower. Program groups do not meet more often than do comparison groups (column 4). Program groups do not visit a member's home to give emergency assistance at higher rates than comparison groups, nor do they support members with higher amounts of cash assistance (columns 5 and 6) or through donations of food or labor (not reported). Program groups do not meet more frequently for their rotating savings and credit association (rosca) activities than comparison groups (column 7) nor do they have higher monthly contributions (column 8).

*6.B Community Interaction*

One rationale for assisting community groups is that these groups create positive externalities. However, there is little evidence that the groups funded through the project did more to assist their neighbors. Program groups neither have greater participation in *harambee* community fundraising events (Table 3, Panel B, column 1), nor do they give higher amounts at such fundraisers on average (column 2).

One reason that the funding NGO wanted to provide assistance to women's groups was to stimulate the growth of networks and the diffusion of information on agriculture and nutrition among the

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[10] Older members are less likely to report improvements in program groups, but the coefficient is not significant.

community, particularly among women. There is no evidence, however, that groups receiving funding had higher levels of contact with other women's groups: program groups did not receive any more visits from other women's groups than did comparison groups (not reported).

NGO assistance crowded out assistance from other sources for program groups, although the resources crowded out were trivial relative to those provided by the funding program. Program groups received lower levels of cash grants during the post-intervention period than did comparison groups (column 3) although the average level of grants to comparison groups is only $11 per group. Likewise, program groups on average received fewer in-kind donations (column 4) than did comparison groups in the post-intervention period, but the average number of in-kind donations in comparison groups was only 0.13 per group during this 14 month period.

The most marked impact of funding on community interaction is the increase in visits from government officials. Program groups received 75 percent more visits from agriculture and health extension agents than did comparison groups, representing 2.5 visits more than comparison groups in the year following the intervention (column 6). One hypothesis is that treatment groups required more advice from extension agents, since they were given access to new technologies. However, program groups also received nearly twice as many visits from local government officials (chiefs, elders, and district officials) than did comparison groups. Program groups received on average 5.5 more visits from local government officials (column 7). This suggests a move towards more vertical, patron-client relationships between government officials and groups.

### 7. Entry into Group Membership and Leadership

The program increased the participation of advantaged individuals in groups, changing the very characteristics of the groups that made them attractive to funders in the first place. New members in program groups were better educated and more likely to have formal sector income than their counterparts in comparison groups. More new entrants, men, and women with secondary education assumed leadership positions in program groups. Payments by new entrants and leaders were small relative to the extent to which their entrance diluted the value of group assets for existing members, and

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since there is no evidence of improved group functioning, it seems likely that this new entry harmed the original members.

*7.A Entrance into Group Membership*

A regression of the number of new entrants on an indicator variable for receiving assistance shows that program groups have twice as many new entrants as comparison groups. The average program group had almost four new entrants over the eighteen months between surveys (Table 4, column 1); the average comparison group had two. (As discussed in Section 8, exit also increased, thus no significant increases in program group membership are seen, consistent with there being some optimal group size.)

New entrants in program groups were roughly twice as likely to have formal sector income, have secondary education, and be from outside the village as their counterparts in comparison groups. The proportion of new entrants with formal sector income was 11 percentage points higher in program groups than in comparison groups; this result is not quite significant at the five percent level (Table 4, column 2). Female entrants were 12 percentage points more likely to have a secondary education in program groups than in comparison groups, and the difference is significant at the ten percent level (column 4). New entrants were 27 percentage points more likely to be from outside the village (column 5). The proportion of new entrants who were married is 4 percentage points lower in program groups (column 6).

The increase in entry came immediately after the project started, suggesting both that new members joined in time to take advantage of the material inputs available under the program, and that new entry was not solely due to the agricultural training. During the first six months of the project, when organizational training was conducted but before inputs were distributed, 52 people joined program groups, while 15 joined comparison groups. During the next four months, when agricultural training and input provision took place, 50 people joined program groups and 17 joined comparison groups. In the final four months, 25 people joined program groups and 25 also joined comparison groups. In the first 6 months of the project, new entrants in program groups had significantly higher years of education than in program groups at the 5 percent level; this difference between program and comparison declines over the next 8 months of the project (not reported). Program groups also had a higher proportion of new entrants with formal sector income in the first 5 months of the project than did comparison groups, significant at the 10 percent level. This difference also declines over the next eight months.

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*7.B Entry into group leadership*

There is some evidence program groups were more likely to change leadership. During the

project period at least one new executive official entered leadership in 53 percent of program groups as

compared to 35 percent of comparison groups (Table 5, Panel A, column 1). This difference is not quite

significant at the ten percent level. Program groups are 12 percentage points more likely to have an

executive official who was not originally a member at the start of the period (column 2). Men and better-

educated women were more likely to take on leadership roles in program groups. The change in the

proportion of men who hold executive positions is four percent greater in program groups than in

comparison groups (column 3). The change in the proportion of female executives with secondary

education is four percent greater in program groups than in comparison groups (column 5), significant at

the ten percent level. Since at baseline only about 3 percent of executive officials were male, and less

than 40 percent of females had secondary education, these are large changes over a short period.

*7.C Payments for Membership and Officership*

There is some evidence that people paid more to join program groups and become officers in

these groups, but these payments were very small relative to the $34 per member value of the program,

suggesting either that the assistance was not valued by members or that those joining the assisted groups

may have received substantial rents. Although more people paid to join program groups than comparison

groups (Table 5, panel B, column 1), point estimates suggest program groups collected only $2.74 more

in entrance fees per new entrant than did comparison groups (column 2), and this difference is not

statistically significant.

There is limited evidence that new entrants in program groups paid to get into groups through

non-cash means, such as donating land to be used for group cultivation. Four new members in program

groups provided land for the group to cultivate; none did in comparison groups. This difference is

significant at the 5 percent level (column 3). Of these four members, two received compensation of

roughly $9 for the use of their land. The average amount of land donated by these four group members

for cultivation was 0.32 acres; the rental value of 0.32 acres of average quality land in the area was

roughly $8.30.  The uncompensated value of donated land is therefore $15; this has a value of $0.10 per

new entrant to program group. If groups collected $2.74 in cash plus $0.10 in rental value of land per

new entrant on average, the total average payment of new entrants was roughly $2.84, less than 10 percent of the $34 per member in benefits provided through the program and an even smaller fraction of the per member value of total group assets, which also include the $11 per member assets groups had accumulated on their own before the NGO program began. One interpretation of this is that new entrants appropriated approximately $45 - $2.84 = $42 from existing members. This amounts to well over 10 percent of GDP per capita. Another interpretation is that the NGO inputs were not valued heavily, but it is worth noting that member contributions were worth considerably less than even pre-existing group assets per member.

