PARTICIPATING IN ADOLESCENT TRAINING PROGRAMS: NEW EVIDENCE FROM UGANDA*

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Abstract

Almost one third of the population in less developed countries is under age 15. Hence improving the effectiveness of policy interventions that target adolescents might be especially important. We analyze the intention to participate in training programs of adolescent girls in Uganda, a country with perhaps the most skewed age distribution anywhere in the world. The training program we focus on is BRAC's Adolescent Development Program, which emphasizes the provision of life skills training, entrepreneurship training, and microfinance. We present evidence on the individual and household determinants of the intention to participate of adolescent girls into this program. In particular, we show how: (i) individual demographics, skills, beliefs, and life satisfaction; and, (ii) household resources and experiences with NGOs in the past, determine the intent to participate. We discuss how these factors vary across and within villages, and whether and how they affect the likelihood to attend *per se*, and the intended frequency of attendance. The results have implications for the design, management, and evaluation of similar programs throughout East Africa.

Keywords: adolescent, participation, training programs.

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1 Introduction

There are enormous differences in age structures between rich and poor countries today. There are more than two billion young people below age twenty in less developed regions. In proportionate terms, one third of the population in less developed countries is under age 15, while the corresponding figure is less than one fifth in more developed countries. Hence in developing countries there are large cohorts exiting formal education and potentially entering the labor market each year. While such supply side increases might have detrimental effects on the welfare of all new entrants, there are good reasons to suppose that for girls the economic environment surrounding the transition from school to work is particularly harsh. For example, adolescent girls typically have poorer access to financial markets and information on labor market opportunities; they are disproportionately responsible for domestic duties, including child care; they are subject to stronger norms that hinder mobility and their ability to accept certain job assignments; and with certain notable exceptions, there often exists at least a perception of employer bias towards hiring male employees [Katz 2008]. These differences in constraints across genders translate into significant differences in economics outcomes. For example, Fares *et al* [2006] document that in developing countries, 34% of young women are out of the labor force, unemployed, or not in school, while the corresponding figure for men is 21%.

Such demographic and economic circumstances raise their own policy challenges, but it is especially clear that policies designed to target adolescent girls today can have enormous impacts on future society. This is both because the private returns to girls might be higher if they are more disadvantaged or constrained to begin with, and more controversially, the social returns might also be higher if the policy impact includes better outcomes for the children of adolescent girls.[1]

Many female targeted youth employment programs have focused on vocational training. The common elements in these interventions have been: (i) to work with local training providers to raise youth employment rates; (ii) the provision of classroom and on-the-job training designed explicitly to meet the needs of local firms; (iii) the encouragement of female participation often including the provision of child care stipends.[2] Relatively few of these interventions in developing countries have been effectively evaluated using rigorous research designs with plausibly exogenously determined control groups. Those that have, have found significantly higher benefits for young women relative to young men. For example, Attanasio *et al* [2008] find that in Columbia, the income gain to women is 18% relative to the control group, while the corresponding gain to men is 8%. They also document the different channels through which these differences across gender are generated. However, it is unclear whether such designed policies can be effectively applied to settings in Africa where training providers are scarce, the formal sector remains far smaller, and there are more significant constraints on female movement and access to labor markets.

This paper contributes to the debate on alternative policy approaches by studying the Adolescent Development Program (ADP), designed and implemented by BRAC, an international NGO. While, as detailed below, this paper focuses on the ADP in Uganda, the program is rapidly being replicated throughout sub-Saharan Africa, and is adapted from an earlier ADP implemented in Bangladesh. The ADP is targeted towards adolescent girls during their transition from school to work. Its multi-dimensional methodology is often referred to as the livelihood approach, and involves the provision of training related to life skills, entrepreneurial skills, and the provision of microfinance. There is little reliance on local firms or other private training providers. However, as yet, rigorous credible evidence on the causal impacts of this approach remain scarce.[3]

[1] While it is often presumed that reducing poverty increases gender equality, Sen's [1990] original missing women article also emphasized the reverse causality that stems from the empowerment of women accelerating development. Cross country macro evidence certainly is consistent with gender equality having increased as countries develop, as measured by narrowing gender gaps in school enrolment or labor force participation. However, it is far harder to find micro-evidence that microfinance, for example, facilitates female empowerment over how to use the additional resources [Kantor 2005, Ashraf *et al* 2008]. This is in contrast to the literature on relative income shares of spouses and household outcomes, that shows that as females have more household bargaining power, their welfare and that of their children rises.

[2] The World Bank's Youth Employment Inventory found that in 2007, of the gender focused youth employment programs in developing countries, eleven have been implemented in Sub-Saharan Africa, nine in Eastern Europe, seven in South and South East Asia, six in Latin America, and three in the Middle East and North Africa.