There is some evidence that program group members who made in-kind contributions were more likely to secure an official position. In the first post-intervention planting cycle, the probability of a group promoting at least one individual whose land was used for group cultivation to an executive position was 8 percent higher in program groups; this is nearly significant at the 5 percent level (column 4). Among people providing land for group cultivation, those in program groups are 17 percentage points more likely to be promoted to an executive position than their counterparts in comparison groups (column 5). Hypothetically, the new entrants could have contributed to the groups through human capital or through labor. However, if these contributions are substantial it would presumably be reflected in higher agricultural output or in better group functioning. We saw no evidence of improvements in these areas.

Overall, external assistance increased entry into groups, and led people with higher socio-economic status to enter group membership and leadership. New entrants and leaders seem to have paid something in exchange for these positions, but the amount they paid was not worth much, much less than the value of the assistance provided to groups, or than the per member value of the assets accumulated by group members.

## 8. Exit from Groups

One might have expected the program to sharply decrease exit rates from groups due to the greater financial benefits of membership in assisted groups, especially as there is no formal mechanism for cashing out the value of membership. In fact, overall exit rates from program groups were not statistically different than in comparison groups (Table 6, column 1), but the nature of exit changed.

Fewer members left due to difficulty paying fees, consistent with the greater financial benefits of membership, but exit due to conflict doubled (columns 2-3). Older, female members were disproportionately likely to leave in program groups. The proportion of those leaving groups or becoming inactive during the project period who were female and older than 50 was more than twice as great in program groups as in comparison groups (column 4). The absolute probability of a woman over 50 leaving or becoming inactive is fourteen percentage points higher in program groups than in comparison groups representing a more than 60 percent increase over the base exit rate of 18 percent. As noted earlier, older women are particularly socially isolated in this society, due to the combination of exogamy and patrilocal residence. Moreover, since more than half of group agricultural production was retained by the group prior to the project period and since effort is required to organize and register groups, write bylaws, and attend meetings, older members will typically have invested a fair amount in groups. There is no evidence that members leaving groups received any compensation for their years of investment in the group.

The rate at which members left program groups is particularly high after inputs were distributed. In the first year after our baseline survey, exit rates due to conflict were only somewhat higher in program groups, but over the next six months, eleven people were cited as leaving program groups due to conflict, whereas only one member left a comparison group due to conflict. Anecdotal evidence suggests that there was conflict over use of inputs, such as tools, that had been provided to the groups.

### 9. A Model of Group Dynamics

The previous sections of the paper suggest that a static analysis, assuming that group composition will stay the same in the face of external funding, will yield misleading inferences about the impact of outside funding on the strength of organizations of the disadvantaged. In this section, we construct a dynamic model of how groups evolve over time as existing members leave and the remaining members select new members from among those who want to join. While the previous sections of this paper take advantage of the random order of program phase-in to show that people of higher socioeconomic status join women's groups that receive external funding, this section is based on the premise that people will more

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generally seek to join groups that are able to deliver more benefits to their members and will avoid organizations that extract too much from their members relative to what they deliver.

We assume groups vary in the ability to deliver benefits to members. This could be due to variation in outside funding, but it could be due to other causes as well, such as differences among groups in assets, political connections, or internal norms. We also assume that when groups select among new applicants, they will typically prefer to admit those who can bring more to the group and that this will be positively correlated with socioeconomic status. The model implies that in steady state, as suggested by Walzer (2002), the disadvantaged will either have weak organizations or not participate in civic organizations at all. The model is designed to apply to the women's groups we study, but we think the results may be relevant to civic groups more generally in contexts in which there are effective limits on group size and formation of new groups, different individuals can differentially contribute to groups, and groups differ in the ability to deliver services to members.

Subsection A sets out the assumptions of the model, subsection B solves for the steady state, and subsection C discusses extensions and implications.

## 9A. Assumptions

Suppose that people live for two periods: prime age and old age.[11] They work in prime age, and, with potentially diminished capacity, in old age. Each period, the old die, the prime-age become old, and a new population of prime age workers enters the labor force. Each generation has an infinity of individuals.[12] At the beginning of each period, a new generation of prime-age workers can apply to join groups and the existing, newly old, members of each group decide which applicants to admit. Joining a group involves some fixed commitment of time to the group, which could otherwise be spent in individual production.[13]

It is likely to be the case that the larger the group size, the more difficult it will be to manage free rider problems within the group. We will assume that group size is fixed at $N$. This corresponds to the extreme case when free rider issues can be managed perfectly within groups up to some size $N$, but

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[11] One could also assume a period of youth, in which people go to school, but do not work, and do not join groups.
[12] This assumption is technical, letting us avoid complications from heterogenous groups.
[13] For simplicity we will assume that people can be members of only a single group, but the results would generalize readily to the case in which people had time to be members of up to some fixed maximum number of groups.

cannot be managed at all for larger sizes.  We assume that groups have *N*/2 prime-age members and *N*/2 old members.[14]

People enter prime age differing in the ability to contribute to groups, which we call "productivity."  In the context of the women's groups we study, productivity would incorporate physical strength, agricultural knowledge, the ability to interact with donors and political leaders, and ownership of land, tools, or other assets that might be of use to the group. In an organization of parents sponsoring a children's soccer league, it might include the ability to coach kids, ownership of a minivan, or organizational skills. We assume a person's productivity in the group is positively correlated with his or her individual earning ability, which can be taken as a measure of socioeconomic status.[15]

Suppose that if person *i* has an initial productivity $L_{i,p}$ when prime age, her productivity when old is $L_{i,o} = L_{i,p} - \delta + \varepsilon_i$ where $\delta$ is the average loss in productivity with age and $\varepsilon$ is random variation in health.  (The assumption of lower productivity among the elderly is the main assumption of the model that is designed to be specific to the context of women's groups we study, but it is important only for the result that elderly members will be the most likely to be expelled in the extension of the model in which members can be forced to leave.)

Suppose that an individual *j* can produce $L_j$ working on her own and that a group *G* with N/2 prime age members and N/2 old members can produce f($L_g$, $X_g$), where $L_g = \sum_{i=1}^{N/2} L_{i\,p} + \sum_{j=1}^{N/2} L_{i,o}$ , and $X_g$ is a group-specific productivity term that depends on group-specific characteristics such as the right to use a particularly productive or unproductive plot of land, the efficacy of controlling free riding within the group, or favorable and unfavorable relationships with donors or government officials.  We will assume in particular that group output is equal to the sum of member productivity and group productivity, $X_g$.[16]

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[14] Note that if we did not constrain groups to have N/2 prime age workers and N/2 old workers, then  there might be cycles in membership, with some groups having large cohorts in odd periods and small cohorts in odd periods.  We conjecture that with adjustment costs in group size, however, groups would wind up evenly balanced across cohorts in steady state.

[15] Of course this correlation is not perfect. Incorporating an imperfect correlation would yield a positive correlation between socioeconomic status  and group membership in steady state, rather than a cut-off level of socioeconomic status above which people join groups and below which they do not.

[16] Note that if *L* and *X* are complements, so total output in society is maximized by assigning high productivity people to work in highly effective groups, there will be an additional force leading high socioeconomic status

$X_g$ represents the net effect of group activities, such as roscas and targeted help to needy group members, and productivity losses due to free-riding. In particular $X_g$ may be negative. Assume there is a continuous distribution of $L$ and $X$ and that individuals have constant absolute risk aversion with parameter $a$, implying that risk aversion does not depend on wealth. Utility is $-\frac{1}{a}\left[e^{-ac_1} + e^{-ac_2}\right]$ where $c_1$ and $c_2$ are consumption when prime age and old respectively. We make the assumption about risk aversion to ensure that all individuals get the same insurance benefits from groups and discuss relaxing the assumption later.

In addition to the assumptions about the production and utility functions, we make an assumption about the functioning of groups that will generate a motive for members of groups to prefer high productivity applicants to those of lower productivity when deciding which new applicants to admit. In particular, we assume that the groups require a fixed time contribution from each member and that while some proportion of group output may be distributed in proportion to members' productivity, there is at least some proportion that is distributed equally. There is both theoretical and empirical justification for this assumption. Since workers are risk averse and are subject to random shocks to their labor productivity, members of each generation would want to commit to egalitarian redistribution *ex ante* when they join groups. Moreover, if the distribution of shocks is right skewed, so the mean level of productivity is greater than the median level, then an *ex post* vote among members would lead to such redistribution because the median voter will prefer at least some redistribution (Kremer,1997). Empirically, almost all groups require similar time contributions from all members and divide output equally. If groups divide at least some share of output equally among members, then existing group members will prefer to admit higher productivity applicants, because they will wind up obtaining a share of their output.[17]

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people to be selected together into the strongest groups, but we argue here that even in the absence of such factors there may be sorting across groups in steady state.

[17] Hypothetically this preference for admitting members of higher productivity could be neutralized by a system of higher entrance fees for applicants with low productivity, so that existing members would be indifferent whether to accept high or low productivity applicants. However, empirically, in the context we examine, observed entrance fees are typically very low. This may well be due in part to borrowing constraints that make it difficult for low skill workers to pay high enough entrance fees to induce groups to admit them in preference to higher skill applicants. Indeed, it is standard in overlapping generation models to assume that each new generation starts out without capital. It may be particularly appropriate in this context to assume that the women in each generation of the lowest socioeconomic status would have difficulty saving enough to pay substantial entrance fees to join groups. There is

Suppose that the process for recruiting new group members works as follows. At the beginning of each period, prior to the realization of health shocks, new prime-age workers decide which groups they wish to apply to and the newly old members of each group vote on which prime-age applicants to admit. Stable matches will be those in which a) there is no case in which both a group and an applicant would prefer for the applicant to be in the group but the applicant is not in the group, and b) there is no person in a group who would be better off producing individually. Equilibria are assignments of people to groups such that all matches are stable. (Here we consider the case in which once a member joins he or she cannot be removed, but in the next subsection we discuss an extension in which existing members can be removed. We assume there are sufficient social sanctions available to the group that no member leaves in order to default on obligations to fellow members.) We assume that applicants cannot borrow to finance payments to the group in exchange for membership.

*9.B.  Steady States*

In this subsection, we solve for steady-state equilibria given the assumptions above and some initial distribution of groups with associated levels of member benefits, *X*. We will define a steady state as an equilibrium in which the distribution of initial productivity of group members, *L*, stays constant over time.

Note first that groups providing sufficiently low benefits for members cannot exist in steady state. If the level of *X* in a group is too low, the cost of membership will outweigh the benefits of group membership relative to private production: in our context such benefits include insuring against shocks such as risks to one's labor endowment and providing a savings mechanism as members contribute more valuable labor when prime-age and in exchange build up "equity" in the group that allows them to share output with prime-age members when old. In civic groups in general, benefits may include other benefits such as the health benefits of participating in a soccer club or the enjoyable nature of group activities.

**Proposition:** There will be a cutoff value of $X_g$, denoted $X_c$, such that no group with $X < X_c$ will exist in steady state. More generally, no group with $X < X_c$ can sustain itself indefinitely.

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evidence that intrahousehold dynamics make it difficult for women to save in this environment, and in fact some argue that a principle role for women's groups run is to shield savings from husbands and other family members (Anderson and Baland 2002).

**Proof:** Denote the net insurance and savings benefit to a prime-age worker of productivity $L$ of joining a group at time $t$, conditional on people of type $L$ joining at $t$-1 and $t$+1 as $B$. $B$ is the difference between expected utility in the group and in individual production. Expected utility in individual production for person $i$ is $U(L_i) + E\,[U\,(L_i - \delta + \varepsilon_i\,)]$. Expected utility in a group of people of the same productivity

level is: $2\,EU\left(L - \dfrac{\sum_{j=1}^{\frac{N}{2}} [\delta - \varepsilon_j] + X_g}{N}\right)$ , so that $B = 2\,EU\left(L - \dfrac{\sum_{j=1}^{\frac{N}{2}} [\delta - \varepsilon_j] + X_g}{N}\right) - U(L) - E\big[U\big(L - \delta + \varepsilon_i\big)\big]$

Define $X_c$ as the level of $X$ such that if $X_g = X_c$, people with the same prime-age productivity join a group each generation and $B$ will be exactly equal to zero. Because individuals are risk averse, $X_c < 0$.