[3] One exception is Karlan and Valdivia [2009] who present evidence from a RCT and find positive effects of microfinance

This paper forms part of a larger research project to evaluate BRAC's ADP in Uganda. The program's aim is to improve the quality of life of adolescent girls, by developing their skill set so they can live as confident, empowered, and self-reliant individuals contributing to a change in their own families and communities. In this paper we document the factors that determine adolescent girls' intention to participate in an ADP-like program. Our research questions focus on understanding the individual, household, and village level determinants of the intent to participate.

For example, at the individual level, we provide evidence on whether adolescent girls that are likely to exhibit the highest marginal private benefits of participation indeed are more likely to participate, or whether the benefits accrue mostly to those girls that would have been likely to experience better labor market outcomes even without the program. We also shed light on whether programs designed to foster labor market skills encourage girls to drop out of formal schooling, which is obviously a key concern in the design of such policies. At the household level, we provide evidence on whether wealthier households are more likely to participate. Finally, at the village level, we shed light on whether patterns of participation exacerbate differences across villages.

Understanding the intent to participate, *before* actual take-up decisions are made is important for a number of reasons. First, most development assistance programs are designed with voluntary take-up. Hence this will nearly always lead to non-random selection into the program. Our analysis identifies *ex ante* the likely beneficiaries of the program and sheds light on the constraints that prevent others from participating. In turn, this allows programs to be fine tuned in terms of their actual components or targeting strategy, to maximize the social returns of the program.

Second, in RCT research designs, the twin assumptions of random assignment of the program and there being no spillover effects between treatment and control locations, are sufficient to identify the intention-to-treat program effects. Identifying a counterfactual group in control villages of individuals who would have participated had the program been active allows more precise estimation of the average treatment effects of the program, by accounting for non-random selection into participation.

Finally, Ugandan society displays all of the demographic trends documented above, indeed, Uganda has amongst the most skewed age distributions of any country. For example, in 2000, 51% of Uganda's population of 23 million was aged 15 or below. This is even higher than its neighbors – the corresponding figure is 44.9% in Tanzania and 42.8% in Kenya, while as a point of comparison, the figure is 21.2% in the US. Moreover, demographic trends are such that the Ugandan population is expected to become younger overtime. By 2010 it is projected that 66% of its population will be aged below 15. Hence improving the effectiveness of policy interventions that target adolescent girls is especially important in this context.

2 The Adolescent Development Program (ADP)

2.1 Program Design

The ADP program operates at the level of a village. Within villages, an adolescent development club (ADC) is established within which training activities take place for participants. Each ADC is expected to have between 20 and 35 girls. The targeted age range is girls from 14 to 20 although in practice, given field staff are unlikely to turn away girls and that ages are hard to verify, girls aged between 10 and 25 are potential beneficiaries. There are two key elements to the program's design – training and microfinance. On training, participants are provided with life skills training and entrepreneurship training. Life skills training courses are intended to meet the aims of the ADP by enhancing the self-confidence and knowledge of girls. The entrepreneurship training courses provided include: (i) cultivating local crops; (ii) vegetable cultivation; (iii) poultry rearing; (iv) poultry and livestock vaccinator training; (v) tailoring and other non-farm businesses; (vi) community health worker training.

Two girls from each ADC volunteer to be trained to run the club on a daily basis. Their primary responsibility is to manage the ADC activities and facilitate the life skills training courses. The livelihood training is provided by BRAC professionals. As described in more detail below, as part of our survey design, we measure pre-program correlates of the life skills and entrepreneurship skills of each adolescent

and training targeted towards female entrepreneurs.

girl, to explore whether those that would *ex ante* most benefit from the ADP are more likely to attend. The second key component of the ADP is the provision of microfinance. In compliance with financial regulations, a lower age limit of 18 is set for girls to be eligible to graduate into microfinance typically one year after the initiation of the ADC. By this time, the livelihood and entrepreneurship training courses will have been completed.

2.2 Program Evaluation

This paper is part of a larger evaluation of the ADP program, that follows an RCT research design. We focus here on aspects of the research design that are relevant to understand and learn from adolescent girls' intention to participate in the ADP, as expressed in a baseline survey and prior to respondents having knowledge of whether their village had been assigned to actually receive the ADP. To begin with, 150 villages in the districts of Iganga and Kampala were selected for the evaluation. The former district is more rural than the latter. Each district is divided into ten branch offices, and one BRAC office operates in each branch. Villages are then selected into the evaluation sample if they are located within four kilometers of the branch office. Hence the most remote villages are less likely to be surveyed.

Two thirds of villages are then randomly assigned to be treated with the ADP, and the remainder serve as a control group that will receive the program after the evaluation is conducted.[4] For a village to be selected, it is not a pre-requisite for BRAC to already operate in the village. In all cases however, the existence of the branch office guarantees that BRAC does operate within the branch.[5] As part of our survey design we measure whether familiarity with BRAC or other NGOs determines the intention to participate. This helps shed light on whether any potential benefits of the program tend to accrue to those select locations where NGOs already operate. On the other, we also assess whether past experiences – good or bad – with other NGOs shape participation.

On the selection of individuals into participation in treated villages, pre-randomization a full list of potential beneficiaries in each village is identified by BRAC field officers. This covers girls aged between 10 and 25 and so is wider than the formally eligible set of girls aged between 14 and 20. The program is explicitly designed to target both girls enrolled full-time in school and those that have dropped out – less than 1% of girls in our survey report never enrolling in school. Our results shed light on whether the ADP has the unintended consequence of encouraging girls to drop out of formal schooling. Post-randomization, our survey instruments are fielded in treatment and control villages. In treated villages BRAC advertises the program door-to-door promotion and girls choose to participate or not.

A priori, there are two principal sources of non-random selection into actual participation due to the ADP's design. First, there are monetary costs of participation. More precisely, there is a fixed admission fee of 2000UShs (roughly1.25$), and an ongoing monthly fee of 1000UShs. However, ADC leaders retain the discretion to allow delayed fee payment if necessary. In practice, many girls do not actually pay the fee and so essentially, there are no monetary costs of attendance.[6] Hence the primary cost in this context is time. The ADCs meet for at least an hour each day for five days a week, and each specific training course is rather intensive. For example, the vegetation or poultry courses last one week, the hairdressing course lasts 20 days. The life skills training lasts 20 days.[7]

[4] Randomization occurs within branch, so two thirds of villages in each branch are assigned to treatment. These are equally divided between the two treatments – whether microfinance is phased in 12 or 18 months after the ADP's initiation. Data from one treated village was not collected due to logistical difficulties.

[5] BRAC is expanding its activities throughout Uganda. Since June 2006 BRAC has established microfinance groups throughout Iganga and Kampala districts. There are currently 2352 groups with 44,000 members and over $16million has been dispersed in loans. On education, since January 2007 58 learning centres have been established, 1891 children enrolled 50% community teachers trained. On health, since January 2007, 183 community workers have been trained who have the potential to reach 183,000 individuals. Given the success of these operations it is quite likely that BRAC has established a positive reputation in the region thus far.

[6] In a small-scale follow up survey based on the registration records of ADCs, we found that perhaps around three quarters of girls were not paying fees at the time of the survey. Among 1200 surveyed non-participants, less than 1% said they would be attracted to join the ADC if they received help in paying the fees.

[7] We view these time costs as predominantly stemming for time spent at the ADC rather than travel times because typically, the club is located within the village, and villages are small. There are a small number of villages in which no appropriate location could be rented within the village and the ADC is located on the village outskirts.

2.3 Survey Instruments

We interviewed approximately 35 girls from each village sampled from the pre-randomization list of potential beneficiaries. Of these, approximately 25 are aged between 14 and 20 inclusive, and the remaining surveyed girls span ages below 14 and above 20 because they are likely to participate in practice. As eligible girls do not necessarily reside with their parents, we fielded survey instruments to: (i) adolescent girls; (ii) the head of household in which she resides; (iii) her parents if they reside in the same village and are not covered in (ii). This covers the possibility that an eligible girl is married and either resides in the household of her parents-in-law, or heads her own.

The adolescent girl survey instrument contains modules on: (i) time use split between education, income generating activities, and leisure; (ii) financial literacy and analytical ability; (iii) savings, borrowing, and lending; (iv) expenditures; (v) expectations and empowerment related to their aspirations, marriage prospects, fertility, children, attitudes towards entrepreneurship, self confidence, mental health, and overall life satisfaction; (vi) social networks and relationships with parents, friends, and marriage partners; (vii) risky behaviors; (viii) intentions to participate in a ADC like program. The household survey instrument contains modules on: (i) household members including their education and income generating activities; (ii) expectations parents' have over *all* their children with regards to children's education, business opportunities, marriages and relationships; (iii) household assets, housing conditions, and water and sanitation infrastructure; (iv) savings, borrowing, and lending of the household; (v) intra-household transfers; (vi) basic information on consumption and expenditures.

In total, 5133 adolescent girls were interviewed. Of these 3529 are aged 14 to 20 inclusive and so are formally eligible to participate in the ADP, although for reasons noted above, our analysis will consider all girls aged 10 to 25 inclusive. On average, around one fifth of all adolescent girls in the village are surveyed, and around 10% of all village heads of households are surveyed. In the short run, measured a few months after the program's initiation, in treatment villages around 25 girls per village are participating in the ADP. This corresponds to a short run participation rate of 24% which is in line with BRAC's *ex ante* expectation that between 25 and 30% of eligible adolescent girls would actually participate in the program in Uganda.

3 Descriptive Evidence

3.1 The Intention to Participate

In the survey instrument for adolescent girls, one specific module asked respondents about their likelihood to participate in a hypothetical ADP-like programme. We elicited information on both the extensive margin of participation, i.e. whether they intended to participate at all, as well as the intensive margin, i.e. how frequently they expected to participate conditional on attendance.[8]

On the intention to participate, girls were asked to give their likelihood of attendance on a 10-point scale. Adolescent girls are generally optimistic about participating. On average, girls rank the likelihood to be 8.67 out of 10, although 10% of respondents provide a ranking of four or below. Given this skewed distribution, we define a respondent to be sure of attending if she responds with 10 the previous question. We then see that around 60% of girls are certain to participate at least once on the extensive margin. On the frequency of participation we find that 31.3% of respondents state they will participate more than three times per week, and so attend the majority of meetings for an ADP-like program. Hence, as expected, respondents are more certain to participate *per se* rather than participate frequently.