It is straightforward to see that there cannot be a steady state in which members of the same initial L join a group with $X < X_c$ every generation, because then members would have been better off producing individually. This implies that people will only join a group with $X < X_c$ if they expect that the average productivity of other members of the group over their lifetime in the group to be higher than their own by at least some small amount, $\varepsilon$. Yet this violates the definition of steady state above.

More generally, groups with $X < X_c$ cannot persist indefinitely because each generation cannot have at least $\varepsilon$ lower productivity than average in their group over their lifetime. In a group with low $X$ but high productivity, initial members may attract lower productivity members in the next generation, but eventually a time will come when there are not enough potential members of at least $\varepsilon$ lower productivity to replace existing members. ∎

It is possible to show that in steady state either the disadvantaged will not be members of any group or they will be members of weaker groups than more advantaged people. Denote the number of groups with $X > X_c$ per person as q. Formally,

**Proposition**: There is a steady state equilibrium in which all sustainable groups have N members, for any two groups $i$ and $j$, $X_i > X_j$ implies $\overline{L_i} > \overline{L_j}$ , where bars denote group averages, and if q < 1/N then there is a cutoff level of $L$ below which no one is a member of a group, and above which everyone is. Furthermore, if the distributions of L and X have positive support along their complete ranges there is no steady state in which $X_i > X_j$ and $\overline{L_i} < \overline{L_j}$ for any $i, j$.

**Proof**: Recall that free rider problems limit the size of a group to N. Thus if there are fewer than 1/N groups per capita, some individuals will not join groups. All individuals prefer to join sustainable groups, and all groups prefer to admit another member with at least as high productivity as the group mean, because of risk aversion. To see that there is a steady state in which the most advantaged people are in the strongest groups, note that if at time $t$ there exists a situation where all groups with high member benefits $X_i > X_j$ also have higher member productivity, $\overline{L}_i > \overline{L}_j$ and if the same is true at time $t + 2$, then at time $t + 1$ all applicants will prefer to join groups with higher $X$. Since all groups prefer to admit applicants with higher L, the unique equilibrium will be for workers and groups to pair in order of desirability. Induction implies this will be a steady state such that groups begin with $X_i > X_j$ and $\overline{L}_i > \overline{L}_j$ in every period.

To see that there cannot be a steady state in which $X_i > X_j$ and $\overline{L}_i < \overline{L}_j$, note that if the rank order of groups in *X* were different than the rank order in *L*, then members of a group with the *j*th highest level of *X* and the *i*th highest level of *L*, where *j< i* could recruit members of slightly higher *L* than themselves, since in this case the new members who joined the group would have discretely higher *X* and only slightly lower level *L* than their co-members. Thus this cannot be an equilibrium.∎

There is no steady state in which a prime-age person of productivity *L '* does not join a group and a person of productivity *L < L '* does join. To see this, note that this would imply that there must be some productivity level, $\hat{L}$, such that someone with slightly higher productivity than $\hat{L}$ is not a member of a group and someone with slightly lower productivity is a member of a group with $X > X_c$. But in that case the person with $L > \hat{L}$ would prefer to have joined the group and the members would have preferred that applicant to one they admitted. ∎

It is worth noting that we do not show that the steady state above is unique. We focus here on the most favorable equilibrium, i.e., that in which all existing groups with $X_g > X_c$ survive with $qN < 1$ and otherwise the 1/$N$ groups with highest *X* survive.

The proposition implies that starting from a steady state, an increase in $X_g$ of a group with disadvantaged members, whether due to an outside aid program or the efforts of its own members, will

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have only a temporary impact on the correlation between social status and group membership in society or on the relative strength of groups of the advantaged and disadvantaged. (This would not be the case if a group originally had $X < X_c$ and the assistance raises the group's $X$ above $X_c$, making a group viable in steady state that would not have been viable otherwise.) If groups spend all their assets, there will be no long-run effect of an infusion of capital into groups, but this proposition implies that even if infusions of capital and training programs permanently raise a group's $X$, in the long run this will simply lead higher status people to join the group. The process may take some time, however. To see this, note that starting in steady state, if a group $i$ has a positive shock to $X$, it will be able to attract higher productivity new members in the next period. The presence of these higher productivity numbers will enable it to attract members of still higher productivity in the period following that. Asymptotically, the human capital level of its members will approach the level that will be commensurate with its new $X$. [18]

*9.C. Discussion and Extensions*

Under the model, those of higher socioeconomic status will have stronger groups in the sense that they belong to groups that are able to provide greater benefits to members, i.e. with higher $X$. Those of lower socioeconomic status will either not be members of any group or members of weaker groups. This is consistent with the claims of Walzer (2002) and the findings of Almond and Verba and subsequent writers.

In the model, there is no overall social efficiency gained from sorting of high-productivity people into groups with high $X$ and $L$.[19] High productivity workers are asked to join groups with other high productivity members and with high levels of $X$ purely because this is the way that previous generation of members of these groups can extract the most benefit. But of course the allocation of members to groups may affect total output. To the extent that there is complementarity between $X$ and $L$, as seems plausible,

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[18] To see how groups respond over time to changes in $X$, without loss of generality order the groups by $X$ so group $i$ has the $i$th highest $X$. By the previous proposition, it will also have the $i$th highest productivity members at $t = 0$. If $X$ increases for the $i$th group at time 0, then at time 1, the group will still have old members with productivity rank order $i$, but will have capital $X$ with rank order $j$, where $j < i$. It will have overall desirability $i_1$, where $j < i_1 < i$, and hence will attract members with productivity of rank order $i_1$. By induction, this implies that $j < i_2 < i_1 < i$, where $i_2$ denotes the attractiveness of the group at time 2. As this process repeats, worker productivity will asymptotically approach rank order $j$.

[19] Total output in society is independent of who is a member of which group, given the assumption that output is additive in $L$ and $X$.

there may be efficiency gains from this type of matching.  Indeed with complementarity between individual productivity and collectively produced benefits, there would be matching of high skill workers together in the groups with highest $X$ even in the absence of institutional tendencies of groups toward sorting.

A key result of this model is that when the number of groups is limited and individuals cannot borrow to pay entrance fees, even a slight difference in the ability of individuals to contribute to group output may lead to a very big difference in participation in organizations among people of high and low socioeconomic status in steady state, even without any innate complementarity between group and individual productivity. Note an important difference from views that stress the importance of education for participation in associations.  In this model differences in the strength of organizations between rich and poor or educated and uneducated will not just be proportional to the differences in the ability of individuals to contribute to these organizations, but may wind up being much greater, because the rich and educated will be in a better position to secure membership in the strongest organizations by virtue of their ability to contribute more to group output.