We combine responses on the extensive and intensive margins of participation to define an enthusiastic participant: namely those that report they will participate for sure and at least three times per

[8] Enumerators were trained to read a script describing an ADP-like program. On the likelihood of attendance, the precise wording of the question was, "On a scale of 0-10, where 0 is "I definitely would not join such a club" and 10 is "I definitely would join such a club" how much would you like to join such a club?". On the frequency of attendance, the precise wording of the question was, "If you join, how many times do you think you would go per month?". Possible responses were every day or almost every day; three to five times a week; one or two days a week; two or three days a month; once a month or less; never. The question did not state whether and how much participation would cost. As explained in the main text, in practice many girls do not actually pay to attend the ADC.

week. On this definition, 21.2% of girls are enthusiasts, which closely matches BRAC's *ex ante* expected participation rates and actual short run participation rates. Hence although 60% of girls reported to be certain to attend, we note that around two thirds of these girls are not likely to attend very often.

3.2 Perceived Costs and Benefits of Participation

Table 1 shows adolescent girls' main perceived costs and benefits of participation. These are split between enthusiastic and non-enthusiastic participants, as defined above. On the costs of participation, time costs are always reported to be the most important barrier. The most frequently reported cost is that participation would take time from household work. This is significantly higher among enthusiasts than non-enthusiasts. The second most reported time cost is that it would take time away from school. However, this is significantly more likely to be reported as a perceived cost by non-enthusiasts than enthusiasts. This hints at the possibility that enthusiasts are less likely to be enrolled in full-time school, a possibility confirmed in the regression evidence presented in the next section.[9]

On the benefits of participation, the two most important benefits reported as seen to be to learn new skills and make friends. The first of these matches well with a primary purpose of the ADP, although we cannot identify whether the girls want to receive more life skills training or entrepreneurial training. The second is a natural by-product of the time spent with the same group of individuals, that might not meet as frequently otherwise. As with the perceived costs of participation, enthusiasts differ from non-enthusiasts in how they view the benefits of participation. Enthusiasts are significantly more likely to view the main benefit as the acquisition of skills, and significantly less likely to see the formation as friends or to socialize as a major benefit.[10]

As might be expected, comparing the perceived costs and benefits between girls that are enrolled in school and those that are not, enrollees view the primary cost as taking time from school, and view the primary benefit as making friends. Non-enrollees view the main cost as taking time from household chores and the main benefit as learning new skills.

3.3 Adolescent Girl and Household Characteristics

The upper panel in Table 2 presents descriptive evidence on adolescent girl characteristics. Around 70% are full-time enrolled in school, 8% have at least one child, and 9% have a stable partner. Such high levels of school enrolment are fairly consistent with what parents report in the household survey instrument, and from other household surveys from Uganda. Among the non-enrolled, the average years of completed schooling are just over eight so most girls will have acquired basic literacy and numeracy skills. The main activities for the non-enrolled are housework (20%), looking for labor market work (15%), and running a small business (9%). For those with such small businesses, the total cash and in-kind income from the enterprise is $2 per day on average.

However there is no clear division between girls that are enrolled full-time in school, and those engaged in labor market or household production related work. All girls are engaged in both types of activity to some extent. For example, for enrolled girls, only 3% report working no hours in household chores; the remainder report working 13 hours on household chores on average. Among the non-enrolled, even fewer report not working any hours at home, and on average the remainder report working 25 hours on household chores on average. Among enrolled girls, almost three quarters report working some hours outside of the home, and conditional on them doing so they report working 10 hours in such activities. Among the non-enrolled, a similar percentage report working outside the home and conditional on them doing so, they report an average of 20 hours spent on such activities.

[9] Respondents were asked, "what would be the difficulties/costs in joining such a club?". They could list any of the following answers: takes time away from household work (chores), takes time away from my work outside the home, takes time away from my children, takes time away form school, people would disapprove, others (specify).

[10] Respondents were asked, "If you join, what do you think will be the benefits for you?". They could then list as many of the following answers that applied: socialize/make new friends, meet with my current friends, acquire new skills, don't have anything better to do, have fun, it would make my parents happy if I join, it would make my teacher happy if I join, it would make my husband happy if I join, other (specify).

Given these patterns of time usage, there are likely to be binding time constraints on participation in an ADP-like program. We use this information to understand whether the ADP predominantly attracts girls already engaged in labor market activities, or whether it draws girls out of school, which would clearly be an unintended negative consequence of the program, but an issue that all such policies targeted at adolescents need to address.

The lower panel of Table 2 presents descriptive evidence on the characteristics of households in which adolescent girls reside. Just over a quarter of households have at least two eligible girls – aged between 14 and 20 – resident in them, so in the later analysis we check for whether this specific demographic characteristic of households affects the intent to participate. As a measure of household resources we use the log of per capita household expenditures. As expected, there is considerable variation in this over households. We use this to shed light on whether adolescent girls from wealthier households have stronger intentions to participate. Finally we note that a quarter of households have some experience with NGOs in general, but not BRAC in particular.

4 Empirical Analysis

4.1 Correlates of the Intent to Participate

To begin with, we identify the set of individual and household characteristics that predict adolescent girl's intent to participate. Our dependent variable is the indicator EP_{ihv}, which equals one if individual i in household h in village v reports she is enthusiastic, namely she is both certain to attend the club, and to do so at least three times per week. We estimate the following specification,

$$EP_{ihv} = \beta_i X_{iv} + \beta_h X_{hv} + u_{ihv}, \tag{1}$$

where X_{iv} are characteristics of individual i and X_{hv} are characteristics of the household i lives in. We estimate (1) using a linear probability model and we cluster standard errors at the village level to allow for unobserved and common participation determinants among all girls residing in the same village. We later control for village fixed effects to purge u_{ihv} of any village specific components that drive intentions.[11] We note that as all right hand side variables are measured before the program is implemented, these cannot be affected by the program itself, nor are these affected by the intention to participate.

Column 1 of Table 2 reports the results. The first set of controls relate to individual i's demographics that affect both the benefits and costs of joining an ADP-like program: age, whether she is enrolled in schooling full-time, whether she has children, and whether she has a stable partner. Girls that are enrolled full-time and those who have a stable partner are 12% and 7% less likely respectively, to intend to participate, whereas girls who have children are 9% more likely to want to participate. Age does not affect the intent to participate, despite the variation in sample girls' ages.[12] To quantify these marginal effects, we note that the mean level of the dependent variable is .212. Together these suggest the need for single mothers to participate in order to support their children.

Our survey measures financial and analytic skills using the number of correct answers to everyday financial problems questions and to picture matching questions, respectively.[13] Financial and analytic skills are both negatively correlated with the intent to participate, but only the effect of analytic skills is precisely estimated. The estimates indicate that a one standard deviation increase in the analytic skill

[11] In principle one could include household fixed effects to control for household heterogeneity, but the sample does not contain a sufficient number of households where multiple eligible adolescent girls are surveyed.

[12] We also found no evidence of a non-linear effect of age on participation, as might have been the case if those less than 14 and older than 20 were less likely to participate.

[13] The financial skills score is the sum of correct answers – which could be multiple or open ended – to the following four questions, "is there any difference in the interest rate of a current account and savings account in a bank? If so, which one gives a higher interest rate?"; "suppose you have deposited 100 UShs in the bank for an interest of 10 UShs per year. If you withdraw all the money after 2 years, how much will you get?"; "suppose you need to take a loan of UShs 1000 and you have two choices. In one is you pay an interest of UShs 10 every month and in the other you pay an interest of UShs 120 at the end of the year. Which one has a higher interest rate?"; "What will happen to the price of charcoal if the price of kerosene increases?". The analytical skills score is the sum of correct answers to five questions each asking to select one of six tassels to complete a larger figure.

measure lowers the probability of participation by 3 percentage points – just under 15% of the sample mean. As quantitative skills are something the training courses of the ADP aim to improve, on this dimension, the program seems to attract the girls for whom the marginal benefit is higher, assuming there is no skills threshold below which girls would not benefit from participating in the ADP.

The next set of controls analyze the role of the girls' self-reported entrepreneurial skills and gender roles in household income earnings. To measure entrepreneurial skills we asked girls to rank their ability on ten dimensions of business management.[14] Column 1 shows the program attracts girls who think they can be successful entrepreneurs. A one standard deviation increase in the entrepreneurship score raises the probability of participation by 2.2%, that is 10% of the sample mean. In line with this, girls who believe that men and women should contribute equally to household income are more likely to participate by 3.7%, than those who believe men should be primarily responsible. These findings suggest the selection process is quite nuanced: potential participants believe they could be successful entrepreneurs but currently lack the quantitative skills to do so.

The next set of controls measures girls' self reported happiness and their satisfaction with family life. In line with the finding that girls who are more confident in their business skills are more attracted by the program, those with a more positive outlook on life are also more likely to want to participate: a one standard deviation in the happiness measure increases the intention to participate by 2.5%. Controlling for overall happiness, a one standard deviation increase in dissatisfaction with their family life increases the intention to participate by 4%. The program might thus attract girls who are less likely to receive livelihood training from their family, or be less satisfied with it, and who are motivated to seek financial independence. Hence dealing with intra-familial relations might go hand in hand with such programs.