Thus, rather than seeing differences in participation between people of different levels of education solely as a matter of a personal propensity, albeit perhaps one that can be changed by education, the model suggests that these differences may in part be a social phenomenon. Those with higher income wind up with beach houses. This is not because they are necessarily better at building them but simply because they can purchase them. A similar process may take place with organizations. However, if norms or credit constraints make it difficult to simply purchase membership in organizations, then what group one joins will depend on how much one can contribute to the organization and therefore how desirable a candidate is to the existing members of the organization. If there are no cash payments, then this may depend on the personal qualities of the individual - on human capital as much as physical capital. This can help explain why there may be a stronger correlation between individual social status or human capital and participation in organizations than between income and participation.

One question is whether this process could be limited if organizations put clauses in their constitutions limiting membership or leadership to members of disadvantaged groups.  It is worth noting that 1) only groups with a strong ideological commitment to serve the disadvantaged will make such

commitments in the first place; 2) constitutional provisions that restrict organizations' ability to choose members and leaders may create costly inflexibility; and 3) it is hard to make such provisions stick, because in the future members may, at the margin, prefer admitting higher members of higher socioeconomic status. Even the Chinese Communist Party recently decided to admit capitalists. Note also that the changes outlined here do not have to take place suddenly. They may take place over quite a long period. Some organizations may be constitutionally committed to open membership, but even in these organizations there may be a limited number of slots that are particularly attractive and people may want to join only if they have a realistic chance of obtaining one of these slots. In this case, much of the previous analysis will apply even to open-membership organizations.

In the analysis above, we considered the case in which it is impossible to expel existing members. We now consider informally the case in which groups can expel members. Groups will typically expel elderly members who receive productivity-lowering shocks and increases in assets will make them more likely to expel members. Suppose that at the beginning of each period each group selects a leader who can explicitly or implicitly propose a change in group membership, which is subject to an up or down vote. If the proposal is voted down, then there are no further opportunities to expel members. Suppose expelling a member causes disruption and this effectively reduces output by an amount $\omega$, perhaps in part because it damages the group's reputation and makes it harder to recruit members in the future.

Consider a group that is in steady state and experiences no shock to its capital stock. If $\omega$ is small enough, then the leader will have incentives to propose letting a bare majority of existing members stay and kicking out the 49% of existing members with the lowest productivity. This allows the remaining members to expropriate the implicit value of their share of the capital stock and avoid having to share output with lower productivity members. If $\omega$ is large enough, the chairlady will not propose kicking out existing members. There will be a critical level of $\omega, \omega_{crit}$, below which groups will expel some members. Of course if groups kick out members often enough this will reduce the insurance benefits of groups and may break equilibria in which groups exist in steady state.

To see that grants to groups will make them more likely to expel elderly members of low productivity, note that the larger the assets of the group, the less the incentive to share them with

additional members. Therefore the critical value of $\omega, \omega_{crit}$, below which groups will expel some members will fall in response to an exogenous increase in the group's capital stock.

The model abstracts away from the question of how groups are initially formed and how they exit. It could be generalized by assuming that groups exit with some probability and that with some probability people are able to spontaneously form a group. This would produce a steady-state distribution of groups. In the limiting case as the exit and entry probability approach zero, the distribution will converge to the distribution shown here. More generally, the distribution would look similar, but with a bit of churning as new groups enter and approach their steady state. In the limiting case when groups enter and exit infinitely rapidly, the propensity of people to be in groups in steady state will be simply their propensity to form groups and the effects described in the model will not arise.

We conjecture that in such a dynamic model, the ratio of population to groups will depend on the relative entry and exit rate of organizations. If the entry rate is relatively high then both rich and poor will belong to organizations in steady state, but those of higher socioeconomic status will disproportionately belong to stronger organizations (those with higher *X*), even if low and high status people create organizations at the same rate and with the same distribution of efficacy. One plausible scenario is that creating groups of low *X* is relatively easy, but all groups are subject to shocks to *X*. Then organizations of the poor will be fragile and transient, either surviving and turning into organizations of the more advantaged, or atrophying and exiting. This is consistent with the tendency noted by many scholars for organizations of the poor to change their mission, leadership and membership away from a focus on the poor (Piven and Cloward, 1979; Payne 1995).

This may help clarify why this model differs from theories in which higher socioeconomic status people or more educated people simply have higher propensity to form or join organizations. In the limiting case as groups enter and exit very quickly, our model would reduce to such a model. To the extent that opportunities for groups to enter/exit occur only at certain times, differences in participation rates with individual characteristics will grow.

Finally, it is worth noting that our model does not imply that the only reason that those of lower socioeconomic status are less likely to participate in associational life is that they are pushed out of successful organizations by people of higher socioeconomic status. This would not, for example, fully

account for differences in participation between geographic areas with different income or education levels in places with limited geographic mobility. It seems reasonable that there are other channels as well.

### 10. Conclusion

At least since the work of Almond and Verba (1965) it has been known that the poor and disadvantaged are less likely to participate in civic associations. This lower participation rate has been seen as an impediment to political influence and economic development. Policy makers have sometimes responded by funding community associations, as in the War on Poverty in the United States, or in recent international development programs designed to promote community driven development. Yet it has been extremely difficult to rigorously assess either the causal impact of these programs or the causal relationships underlying the correlation between socioeconomic status and participation in civic associations. Many causal stories are potentially plausible and a host of factors could potentially confound attempts to empirically disentangle causal links.

This paper takes advantage of a rare opportunity to assess causal impact by comparing community groups that had been randomly chosen for early phase-in of a program providing funding with groups that had not yet participated in the program. We find that new entrants in groups receiving funds are twice as likely to be from outside the village, have secondary education, and have formal sector income as new entrants in comparison groups. Program groups are more likely to elect new officials and to have a new group member in an executive position, and the newly elected executive officials in program groups are more likely to be male. The assistance appears to have reduced the role of the most disadvantaged members of these groups. The exit rate of older women increased by two-thirds as a result of the program, and the rate at which members left due to conflict doubled. Departing members were not compensated for their contributions to the groups' capital stock over the years, and entrance fees paid by newly joining members were far less than the per member value of the assistance or of the other assets groups had built up over time.

While increasing the role of higher status individuals could theoretically have positive effects on group activity, and members report more positive subjective evaluations of group leadership, we find

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little objective evidence of positive impacts on group output, organizational strength, or community ties. Program groups have no additional contact with other community groups but appear to become more vertically tied to local administrative officials.

These results may create a dilemma for those, such as former World Bank President Wolfensohn quoted earlier, seeking to strengthen organizations of the poor. Strengthening the material status of these organizations may induce changes in membership that lead them to no longer represent the disadvantaged. While it is impossible to completely rule out the possibility that the impacts we identify were due to particular features of the environment or the program, we think it would be a mistake to simply dismiss these findings as an artifact. Compared to many other efforts to fund civil society, this program was organized in a way that was relatively sensitive to power relationships and the dangers of elite capture. For example, while foreign donors are sometimes accused of funding "briefcase NGOs" set up by elites to extract funds, we examine a program that assisted indigenous groups which had not been formed in the hope of getting external assistance and which were genuinely led by rural women. One cannot rule out the possibility that other programs in other settings would have different effects, but in the absence of rigorous evaluations, that must remain conjecture. The one program for which we can estimate treatment effects by taking advantage of random assignment to treatment and comparison groups suggests that the dangers of external assistance highlighted by Skocpol (2004a, 2004b; 2003) and others are very real, at least in some contexts.

Until more randomized evaluations are conducted, the policy lesson is not that such programs will always fail, but rather that they may fail, and even backfire, and that simple surveys asking about member satisfaction may not pick this up. This suggests that it is prudent to first run such programs on a pilot basis and carefully evaluate their impact before expanding them. To the extent that such programs need to be phased in over time in any case, randomizing the order of phase in creates an opportunity to more rigorously examine their impact. This would provide an evidence-based alternative to overoptimistic calls to action that too often pay inadequate attention to the potential for unintended consequences; to a generalized aid pessimism; and to the faddism that often characterizes the development assistance world. In this alternative, programs would be phased in gradually, their results would be measured, failed programs would be abandoned, and successful programs would be scaled up.

Such an approach would help ensure resources are better used and, over time, it would build up a better picture of how and when programs are likely to succeed and a more nuanced understanding of how to promote equity and participation in civic life and development more generally.

Aside from their policy implications, our results also have implications for understanding the relationship between socioeconomic status and associational life.  The composition and leadership of organizations is not static -- as groups prosper they are likely to attract higher social status members and leaders, potentially displacing those of lower socioeconomic status. Similar processes are likely to operate in other contexts. A church or an educational institution serving the poor that receives a generous gift or undergoes a period of particularly good leadership is likely to attract higher status members and students. A neighborhood where community members effectively organize to fight crime, improve schools, and lobby the city government for civic improvements is likely to gentrify. In contrast, in neighborhoods where the community is not able to organize, rents are likely to remain low, and poor people are likely to remain.

A dynamic model of organizations based on the empirical findings  suggests that through this process the disadvantaged will either have weak organizations or will not participate, consistent with the observations of Walzer (2002) and the empirical findings of Verba and others (1995). Group dynamics will lead to a positive correlation between the strength of groups and their members' socioeconomic status.  If creating organizations is costly, this group dynamic will create a correlation between socioeconomic status and organizational membership, even if the disadvantaged and the advantaged start new organizations at the same rate.

The formal model sheds light on both the generality of the results and their limitations and thus may be useful in clarifying when these phenomenon are likely and when they are not. First, we show that in environments such as those we model, variation in the strength of organizations and the extent of participation with socioeconomic status may not be just proportional to people's ability and propensity to contribute to organizations, but that even small differences in the ability to contribute to organizations may lead to large differences in the strength of organizations and in participation between those of different socioeconomic status.  Second, although we agree that one mechanism through which outside assistance may lead to changes in groups is through the imposition of formal structures and bureaucratic

requirements that empower the more educated members of groups, we show that even in the absence of these effects, outside assistance can change group membership and leadership simply by making membership attractive to a broader range of people.

The formal model is also useful in showing what may limit these effects and possible ways to overcome them. Thus, one of the assumptions necessary for the result is that there is a continuous distribution of productivity in the population. Another assumption is that organization deliver benefits to all members in a similar way, or at least in ways that do not depend on social status. One reason why women's groups in Kenya have long survived and thrived as organizations of the disadvantaged is that the disadvantaged may value their insurance functions more highly than the better off. The NGO program we study provided groups with agricultural inputs that were likely as valuable to those of higher socioeconomic status as to the disadvantaged, and the model suggests that this will lead to the entry of more advantaged.

To the extent that those inside an organizations can structure it in ways that disproportionately benefit members of lower socioeconomic status, or that external assistance can be provided in ways that create this effect, it may be possible to increase participation and strength of organizations of the disadvantaged over the long term (see for example, Warren, 2001). For example, religious and cultural associations that provide large benefits to those from a particular community but smaller benefits to those outside the community would be less likely to attract outsiders, even if they accumulate assets, undergo periods of particularly strong leadership, build up external connections, or otherwise increase the benefits available from participation in the group. They will be particularly unlikely to attract outsiders if there is a sharp discontinuity in social status associated with the communities' ethnic or religious identity. The reluctance of the socially advantaged to enter organizations of disadvantaged ethnic and religious groups, rather than any innate predisposition of the disadvantaged to organize on ethnic or religious lines, may help explain why some of the strongest organizations of the disadvantaged are organized on ethnic and religious lines.