The remaining controls explore the role of household characteristics on the intent to participate. The estimates indicate that household size, household education as proxied by the years of education of the most educated member, and the presence of other eligible siblings do not affect the intention to participate.[15] On the other hand, the program attracts girls from poorer families: a one standard deviation increase in household per capita expenditures, decreases the intention to participate by 2.6%. This is consistent with the descriptive evidence, suggesting the participation fee is not a binding constraint in practice. Finally, we find that past experience with NGO projects discourages participation. Girls living in households where at least one member has discontinued participation in an NGO project are 7% less likely to want to participate.[16]

While several individual and household characteristics are significantly correlated with the intention to participate, four stand out as having the strongest impact. The effects of being in school full time and having a child shift the participation probability by half its mean, while having a stable partner, or being in a household with past NGO experience can shift it by one third of its mean. While the first three are key determinants of the cost and benefits of participation, the fact that past NGO experience has such a sizeable impact is certainly surprising and raises the possibility that the success of the program depend on the history of NGO activity in the village.

4.2 Village Heterogeneity

Village level factors can affect participation decisions of adolescent girls than reside within them. For example villages might be differentially integrated into local markets, thus varying the marginal benefits

[14] These are: (1) Run your own business; (2) Identify business opportunities to start up new business; (3) Obtain credit to start up new business or expand existing business; (4) Save in order to invest in future business opportunities; (5) Make sure that your employees get the work done properly; (6) Manage financial accounts; (7) Bargain to obtain cheap prices when you are buying anything for business (inputs); (8) Bargain to obtain high prices when you are selling anything for business (outputs); (9) Protect your business assets from harm by others; (10) Collecting the money someone owes you.

[15] We also explored further the effects of household demographics. For example, we found no evidence that girls with brothers of secondary school age are differentially likely to want to participate for example. Nor are girls who have no brothers of any age.

[16] One concern is that enumerators in treated villages might have framed the questions on intentions to participate differently, or behaved differently in some other way, to affect responses. To check for this we estimated the specification separately for treatment and control villages. We found the marginal effects to be qualitatively the same. Moreover, additionally controlling for a dummy for whether village v is treated or not, is not found to be significantly different from zero at conventional levels of significance.

of livelihood and entrepreneurship training. To explore this, in Column 2 we estimate (1) with village fixed effects. The comparison between Columns 1 and 2 highlights the difference between determinants of participation that vary within village and those that are common to most girls in a village. There comparison highlights three points of note, which are all robust to using probit or conditional logit models.

First, the coefficients of most individual level determinants are robust to the inclusion of village fixed effects, suggesting that, for instance, there are no systematic differences in school enrollment, analytical skills, or satisfaction with family life, across villages. Second, the two noticeable exceptions to this pattern are the effect of having a stable partner – whose coefficient drops by half and becomes insignificant – and beliefs on gender roles in marriage – whose coefficient doubles and is more precisely estimated. This indicates that marriage norms vary substantially across villages and is consistent with the fact that we have considerable variation in our sample along the lines of whether villages are located in rural or peri-urban locations, and the predominant religion with the village.

Third, both the effect of household wealth and past NGO experience is driven by variation between villages. In other words we find that the program attracts girls from poorer villages but we find no evidence that poorer girls within each village are more likely to participate. Interestingly, the fact that the negative impact of previous NGO participation is identified from cross-village variation indicates that the effect is not due to idiosyncratic households' responses to NGOs, but rather that the effect is common to all households in a given village. This makes the issue of spillovers between NGOs highly salient in this context and points to the need of specialized targeting, for instance with dedicated information campaigns, in villages that might have had negative experiences with other NGOs in the past.

4.3 Intensive Versus Extensive Margins of Participation

Our definition of intention to participate contains information on both the intensive and extensive margins. It is informative to analyze each of these independently to assess whether there are factors that prevent participation altogether or whether most of the variation occurs at the intensive margin. Columns 3 and 4 reveals that most determinants have the same effect on both margins, namely determinants that increase (decrease) the probability of participating also increase (decrease) the frequency of participation. Three exceptions are noteworthy.

First, schooling and age do not affect the probability to participate but girls who are enrolled full-time in school and older girls are less likely to attend frequently. This is in line with the intuition that the opportunity cost of time might be higher for these girls. Second, both the financial skills and the self assessed entrepreneurship score increase the probability of participating but decrease the frequency of participation. This might capture different motives for attending. In particular girls who are mostly attracted by the financial or business training components of the program might want to attend only on days in which such training takes place. Alternatively it might capture the fact that the most able girls recognize the value of such training opportunities (and so are more likely to attend), but also face the highest opportunity costs of time (and so are likely to attend less often). Third, past NGO experience acts as a barrier to participation. Girls from households that have discontinued participation in other NGO programs are 21% less likely to want to participate in this program, this accounts for a one third reduction from the mean.