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**Table 1: Pre-intervention Comparison[a]**

| Panel A: Group Characteristics | Program group mean (standard deviation) | Comparison groups mean (standard deviation) |
|---|---|---|
| Years in operation | 7.83 | 7.55 |
| | (5.2) | (5.6) |
| Group size | 21.7 | 20.8 |
| | (7.71) | (7.75) |
| Proportion of members living in same village | 0.73 | 0.67 |
| | (0.25) | (0.25) |
| Distance from a paved road (kilometers) | 10.8 | 9.95 |
| | (15.8) | (10.8) |
| Attendance rates at all meetings[b] | 0.90 | 0.92 |
| | (0.12) | (0.12) |
| Attendance rates at group farmwork meetings[c] | 0.88 | 0.90 |
| | (0.17) | (0.17) |
| Proportion of groups holding an election for officials in year prior to pre-intervention survey | 0.11 | 0.15 |
| | (0.03) | (0.36) |
| Number of visits group visited members' home for emergency assistance[d] | 2.91 | 2.84 |
| | (0.64) | (0.66) |

| Panel B: Characteristics of Members and Executive Officials | All Members (standard deviation) | | Executive Officials (standard deviation) | |
|---|---|---|---|---|
| | Program | Comparison | Program | Comparison |
| Proportion of females | 0.78 | 0.81 | 0.99 | 0.95 |
| | (0.16) | (0.17) | (0.07) | (0.13) |
| Average age[e] | 41.5 | 41.2 | 40.5 | 39.8 |
| | (6.1) | (4.06) | (6.97) | (5.62) |
| Proportion over 50 years of age | 0.29 | 0.25 | 0.21 | 0.15 |
| | (0.23) | (0.15) | (0.29) | (0.21) |
| Proportion who have ever been married | 0.98 | 0.98 | 0.29 | 0.32 |
| | (0.01) | (0.05) | (0.12) | (0.13) |
| Average years of education[f] | 5.33 | 5.31 | 7.13 | 6.87 |
| | (2.74) | (1.96) | (2.83) | (2.87) |
| Proportion with no formal education | 0.34 | 0.32 | 0.12 | 0.17 |
| | (0.23) | (0.16) | (0.20) | (0.23) |
| Proportion of females with secondary education | 0.23 | 0.23 | 0.38 | 0.39 |
| | (0.23) | (0.16) | (0.36) | (0.35) |
| Proportion with formal sector income | 0.17 | 0.12 | 0.18 | 0.15 |
| | (0.19) | (0.11) | (0.27) | (0.25) |
| Proportion from same village | 0.73 | 0.67 | 0.75 | 0.73 |
| | (0.23) | (0.25) | (0.23) | (0.22) |

Note: For each variable, an unpaired (two-sample) t-test for the equality of means was run, but no significant differences were seen.

[b]Based on group records of individual attendance at the two most recent meetings of 8 randomly selected members in each group.

[c]Based on group records of individual attendance at the two most recent farmwork meetings of 8 randomly selected members in each group.

[d]Number of times out of four possible times that groups visited members' homes prior to the intervention.

[e]Data were collected for individuals using the following age ranges: 20 or under years of age, 21-30 years of age, 31-40 years of age, 41-50 years of age, over 50 years.

[f]Data were collected for individuals using the following ranges: no formal education, some primary education, completed primary education, some secondary education, completed secondary education, some "A" level education, completed "A" levels, some post secondary education.

**Table 2: Post-Intervention Agricultural Outcomes**

| Dependent variable | Acres planted during long rains | Hours of agricultural labor contributed per member during the long rains | Total dollar value of long rains harvest | Acres planted during short rains[a] | Hours of agricultural labor contributed per member during the short rains | Total dollar value of short rains harvest | Acres planted by individual in short rains[b] | Probability of non-executive using fertilizer at planting[c] (probit) | Probability of executive using fertilizer at planting[c] (probit) |
|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| Program groups | 0.49*** | 8.90** | 17.8 | 0.51*** | 2.23 | 4.21 | -0.09 | 0.001 | 0.12*** |
| | (0.16) | (3.25) | (11.7) | (0.16) | (2.53) | (11.1) | (0.10) | (0.02) | (0.04) |
| R-squared | 0.37 | 0.09 | 0.08 | 0.30 | 0.07 | 0.04 | 0.04 | -- | -- |
| Number of observations | 80 | 80 | 80 | 77 | 77 | 77 | 307 | 566 | 261 |
| Mean of dependent variable in comparison groups | 0.80 | 21.1 | 41.6 | 0.63 | 15.9 | 29.4 | 1.37 | 0.08 | 0.04 |

Significant at the 90% (*), 95% (**), 99% (***) level.

Note: OLS estimation with robust standard errors in parentheses. All regressions include indicator variables for the geographic division in which a group is located. Probit coefficients reported are "dprobit" estimates that give the change in the probability for an infinitesimal change in each independent, continuous variable and the discrete change in the probability for dummy variables, evaluated at the mean. Robust standard errors are clustered at the group level.

[a]Missing data in columns 4-6 is for two comparison groups and one program group.

[b]Data on individual cultivation comes from surveys undertaken with the 3 executive officials and 3 randomly selected non-executives in each group. Cultivation was recorded for crop varieties for which seeds were provided by the NGO project.

[c]Data per plot, rather than per individual.

# Table 3: Post-intervention Group Outcomes

| Panel A: Group Cohesion | Members' evaluation: has group leadership improved?[a] | Members' evaluation: are meetings more effective?[a] | Change in attendance rates at general meetings[b] | Number of days between general meetings | Number of times group visited members' home for emergency assistance | Total amount of cash assistance members gave to other members in US$ | Average frequency of rosca meeting in weeks[c] | Average dollar amount collected per month through rosca |
|---|---|---|---|---|---|---|---|---|
| | Probit | probit | OLS | OLS | OLS | OLS | OLS | OLS |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| Program groups | 0.23*** | 0.10 | -0.04 | 3.85 | 0.14 | 9.0 | -0.19 | 3.79 |
| | (0.05) | (0.07) | (0.06) | (17.2) | (0.49) | (11.6) | (0.25) | (6.34) |
| R-squared | -- | -- | 0.06 | 0.03 | 0.13 | 0.12 | 0.09 | 0.16 |
| Number of observations | 288 | 281 | 77 | 77 | 80 | 80 | 77 | 74 |
| Mean of dependent variable in comparison groups | 0.60 | 0.64 | -0.07 | 53 | 12.0 | 23.7 | 3.2 | 26.0 |

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| Panel B: Community Interaction | Number of contributions to community fundraising events | Amount contributed to community fundraising events in US $ | Dollar value of grants received by groups[d] | Number of times group received in-kind donations | Number of total community visits[e] | Number of visits by extension workers[f] | Number of visits by local government officials[g] |
|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| Program groups | -1.85 | -0.33 | -11.1** | -0.10* | 8.54** | 2.47* | 5.49** |
| | (1.97) | (3.29) | (5.46) | (0.06) | (3.52) | (1.39) | (2.52) |
| R-squared | 0.18 | 0.09 | 0.28 | -- | 0.15 | 0.13 | 0.09 |
| Number of observations | 80 | 80 | 77 | 77 | 77 | 77 | 77 |
| Mean of dependent variable in comparison groups | 4.2 | 12.3 | 11.3 | 0.13 | 13.5 | 3.3 | 4.6 |

Significant at the 90% (*), 95% (**) level, 99% (***) level.