Finally, for completeness, we note results from a small follow-up survey on actual participation decisions in the short-run. More precisely, we regress whether the adolescent girl is currently participating on her intention to participate and the individual and household controls included in (X_{iv}, X_{hv}). We find that, for this smaller follow-up sample, the stated intent to participate is a robust positive predictor of actual participation, conditional on other individual and household controls. The magnitude of the effect is large – enthusiastically stating an intention to participate significantly increases the probability of actually participating by .27, relative to a mean actual participation rate, within this follow up study sample, of .476. This marginal effect is qualitatively large relative to the other controls included. This opens up the possibility of using intentions to participate to more precisely estimate average treatment effects of the ADP by understanding which individuals in control villages would have actually participated had the ADP been offered.

5 Discussion

Our results have implications for the design, management, and evaluation of similar training programs targeted towards adolescent girls in East Africa. On program design, we find that girls who are single mothers and alienated from their families are more likely to participate. In the East African context, where the family, and possibly the spouse, play a strong support role in the face of inadequate education and support from the state, a program such as this clearly fills a need. In terms of whether girls are being effectively targeted, it is encouraging to see that girls from poorer households are more likely to participate, and that girls who are currently in school are less likely to participate. This latter result is reassuring given widespread concerns that these types of program might cause girls to drop out.

On program management, most practitioners are well aware that showing up initially and participating consistently are very different things. Our results show that there can be different characteristics associated with these two decisions, even when just measuring intentions. A somewhat surprising result in terms of program-client interactions is the large negative effect on intentions to participate associated with a prior bad experience with other NGOs. Clearly reputational effects – either of NGOs individually or as a group – are important for future participation. Indeed, one of the contributors to the success of the program discussed in the introduction was its use of a well-known local NGO [Katz 2008]. In general, this effect points to the important of assessing prior experience of other organizations in target communities, even if they were not focusing on the same set of interventions.

Finally, the results shed light on the difficulty of evaluating these types of programs with non-experimental methods. As with job training programs generally, selection plays a key role in who participates. While our results indicate that some dimensions of skills, ability, and motivation clearly play a role in participation decisions, there are likely to be additional non-measured dimensions at play. Moreover, what we find is that the selection process is quite nuanced: participants want to participate if they lack financial and analytical skills, questions, but also if they have more confidence in their entrepreneurial ability. Hence the direction of bias induced by self-selection is hard to predict. The results in this paper, as well as later work with follow-up surveys will ultimately help us to understand more about the magnitude and direction of the bias.

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Table 1: Perceived Costs and Benefits of Participation by Enthusiasm

Means, standard errors in parentheses, p-value on tests of difference in brackets

	(1) Enthusiast	(2) Non-enthusiast	Test of Equality: [p-value]
Main cost is taking time from household work [yes=1]	.560	.471	[.001]
	(.016)	(.009)	
Main cost is taking time from school [yes=1]	.329	.430	[.000]
	(.016)	(.009)	
Main benefit is to acquire new skills [yes=1]	.472	.338	[.000]
	(.016)	(.008)	
Main benefit is to make new friends or socialize [yes=1]	.346	.447	[.000]
	(.015)	(.008)	

Notes: An enthusiast is a respondent that reports they would join the club for sure and attend more than 3 times per week. The standard errors on the difference and difference-in-difference are estimated from running the corresponding least squares regression allowing for the errors to be clustered by village. This regression regresses the outcome against a dummy for whether the respondent is an enthusiast. The test of equality p-value relates to the hypothesis that the coefficient on the enthusiast dummy is equal to zero. On the costs of participation, respondents were asked, "what would be the difficulties/costs in joining such a club?". They could then list as many of the following answers that applied - takes time away from household work (chores), takes time away from my work outside the home, takes time away from my children, takes time away form school/school work, people would disapprove, others (specify). On the benefits of participation, respondents were asked, "If you join, what do you think will be the benefits for you?". They could then list as many of the following answers that applied - socialize/make new friends, meet with my

Table 2: Descriptive Statistics on Surveyed Adolescent Girls

	Mean	Standard Deviation
Enrolled full-time in school	.729	.445
Age (years)	16.3	2.81
Has children [yes=1]	.100	.300
Has partner [yes=1]	.100	.300
Financial skills score [0-4]	1.42	.808
Analytical Skills [0-5]	2.20	1.37
Self-assessed entrepreneurship score [0-100]	73.7	22.3
Who should earn more [=1 if equal, 0 if husband]	.361	.480
Position on ladder of life [1-10]	4.44	1.76
Dissatisfaction with family [1-7]	3.08	1.70
Household size	5.31	1.77
Highest years of education of any household member	11.4	3.03
Is there another eligible sister in the household [yes=1]	.267	.442
Log per capita household expenditure	9.32	1.29
Number of household members currently involved with NGO projects	.230	.480
Number of household members that have been involved with NGO projects in the past	.053	.230

Notes: The data for the adolescent girl columns is obtained from the adolescent girl survey for girls aged 10 to 25 inclusive. The data for the parent columns is obtained from the household survey to the parent of the adolescent girl, if the parent is resident in the same village. The financial skills score is the sum of correct answers - which could be multiple or open ended - to the following four questions, "is there any difference in the interest rate of a current account and savings account in a bank? If so, which one gives a higher interest rate?"; "suppose you have deposited 100 UShs in the bank for an interest of 10 UShs per year. If you withdraw all the money after 2 years, how much will you get?"; "suppose you need to take a loan of UShs 1000 and you have two choices. In one is you pay an interest of UShs 10 every month and in the other you pay an interest of UShs 120 at the end of the year. Which one has a higher interest rate?"; "What will happen to the price of charcoal if the price of kerosene increases?". The self-assessed entrepreneurship (empowerment) score is derived from answers to 10 questions on entrepreneurship (empowerment) in which respondents could answer on a scale of 1 to 10. The analytical skills score is the sum of correct answers to five questions each asking to select one of six tassels to complete a larger figure. US $1 corresponds to approximately 2250UShs.

Table 3: The Intent to Participate

Dependent variable: =1 if enthusiast for participation, =0 otherwise
Standard errors clustered by village in Columns 1, 3, 4; robustly in Column 2

	(1) Baseline	(2) Village Fixed Effects	(3) Will Participate for Certain	(4) Will Attend Regularly
Enrolled full-time in school	-0.119***	-0.141***	0.031	-0.166***
	(0.022)	(0.018)	(0.026)	(0.024)
Age (years)	-0.004	-0.006**	-0.000	-0.008***
	(0.003)	(0.003)	(0.004)	(0.003)
Has children [yes=1]	0.088***	0.054**	0.066**	0.052*
	(0.025)	(0.026)	(0.028)	(0.027)
Has partner [yes=1]	-0.065***	-0.030	-0.088***	-0.071**
	(0.024)	(0.022)	(0.031)	(0.028)
Financial skills score [0-4]	-0.011	-0.009	0.049***	-0.037***
	(0.010)	(0.007)	(0.012)	(0.010)
Analytical Skills [0-5]	-0.016***	-0.009**	-0.042***	-0.026***
	(0.006)	(0.004)	(0.008)	(0.007)
Self-assessed entrepreneurship score [0-100]	0.001*	-0.000	0.003***	-0.001
	(0.000)	(0.000)	(0.001)	(0.000)
Who should earn more [=1 if equal, 0 if husband]	0.031	0.055***	0.013	-0.006
	(0.019)	(0.013)	(0.026)	(0.019)
Position on ladder of life [1-10]	0.014***	0.011***	-0.017**	0.031***
	(0.005)	(0.004)	(0.007)	(0.005)
Dissatisfaction with family [1-7]	0.022***	0.016***	0.042***	0.014**
	(0.005)	(0.004)	(0.006)	(0.006)
Household size	-0.003	0.002	-0.007	-0.001
	(0.005)	(0.004)	(0.006)	(0.005)
Highest years of education of any household member	0.001	0.007***	-0.004	0.004
	(0.003)	(0.002)	(0.003)	(0.003)
Is there another eligible sister in the household [yes=1]	0.003	-0.012	0.006	0.011
	(0.015)	(0.014)	(0.022)	(0.017)
Log per capita household expenditure	-0.019***	-0.006	-0.035***	-0.011**
	(0.004)	(0.004)	(0.008)	(0.005)
Number of household members currently involved with NGO projects	-0.001	-0.018	0.012	0.013
	(0.015)	(0.012)	(0.018)	(0.017)
Number of household members that have been involved with NGO projects in the past	-0.069***	-0.021	-0.211***	-0.028
	(0.023)	(0.023)	(0.034)	(0.029)
Village fixed effects	No	Yes	No	No
R-squared	0.056	0.157	0.117	0.048
Number of observations (clusters)	4825 (149)	4825 (149)	4825 (149)	4825 (149)

Notes: *** denotes significance at 1%, ** at 5%, and * at 10%. The sample is all adolescent girls aged 10-25 inclusive. The dependent variable is a dummy variable equal to one if the respondent is enthusiastic about the ADC, and 0 otherwise. An enthusiast is a respondent that reports they would join the club for sure and attend more than 3 times per week. The data for the adolescent girl columns is obtained from the adolescent girl survey. The data for the parent columns is obtained from the household survey to the parent of the adolescent girl, if the parent is resident in the same village. The financial skills score is the sum of correct answers - which could be multiple or open ended - to the following four questions, "is there any difference in the interest rate of a current account and savings account in a bank? If so, which one gives a higher interest rate?"; "suppose you have deposited 100 UShs in the bank for an interest of 10 UShs per year. If you withdraw all the money after 2 years, how much will you get?"; "suppose you need to take a loan of UShs 1000 and you have two choices. In one is you pay an interest of UShs 10 every month and in the other you pay an interest of UShs 120 at the end of the year. Which one has a higher interest rate?"; "What will happen to the price of charcoal if the price of kerosene increases?". The self-assessed entrepreneurship (empowerment) score is derived from answers to 10 questions on entrepreneurship (empowerment) in which respondents could answer on a scale of 1 to 10. The analytical skills score is the sum of correct answers to five questions each asking to select one of six tassels to complete a larger figure. US $1 corresponds to approximately 2250UShs.