Note: OLS estimation with robust standard errors in parentheses unless otherwise noted. All regressions include indicator variables for the geographic division in which a group is located. The post-intervention period is the 14 month period following the first pre-intervention survey.

[a] Probit estimation of individual-level data based on interviews with 3 randomly selected non-executive group members. Coefficients reported are "dprobit" estimates. Robust standard errors are clustered at the group level.

[b] Change in attendance from the pre-intervention period. Group attendance rates are based on group attendance records for 6 randomly selected members for each group. Two program groups did not have attendance records for the project period and one additional program group had no pre-intervention attendance information. There is no significant difference between program and comparison groups in the level of post-intervention attendance rates.

[c] Prior to funding, 66 groups held rotating savings and credit associations (roscas). There is no difference pre-intervention in the number of program versus comparison groups holding roscas. Post-intervention, three program groups did not hold roscas

[d] Two program groups and one comparison group did not have records on donations or visitors.

[e] This includes visits by government administration officials, Ministry of Agriculture, Health and Social Services field workers, other women's and community groups, religious groups, and NGOs.

[f] Includes extension officers from the Ministries of Health and Agriculture.

[g] Includes Chief and sub-chiefs, village elders, district officers and any senior administrative government officials.

**Table 4: Entry into Groups**

| | Number of new entrants | Proportion of new entrants with formal sector income | Proportion of new entrants who are male | Proportion of female entrants with secondary education | Probability that new member does not come from majority village | Proportion of new entrants who are married |
|---|---|---|---|---|---|---|
| | OLS | OLS | OLS | OLS | probit | OLS |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Program groups | 1.88** | 0.11* | 0.04 | 0.12* | 0.27** | -0.04** |
| | (0.79) | (0.06) | (0.09) | (0.07) | (0.10) | (0.02) |
| R-squared | 0.07 | 0.08 | 0.14 | 0.08 | -- | 0.20 |
| Number of observations | 80 | 56 | 57 | 50 | 236 | 55 |
| Mean of dependent variable in comparison groups | 2.0 | 0.09 | 0.25 | 0.08 | 0.23 | 1.0 |

Significant at the 90% (*), 95% (**) level, 99% (***)level.

Note: OLS estimation with robust standard errors. All regressions include indicator variables for the geographic division in which a group is located. The post-intervention period is the eighteen months following the pre-intervention survey. Column 5 reports "dprobit" estimates that give the change in the probability for an infinitesimal change in each independent, continuous variable and the discrete change in the probability for dummy variables, evaluated at the mean. Robust standard errors are clustered at the group level.

## Table 5:  Elections and Payments

| Panel A: Elections and New Group Executives | Probability that group has at least one new executive official in place | Probability that at least one new executive is also a new member | Change in the proportion who are male | Change in proportion with formal sector income | Change in proportion of females with secondary education | Change in years of education |
|---|---|---|---|---|---|---|
| | probit | probit | OLS | OLS | OLS | OLS |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Program groups | 0.18 (0.11) | 0.12** (0.06) | 0.04** (0.02) | 0.04 (0.04) | 0.04* (0.02) | 0.23 (0.42) |
| R-squared | -- | -- | 0.09 | 0.04 | 0.07 | 0.06 |
| Number of observations | 80 | 80 | 80 | 80 | 80 | 80 |
| Mean of dependent variable in comparison group | 0.35 | 0.08 | -0.02 | 0.06 | -0.06 | 0.32 |

| Panel B:  Payments for Membership and Executive Officership | Number who paid to join | Per person dollar amount of entrance fees collected by groups | Number of new members who provided land for group | Probability of promoting at least one individual to executive position whose land was used for group cultivation | Individual probability of promotion to executive official, conditional on providing land to group [a] |
|---|---|---|---|---|---|
| | OLS | OLS | OLS | Probit | Probit |
| | (1) | (2) | (3) | (4) | (5) |
| Program group | 0.79** (0.35) | 2.74 (2.13) | 0.10** (0.05) | 0.08* (0.04) | 0.17** (0.08) |
| R-squared | 0.10 | 0.04 | 0.11 | -- | -- |
| Number of observations | 80 | 80 | 80 | 80 | 75 |
| Mean of dependent variable in comparison groups | 0.28 | 1.1 | 0 | 0.05 | 0.05 |

Significant at the 90% (*), 95% (**) level, 99% (***) level.
Note:  Columns 1-2 of Panel A are probit estimation with robust standard errors. Columns 3-6 of Panel A are OLS estimation with robust standard errors. Columns 1-3 of Panel B are OLS estimation with robust standard errors. Columns 4-5 of Panel B are probit estimation with robust standard errors. We report the "dprobit" estimates.  All regressions include indicator variable variables for the geographic division in which a group is located. The post-intervention period is the eighteen months following the pre-intervention survey.

**Table 6: Exit from Groups**

| | Number leaving group[a] | Number leaving due to conflict | Number leaving due to difficulty paying group fees | Proportion of those leaving that are female and over 50[b] | Net change in group size |
|---|---|---|---|---|---|
| | OLS | OLS | OLS | OLS | OLS |
| | (1) | (2) | (3) | (4) | (5) |
| Program groups | 1.14 | 0.64** | -1.02*** | 0.14*** | 1.34 |
| | (1.11) | (0.31) | (0.30) | (0.05) | (0.90) |
| R-squared | 0.05 | 0.09 | 0.17 | 0.10 | 0.05 |
| Number of observations | 80 | 80 | 80 | 80 | 80 |
| Mean of dependent variable in comparison groups | 6.9 | 0.65 | 1.4 | 0.10 | 0.1 |

Significant at the 90% (*), 95% (**) level, 99% (***)level.
Note: OLS estimation with robust standard errors. All regressions include indicator variables for the geographic division in which a group is located. The post-intervention period is the eighteen months following the pre-intervention survey. Robust standard errors are clustered at the group level.
[a]Includes individuals who left the group, as well as those individuals who entered the official category "dormant," meaning they were inactive and no longer attended any group meetings or participated in any group activity. The specification in column 2 is robust to the inclusion of the pre-intervention proportion of members over the age of 50.
[b]Based on individual-level data. Coefficient represents the additional likelihood of leaving or becoming inactive in a treatment group, given than one is a woman over 50 years of age.